Nuevo, CA Weather

Nuevo, CA climate is warm during summer when temperatures tend to be in the 70's and cool during winter when temperatures tend to be in the 50's.

The warmest month of the year is August with an average maximum temperature of 98.10 degrees Fahrenheit, while the coldest month of the year is December with an average minimum temperature of 34.40 degrees Fahrenheit.

Temperature variations between night and day tend to be relatively big during summer with a difference that can reach 39 degrees Fahrenheit, and relatively big during winter with an average difference of 30 degrees Fahrenheit.

The annual average precipitation at Nuevo is 11.40 Inches. Rainfall in is fairly evenly distributed throughout the year. The wettest month of the year is February with an average rainfall of 2.86 Inches.

Weather Data

Current Conditions

(Updated: 8:55 AM PDT THU OCT 13 2011)

	Fair, 72°F	Humidity: 28%	Dewpoint: 37°F
		Wind Speed: CALM	Heat Index: 72°F
		Barometer: 29.94 in.	Wind Chill: 72°F

Moon, Sunrise and Sunset

	Moon Phase: Waning Gibbous Moon	Civil Twilight: 6:25 AM PDT	Sunrise: 6:50 AM PDT
		Sunset: 6:18 PM PDT	Civil Twilight: 6:43 PM PDT

Normal Climate

Normal Temperatures

(SUN CITY Weather station, 5.97 miles from Nuevo)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Max °F	66.2	68.4	69.7	76.7	82.7	91.6	97.8	98.1	92.6	84.2	74.2	67.5	80.8
Mean °F	51.2	53.3	55.5	60.4	66.3	72.8	78.3	78.9	74.8	66.6	57.1	51.0	63.9
Min °F	36.1	38.2	41.2	44.1	49.8	53.9	58.7	59.7	56.9	49.0	40.0	34.4	46.8

Normal Precipitation

(SUN CITY Weather station, 5.97 miles from Nuevo)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Inch	2.62	2.86	2.34	0.63	0.33	0.04	0.04	0.25	0.18	0.26	0.76	1.09	11.40

Nearest Big Cities

(Population 100,000+)

Moreno Valley
10.6 Miles
Riverside
17.8 Miles
San Bernardino
22.8 Miles
Corona
24.7 Miles
Fontana
26.1 Miles
Rancho Cucamonga
33.2 Miles
Ontario
34.2 Miles
Pomona
39.0 Miles
Irvine
40.0 Miles
Orange
40.7 Miles

Data sources:

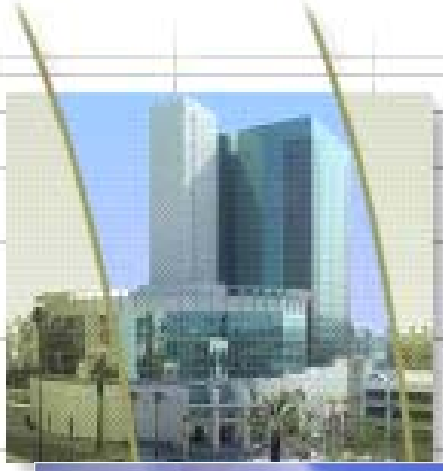
Riverside County Operational Area

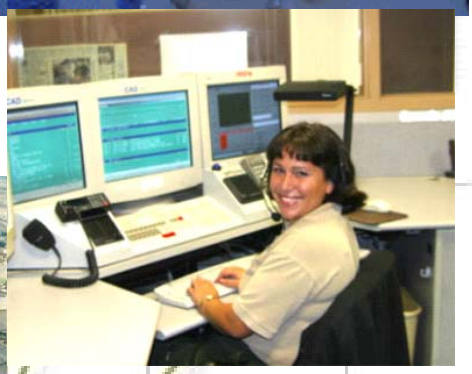
Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

FINAL COPY APPROVED BY FEMA

MARCH, 2005

PART 1





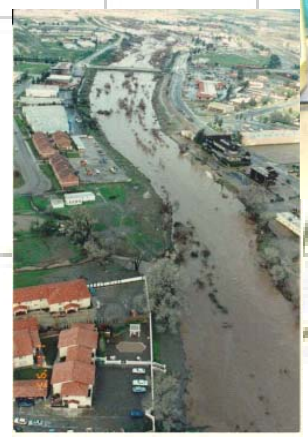


Table of Contents

Multi-Jurisdictional LHMP Evaluation Requirements
Cross Reference Table

Category of Requirement	Federal Emergency Management Agency (FEMA) / California Office of Emergency Services (OES) Evaluation Requirement & Statutory Authority	Riverside Operational Area LHMP Response
Prerequisite	Adoption by Local Governing Body: §201.6(c)(5)	Part I -County Resolution Part II - Placed at the front of each Jurisdiction's Section.
Prerequisite for Multi-Jurisdictional Plan	Indication of Specific Jurisdictions Represented in the Plan	Pages 1-2 Appendix B
	Adoption by Local Governing Body for Each Jurisdiction	Part I County Resolution Part II - Placed at the front of each Jurisdiction's Section.
	Supporting Documentation of Adoption Included for Each Jurisdiction	
	Description of How Each Jurisdiction Participated in the Plan's Development	Pages 3 – 12
Planning Process	Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	Pages 3 – 12
	Local Capabilities Assessment: §201.4(c)(ii) and §201.6©(1) – OPTIONAL REQUIREMENT	Part II - Each Jurisdictions Section
Risk Assessment	Identifying Hazards: §201.6(c)(2)(i)	Pages 22 - 39
	Profiling Hazards: §201.6(c)(2)(i)	Pages 22 – 200; See p. iii
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Pages 19 – 200; See p. iii
	Assessing Vulnerability: Structures: §201.6(c)(2)(ii)(A)	Pages 19 – 200; See p. iii
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Pages 19 – 200 See p. iii
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(c)	Pages 19 - 2000 See p. iii

Multi-Jurisdictional LHMP Evaluation Requirements Cross Reference Table
(continued)

Category of Requirement	Federal Emergency Management Agency (FEMA) / California Office of Emergency Services (OES) Evaluation Requirement & Statutory Authority	Riverside Operational Area LHMP Response
Mitigation Strategy	Local Hazard Mitigation Goals: §201.6(c)(3)(i)	• Pages 19 – 200 by Hazard (See Page iii • Part II by Jurisdiction
	Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	• Pages 19 – 172 by Hazard • Part II by Jurisdiction
	Implementation of Mitigation Actions: §201.6(c)(3)(iii)	• Pages 19 – 172 by Hazard • Pages 173 -174 • Appendix B • Appendix C • Part II by Jurisdiction
Plan Maintenance Process	Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	Pages 175 – 176
	Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)	Page 176
	Continued Public Involvement: §201.6(c)(4)(iii)	Page 176

TABLE OF HAZARD INFORMATION

Hazard	Riverside County and Listed Affected Jurisdictions From Part II	Hazard Definition, Extent, History, Future Event Probability	Risk Assessment: General Impact on People, Structures, and Infrastructure	Mitigation Strategy and Mitigation Programs
Wildfire	40	41-52	47-52	52-53
Flooding	54-55	55-62	62-65	65-67
Earthquakes	68-69	69-75	75-79 HAZUS Analysis 79-113	113-115
Extreme Weather	116-117	117-130 Listed by Weather Type	131 - 133	133 - 139
Landslides	140	141 - 145	145 - 147	147 - 148
-Insect Infestation	149	150 - 151	152	152
Dam failure	153	154 - 158	159 - 160	160
Hazardous materials (hazmat) incidents	161 - 162	162 - 164	164 - 166	167
Transportation emergencies	168	169 - 175 Listed by Type	175	175
Pipeline/Aqueduct incidents	176	177	178	178
Blackout	179	180 - 181	181	181
Toxic pollution	182	183 - 185	185 - 187	185 - 189
Nuclear incidents	189	190	190	190
Civil unrest	192	192 - 193	193	193
Jails and prisons incidents	194	194 - 195	195 - 196	196
Terrorism	197	197 - 200	200	200

Jurisdictions "Submitting" as Part of the Riverside Operational Area Multi-Jurisdictional LHMP

The following "Submitting Jurisdictions" are agencies that are part of the Riverside Operational Area Multi-Jurisdictional LHMP. These jurisdictions conducted internal and public meetings and activities in support of the Plan and completed the projects necessary to complete their portion of the Plan, both in Part I and Part II. A list of other participating agencies, private sector organizations, and people is in Appendix A.
(Note: Each jurisdiction is electronically hyperlinked to their specific portion of Part II in this Plan.)

County of Riverside

All County Departments, Commissions, and Agencies

Cities

1	City of Banning
2	City of Beaumont
3	City of Blythe
4	City of Calimesa
5	City of Canyon Lake
6	City of Cathedral City
7	City of Coachella
8	City of Corona
9	City of Desert Hot Springs
10	City of Hemet
11	City of Indian Wells
12	City of Indio
13	City of Lake Elsinore
14	City of La Quinta
15	City of Moreno Valley
16	City of Murrieta
17	City of Norco
18	City of Palm Desert
19	City of Palm Springs
20	City of Perris
21	City of Rancho Mirage
22	City of Riverside
23	City of San Jacinto
24	City of Temecula

Other Jurisdictions

25	Soboba Band of Luiseno Indians

Hospitals

26	Desert Regional Medical Center
27	Hemet Valley Medical Center
28	Inland Valley Medical Center
29	JFK Memorial Hospital
30	Kaiser Hospital
31	Menifee Valley Medical Center
32	Moreno Valley Community Hospital
33	Parkview Community Hospital
34	Rancho Springs Medical Center
35	Riverside Community Hospital

School Districts

36	Alvord Unified School District
37	Beaumont Unified School District
38	Lake Elsinore Unified School District
39	Moreno Valley Unified School District
40	Menifee Unified School District
41	Riverside Unified School District
42	San Jacinto Unified School District
43	Riverside Co. Office of Education, Children & Family Services

Special Districts

44	Idyllwild Fire Protection District
45	Elsinore Valley Municipal Water District
46	Home Gardens County Water District
47	Lee Lake Water District
48	Mission Springs Water District
49	Murrieta County Water District
50	Rancho California Water District
51	San Gorgonio Pass Water District
52	Valley Sanitary District
53	Western Municipal Water District

1. Purpose / Vision / Values

Purpose of LHMP

Riverside Operational Area (OA) has developed this Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) to create a safer community. The Riverside OA LHMP is the representation of Riverside OA's commitment to reduce risks from natural and other hazards, and serves as a guide for decision-makers as they commit resources to reducing the effects of natural and other hazards. The Riverside OA LHMP serves as a basis for State OES to provide technical assistance and to prioritize project funding. (See IFR §201.6.)

While the Disaster Mitigation Act of 2000 ("DMA 2000") requires that local communities address only natural hazards, the Federal Emergency Management Agency (FEMA) recommends that local comprehensive mitigation plans address man-made and technological hazards to the extent possible. Towards that goal, Riverside OA has addressed an expansive set of hazards.

In developing the hazard list, the goal was to create a Hazards List by identifying as many hazards as could be found in the county. This list was used as part of the planning process. Some of the disasters identified on the list were found to have a limited amount of supporting information about the potential impact, specific locations in the county where the hazard might arise, and the magnitude of that hazard on the economy, infrastructure, and citizens of the County. Those hazards that fell into to group, were identified as being part of the yearly maintenance process for the Plan.

For disasters declared after November 1, 2004, Riverside OA and the jurisdictions participating in the multi-jurisdictional effort must have an LHMP approved pursuant to §201.6 in order to receive FEMA Pre-Disaster Mitigation (PDM) project grants or to receive post-disaster Hazard Mitigation Grant Program (HMGP) project funding. The Multi-Jurisdictional LHMP is written to meet the statutory requirements of DMA 2000 (P.L. 106-390), enacted October 30, 2000 and 44 CFR Part 201 – Mitigation Planning, Interim Final Rule, published February 26, 2002.

Goals Shared with State Multi-Hazard Mitigation Plan

Riverside OA's LHMP supports the goals that it shares with the State of California Multi-Hazard Mitigation Plan, namely:

Goal 1: Save Lives and Reduce Injuries
Goal 2: Avoid Damages to Property
Goal 3: Protect the Environment
Goal 4: Promote Hazard Mitigation as an Integrated Policy

Support of Broader County Vision

The Multi-Jurisdictional LHMP supports the broader vision and values of the County of Riverside, along with the cities, special districts, and tribes within the county. As stated in Riverside County General Plan of October 2003, the Riverside County vision is:

"Riverside County is a family of special communities in a remarkable environmental setting."

The General Plan expounds on the Vision Statement by saying:

Our vision is based on values that provide the foundation for common ground that, in turn, underpin the General Plan's goals, policies, and actions. The people of Riverside County declare that they join together in holding the following values and seeking a community future based on them. It can be argued that our values are optimistic and very ambitious: that they require our best instincts to prevail. Of course-why would we seek less in shaping our communities? So, with that theme in mind, let us express the values that have motivated our community building and that will continue to do so in the future.

- Community
- Inter-relatedness
- Rights
- Responsibilities
- Risks
- Diversity
- Valued Contributions
- Varied Communities
- Balance
- Participation
- Volunteerism
- Decision Making
- Creativity and Innovation
- Distinctiveness
- Housing
- Natural Environment
- Man-made Environment
- Employment
- Safety
- Planning Integration
- Communication and Information
- Quality Management
- Sustainability
- Costs
- Governmental Cooperation
- Youth in the Community

2. The Planning Process

Planning Process Requirements Cross-Reference Table

Element	Requirement	Riverside Operational Area LHMP Response
A	Narrative Description of the Process Followed to Prepare the Plan	Pages 3 – 12
B	Documentation of Who was Involved in the Planning Process	Page 3 – 12 Appendix B List of Participants
C	Documentation of How Public was Involved in Process	Page 3-12
D	Documentation of Opportunity for Neighboring Communities, Agencies, Businesses, Academia, Nonprofits, and Other Interested Parties to be Involved in the Planning Process	Pages 3 – 12 Part I, Appendix A
E	Description of Review and Incorporation, if Appropriate, of Existing Plans, Studies, Reports, and Technical Information	Page 3 -12

Initial Planning

The Riverside County Office of Emergency Services ("County OES") acting under the guidance of the State of California Government Code Sections 8559 and 8607 has the primary responsibility for activities within the County of Riverside Operational Area. In doing so, County OES staff acted as the coordinators and as the "primary coordinating agency" for the development of the Riverside County Operational Area Multi-jurisdictional Local Hazard Mitigation Plan. The Pan was developed with the assistance of the many of County OES's public and private partners,

County OES and its partners began the initial process of planning for the LHMP in the year 2002. Although formal guidance had not been received from the State of California on the development of a LHMP, three major factors were considered in the initial planning process:

1. The County of Riverside had created the Riverside County Integrated Project (RCIP) to update its General Plan and its Safety Element of the General Plan. This update was part of Riverside County's comprehensive land use planning, capital improvements planning, and building code development to guide and control growth and development within the County. Part of the project involved input and participation from many of the cities, special districts, and tribes who would be partners in the development of a LHMP. California State Government Code 65302 (g)(2) allows cities and special districts within a county to adopt all or part of the County's Safety Element and it was felt that many of the objectives, goals, and strategies developed in the RCIP Plan could be used in the LHMP.

2. County OES and its partners believed that a multi-jurisdictional approach was the most appropriate document because of:
   a. The large expanse of unincorporated areas within Riverside County
   b. The large number of boundary (incorporated and unincorporated) overlaps between cities, special districts, and the County itself.

3. The County Fire Department, County Sheriff's Department, and County Office of Emergency Services provide contract services to over seventy-five percent of the cities in the County. This meant that these County Departments would be involved in the planning process for the majority of cities.

Once County OES and its partners made the decision to use the multi-jurisdictional approach, a process for planning and developing a LHMP was created. (Note: Throughout this document, the word “County” is used to refer to Riverside County (County OES and all County Departments, Commissions, and special agencies) and all of the County's partners in the LHMP process).

The primary design of the Plan was to have a base document (Part I) with detailed information about the county, all of the hazards in the county, and proposed hazard mitigation goals and strategies. The second part of the Plan (Part II) was a document specifically identifying each 'Submitting Jurisdiction's" hazards, mitigation priorities and strategies, and land use issues.

The Planning and Plan Development Steps

This process involved the following steps and milestones:

Step 1 - Developing Partners

County OES sent out letters with information about the LHMP and inviting organizations and individuals to participate. A copy of the letter is located in Appendix A. These letters were mailed to
1. All jurisdictions within the Operational Area
2. Those counties and cities adjacent to the County
3. Private businesses, utilities, and organizations within the county who were participating in the RCIP.

4. Members of the County's Citizen Community Groups and other volunteer organizations. Under County Ordinance, the County of Riverside is divided into eight different Citizen Community Emergency Preparedness Groups that function under the Riverside County Fire, Office of Emergency Services. These groups consist of citizens interested in disaster preparedness, members of the local unincorporated areas of the County, community leaders, gated residential communities, amateur radio groups, emergency management, and members of the business community. These meetings are open, public meetings with agendas posted at various community buildings, etc.
5. Members of the Western Riverside Emergency Council (representing the County's hospitals), the Emergency Managers of Riverside County, and the Emergency Mangers of the Coachella Valley were used as working groups in the development of the LHMP.
6. Special groups representing specific disciplines such as agriculture, the military, etc.

A list of participants is located in Appendix A. The City of Redlands was the only out-of-county jurisdiction that participated in the planning process.

Between September 2003 and October 2003, a number of initial informational meeting were held throughout the County to discuss the Plan and gather interest from jurisdictions. Each agency head signed a Letter of Participation formalizing their agency's commitment to the planning process. Those agencies that could formally commit to the planning process (CALTRANS, CHP, military, etc.) indicated a strong level of support to the planning process and participated heavily. Additional planning meetings were held between October 2003 and April 2004 with the different groups to conduct training on how to develop the plans. Planning, assessment, and development meetings were held from January 2004 through September 2004.

Step 2 - Establish Goals and Priorities

After developing the various partnerships needed to create the Plan, a set of overall Goals and Objectives were created. Although the County RCIP Plan set a global set of prioritized Goals, Objectives, and Activities for the County and those agencies utilizing the RCIP Plan as part of their General Plan, as the lead agency, County OES staff felt that a general set of Goals and Objectives were necessary. The following identifies those Goals and Objectives:

1. Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities and infrastructure due to natural, man-made, and technological hazards by:
   a. Promoting disaster-resistant future development
   b. Promoting hazard mitigation as a public value in recognition of its importance to the health, safety, and welfare of the population

2. Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities and infrastructure due to floods by:
   a. Promote the continuing purchase of flood insurance by property owners in flood hazard areas.
   b. Protect existing assets with the highest relative vulnerability to the effects of flooding associated with the 100-year floodplain.
3. Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities and infrastructure due to landslides by better identifying the types and locations of potential landslide zones.
4. Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities and infrastructure due to natural, man-made, or technological disasters by better determining detailed information about individual structures, other critical facilities and infrastructure with the highest relative vulnerability any of the known hazards.
5. Promote hazard mitigation and disaster preparedness as a public value in recognition of its importance to the health, safety, and welfare of the population through a higher level of public education.

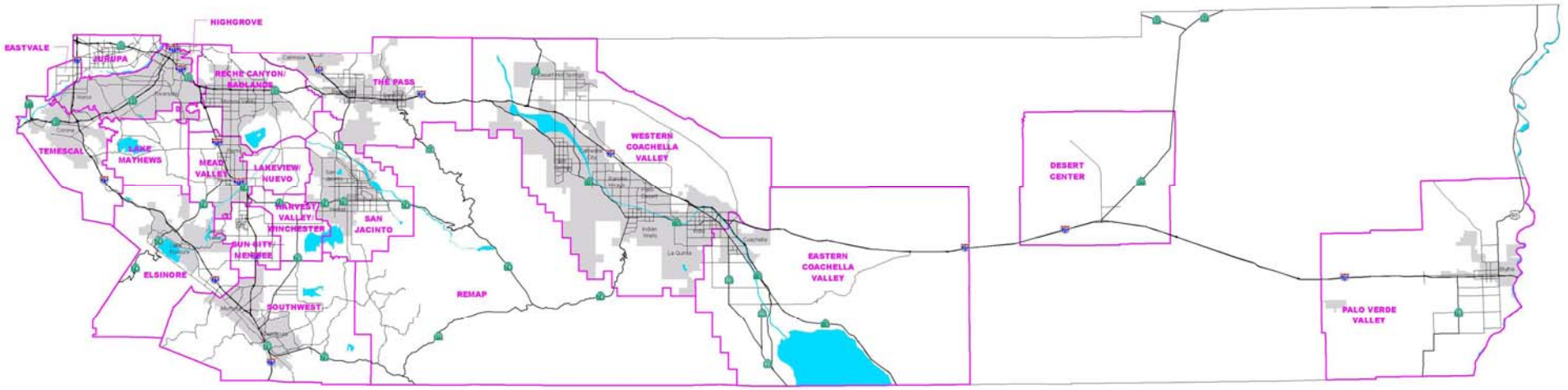
Step 2 - Identification of Hazards and RCIP Plan Data.

The County General Plan, the Safety Element to the General Plan, and the RCIP Plan were approved in October, 2003. In the RCIP Plan, specific strategies and goals were established for the mitigation of hazards, the reduction of the land use development on the environment, and efforts to reduce the impact of urban interface with the forests and desert.

Starting in 1999, numerous meeting were held to develop the new Plan ans Safety Element Updates. As part of the planning process, the RCIP plans were subject to numerous public sessions and meetings. Additionally, a phone survey conducted with community members from each Supervisorial District for input and response to the Plan. A listing of the meetings, minutes of the planning meetings, and newsletters can be can be found at the RCIP Library at: http://www.rcip.org/library.htm. The RCIP Final Plan draft was posted on the RCIP Website (http://www.rcip.org) for a review and comments by the general public for approximately six months prior to the final adoption of the RCIP Plan.

The RCIP Plan divided the County into eighteen geographical areas to better identify individual issues and make specific recommendations. This also allowed for the identification of specific hazards and mitigation objectives, goals, and strategies based on the specific geographical areas within the county. These eighteen geographical areas coincide with the various cities in the county. The map on the next page identifies the geographical areas in the RCIP Plan.

Specific hazard information as well as mitigation strategies will be listed as part of each hazard's discussion in Part I of this Plan.



Source Information: County of Riverside.
The oldest data shown on this map is 1990.

Area Plan Boundary
Water

0 65,000 Feet

Figure LU-4

RIVERSIDE COUNTY AREA PLAN BOUNDARIES

Data from these plans was gathered for use by the participates in the LHMP project. The strategic mitigation proposals and goals adopted in the General Plan were used as the basis for the development of the mitigation strategies listed in the Mitigation Goals Questionnaire

Step 3 - Local Meeting and Training

Once the partners in the Plan development were established, County OES held numerous meetings and training sessions. These open meetings had participation from the different jurisdictions, community groups, the general public, and specialty groups such as the agriculture group. In addition to these meetings, the jurisdictions had local meeting to discuss they hazards and mitigation goals within their individual community. The purpose of these meetings was to:

1. Inventory and assess the hazards within the County including:
   a. The specific type of hazard.
   b. Specific information relating to location, size, etc.
   c. Any history of major events relating to the hazard
   d. Jurisdictions directly or indirectly threatened by the hazard
   e. Potential economic impact of the hazard.
2. Develop a system of evaluating the risk potential, probability, and vulnerability of the major hazards on the County, the jurisdictions within the County, and its citizens.
3. Develop mitigation efforts and strategies through the use of RCIP recommendations and others developed by the Plan's partners.
4. Establish a prioritization process for prioritizing the importance of the different mitigation efforts and strategies on a jurisdiction-by-jurisdiction basis.
5. Develop the different documents for the jurisdictions to complete for their section of Part II of the Plan.

Step 4 - Individual Jurisdiction Activities

Jurisdiction Information

Each jurisdiction provided jurisdictional information identifying:

1. The jurisdiction and the contact person
2. The jurisdiction's service area size and population
3. If the have an EOP Plan and a Safety Element of their General Plan

This information will be used by County OES to help determine what activities need to occur as part of this plans maintenance process as well as which jurisdictions need to have EOP plans written and/or updated.

Hazard Assessment and Identification

Each jurisdiction was asked to conduct an assessment of hazards for their jurisdiction and complete the forms detailing the results of their assessment. This assessment process consisted of identifying the hazards specific to their jurisdiction, the impact of those hazards, and specific goals and strategies for their jurisdiction. This assessment was conducted through the use of a questionnaire developed during the first round of meetings with the various working groups and from the hazards listed in the County's General Plan Update and RCIP. The questionnaire was used to help each Submitting Jurisdiction to identify the hazards within their service area. The information was used as the basis for each jurisdiction to evaluate its capabilities, determine its needs, and develop goals and strategies. The information identifies:

1. What specific hazards are within or adjacent to the service area of the jurisdiction.
2. Which of those hazards have had reoccurring events?
3. What specific hazards and risks are considered by the jurisdiction to be a threat specifically to the jurisdiction? These locations were identified by name and location for inclusion in the Specific Hazard Summary Table for each jurisdiction.
4. Specific types of facilities owned and operated by the jurisdiction.
5. Locations damaged from prior disasters or hazard causing events.
6. Information about the jurisdiction's EOC location in relationship to the hazards.

Jurisdiction's Critical Facility Evaluation

Riverside County OES, acting as the Operational Area, in cooperation with all local jurisdictions, developed a computer based Emergency Response Database for the County of Riverside. This database was created so emergency planners could use the database as a planning tool to develop response plans, evaluate their jurisdiction's capabilities, determine its needs, and develop goals and strategies. The program is also used during events to assist in-field units and planners in the EOCs.

The database functions similar to HAZUS in that it contains a list of major hazards and risks, all identified critical facilities in the County, and a topographical overlay of the County. Unlike HAZUS, the database does not contain any dollar values. This is a proposed upgrade in the future. The database is built in ArcView and a copy of ArcView and the database was provided to the jurisdictions in the County. The database is updated by the jurisdictions on a yearly basis through County OES and maintained by County GIS. Many of the HAZUS, RCIP, and other maps in the Plan were created with the use of this database.

Summarized HAZUS Results

Earthquake risks for each city and several unincorporated areas of the County were developed in terms of the vulnerability of the population and infrastructure and costs associated with physical and economic damages or destruction. Earthquake scenarios were used based on the major earthquake faults in the County of Riverside.

Risk assessments were developed only for the cities and county unincorporated areas because of the broad overlay of the special district's boundaries and the specific data available from the cities. Several of the HAZUS and GIS maps contained in Part I of the plan depict potential impact of various hazards throughout the County on the cities, unincorporated areas, and the various submitting special districts.

Local Jurisdiction Vulnerability Worksheet

During the meetings with the various working groups, a set of primary hazards was developed. Each jurisdiction was asked to use this list and evaluate the potential for an event to occur in their jurisdiction by each of the hazards. They were also asked to evaluate the potential impact of that event by individual hazard on their jurisdiction. The impact potential was determined based on:

1. Economic loss and recovery
2. Physical loss to structures (residential, commercial, and critical facilities)
3. The loss or damage to the jurisdictions infrastructure
4. Their ability to continue with normal daily governmental activities
5. Their ability to quickly recover from the event and return to normal daily activities
6. The loss of life and potential injuries from the event.

The jurisdictions were asked to rate the potential and severity of different hazards using a rating scale of between 0 and 4 (4 being the most severe). The jurisdictions were also asked to rank the listed hazards as they relate to their jurisdiction from 1 to 19 (1 being the highest overall threat to their jurisdiction). The Risk Assessment rating guidelines can be found in Appendix A of this Plan.

With the assistance of the RCIP Plan and County Departments, Riverside County OES conducted an extensive evaluation of the severity and probability potential of the different hazards for the county as a whole. The hazards were also ranked for the County. Those numbers and rankings were provided to the jurisdictions as a comparison guide. The County numbers are listed at the top of each hazard discussion section. The individual agency numbers can be found in each agency's section in Part II.

A separate table was created to address the hazards relating to agriculture and was assessed by the agriculture working group. This table can be found in the Agriculture Appendix of Part I of the Plan.

Local Jurisdiction Mitigation Strategies and Goals

The working groups created a detailed list of Mitigation Strategies and Goals for the primary hazards previously identified. This list was developed so that each jurisdiction could determine what mitigation strategies, goals, and objectives would be of value for their organization. The jurisdictions were also given the opportunity to list additional strategies, goals, and objectives specific to either their jurisdiction or their workgroup (i.e. the hospitals, agriculture, etc.).

Once this list was compiled, each jurisdiction was asked to determine a priority of the strategies, goals, and objectives based on:

1. The hazards identified in their jurisdiction
2. The ability of their organization to perform the strategy, goal, or objective
3. The availability of funding

These were prioritized as High, Medium, Low, or N/A.

Local Jurisdiction Proposed Mitigation Action and Strategy Proposal

Each jurisdiction was required to develop a Mitigation Strategy Proposal based on one of the following:

1. The strategy, goal, or objective rating "High Priority" on the Local Jurisdiction Mitigation Strategies and Goals
2. A specifically identified strategy, goal, or objective that was developed as part of one of the working groups planning sessions such as the hospitals or agriculture
3. A specifically identified strategy, goal, or objective that was developed as part of one of the jurisdiction's internal working group planning sessions.

In some cases, the strategy, goal, or objective was one that the jurisdiction or working group felt was very realistic and of value.

As part of this process, each Submitting Jurisdiction was required to perform a cost-benefit analysis. They were required to answer the question at the bottom of the Proposal page that asks if they had conducted a Cost-Benefit Analysis of some type. This analysis was conducted either by completing the Cost-Benefit Form attached to the Proposal or by some other approved method. Many of the jurisdictions used the cost-effective analysis approach outlined in the FEMA publication, *Cost and Benefits of Natural Hazards Mitigation.* This cost-benefit analysis was not restricted to one of the natural hazards.

In some cases, the jurisdiction or working group identified a proposal that highlighted a life-safety issue over a standard hazard proposal. This was done when there was either historical data or other sources of information indicating that the life-safety issue needed to be emphasized or brought to the public's attention.

As part of the planning process, presentations on the different methods of cost-benefit analysis were given to the different working groups. The resources used for these presentations are listed in Appendix B of Part I, Resource List.

Development Trends Questionnaire

This questionnaire identifies a comparison of specific land use issues between 2004 and 2010. The questionnaire also identifies the specific threat potential to the jurisdiction in relationship to residential and commercial structures along with critical facilities. This threat potential is focused on structural loss rather than dollar-value loss as it relates to the three main natural hazards – earthquakes, floods, and wildland fires. The determination of specific dollar-value loss relating to commercial and critical facilities was found to be very limited and a difficult task to establish. This issue will be addressed in future updates of the Plan.

The questionnaire also requires the jurisdiction to identify the process it will use to maintain their portion of the Plan. They we given the option of continuing to work with the County or develop their portion as an independent document in the future.

County OES will use this data for future HAZUS and Emergency Response Database activities.

Step 5 - Finalization and Adoption by the County Board of Supervisors and Each Jurisdiction

A final draft of the LHMP was posted on the County's Website on September 30, 2004 for public commit. The County received ten responses to the posting. All were positive and had no comments for change or modification to the posted draft. The draft was removed from the Website on November 5, 2003.

A presentation of the Plan and its information was made in a public meeting for each of the "Submitting Jurisdiction." governing bodies. Comments were received at those open meetings and the Plan was then adopted by the governing body of each jurisdiction. An open public Board of Supervisors meeting was held to review and approve the Plan by the County of Riverside. After comments by the public and members of the Board, the Plan was formally adopted.

Copies of the adoptions can be found at the front of each jurisdiction's section in Part II.

3. Riverside County Profile

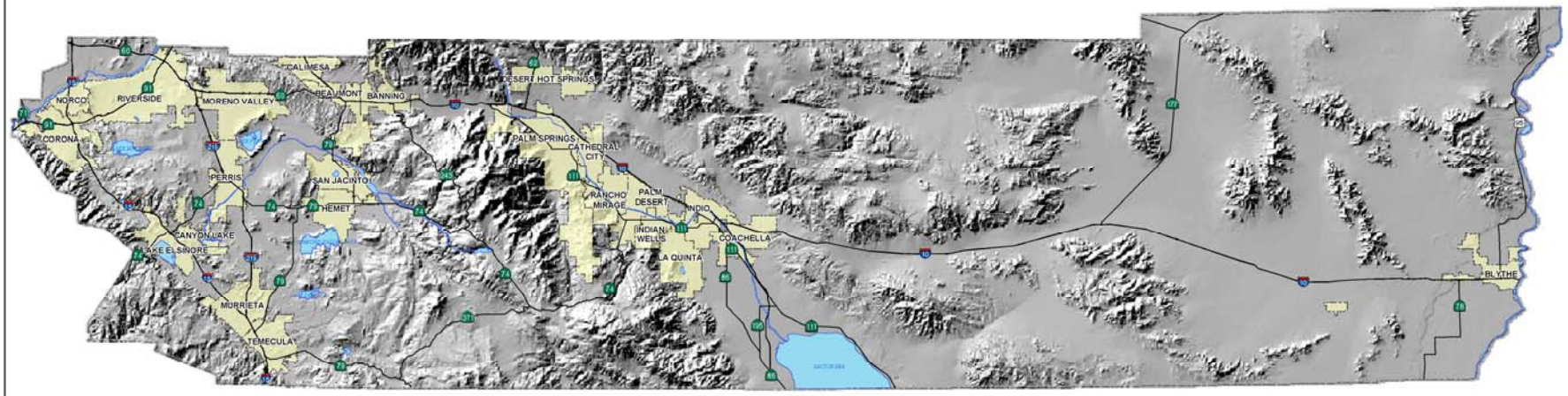
General Overview

Riverside County is the fourth largest county in the State of California, stretching nearly 200 miles across and comprising over 7,200 square miles of fertile river valleys, low deserts, mountains, foothills, and rolling plains. Riverside County shares borders with densely populated Los Angeles, Orange, San Diego, and San Bernardino Counties, extending from within 14 miles of the Pacific Ocean to the Colorado River. It is also located in the southeastern portion of the Governor's Office of Emergency Services Southern Region.

The County of Riverside is vulnerable to a wide range of hazard threats. In recent years, the county has experienced several disastrous events, including earthquakes, floods, fires, pestilence, and storms. The increased use, storage, and transportation of numerous hazardous materials create additional hazardous threats. The threat picture is further complicated by the recent terrorist attacks on the Trade Center, causing federal mandates for all localities to prepare for potential terrorist activities.

The following is a map depicting Riverside County and the areas covered by this OA LHMP

Riverside County



Created by: Janice Nollar
Source: County of Riverside

Highways
Waterbodies
Cities
County Boundary

10 5 0 10 20
Miles

N

DISCLAIMER: The County of Riverside assumes no warranty or legal responsibility for the information contained on this map. Data and information represented on this map is subject to change and may not be complete or appropriate for all purposes. County GIS and other sources should be queried for the most current information. Do not copy or resell this map.

Horizontal accuracy: Parcel data is of mapping grade (quality) only and does not represent trustworthy locations or legal boundaries. User assumes all risk of use of this product.

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Historical Setting

When Spain claimed California for its own, the Spaniards began putting a series of missions in what was then called Alta California. While no missions were ever built in what would become Riverside County, the Riverside County area played a vital role during the mission period. The San Gabriel Mission claimed lands in what are now Jurupa, Riverside, San Jacinto, and the San Gorgonio Pass, while the San Luis Rey Mission claimed land in what is now Lake Elsinore, Temecula, and Murrieta. These lands were used for grazing of the large herds of cattle and sheep that belonged to the missions. In 1776, and again in 1778, Juan Bautista de Anza, an army captain charged with discovering an overland route from the Mexican state of Sonora to San Gabriel and Los Angeles, passed through much of Riverside County and described fertile valleys, lakes, and sub-desert areas.

The Mission Period lasted until 1832, when Mexico, having taken over California from Spain 10 years earlier, desecularized the missions, and began doling out the vast mission holdings to Californians who were citizens of Mexico. The "grants" were called ranchos, and many of the ranchos in Riverside County have lent their names to modern-day locales - Jurupa, San Jacinto, San Gorgonio, Temecula, and La Laguna (Lake Elsinore).

With the advent of the transcontinental railroad in 1869, land speculators, developers, and colonists began to swarm to Southern California. The first colony in what would become Riverside County was Riverside itself. Judge John Wesley North, a staunch temperance-minded abolitionist from Tennessee who was ostracized back home after he talked a crowd out of lynching a black man, brought a group of associates and co-investors out to Southern California, and founded Riverside on part of the Jurupa Rancho. A few years later, the navel orange was planted and found to be such a success that full-scale planting started. By the time of Riverside County's formation, Riverside had grown to become the wealthiest city per capita in the country, due to the riches of the navel orange.

In the mean time, developments at Lake Elsinore, San Jacinto, and South Riverside (present-day Corona) were gaining in popularity and population. However, by the late 1880's and early 1890's, there was growing discontent between Riverside and San Bernardino, its neighbor 10 miles to the north. There were many political, spiritual, and economic differences between the two towns. San Bernardino was predominantly Democratic in nature, allowed saloons, and had been a hot-bed of secessionist sympathy during the Civil War. Riverside was temperance minded (few saloons if any were allowed in Riverside proper), and Republican. In addition, both towns were competing for settlers in an era in which many towns were languishing or dying because of a lack of inhabitants. After a series of instances in which charges were claimed about unfair use of tax monies to the benefit of the City of San Bernardino only, several people from Riverside decided to investigate the possibility of a new county.

Joined by San Diego County residents in the Temecula and San Jacinto Valleys and the desert region who were tired of living so far from their county seat, they petitioned the State legislature, held an election, and on May 9, 1893 formed Riverside County.

Further developments in Riverside County included Banning and Beaumont in the San Gorgonio Pass; Hemet south of San Jacinto; Moreno Valley east of Riverside; Perris, Lake Elsinore, Murrieta, and Temecula along the California Southern Railroad; Palm Springs, Palm Desert, Indio, and Coachella along the Southern Pacific route to Yuma; and Blythe on the Colorado River.

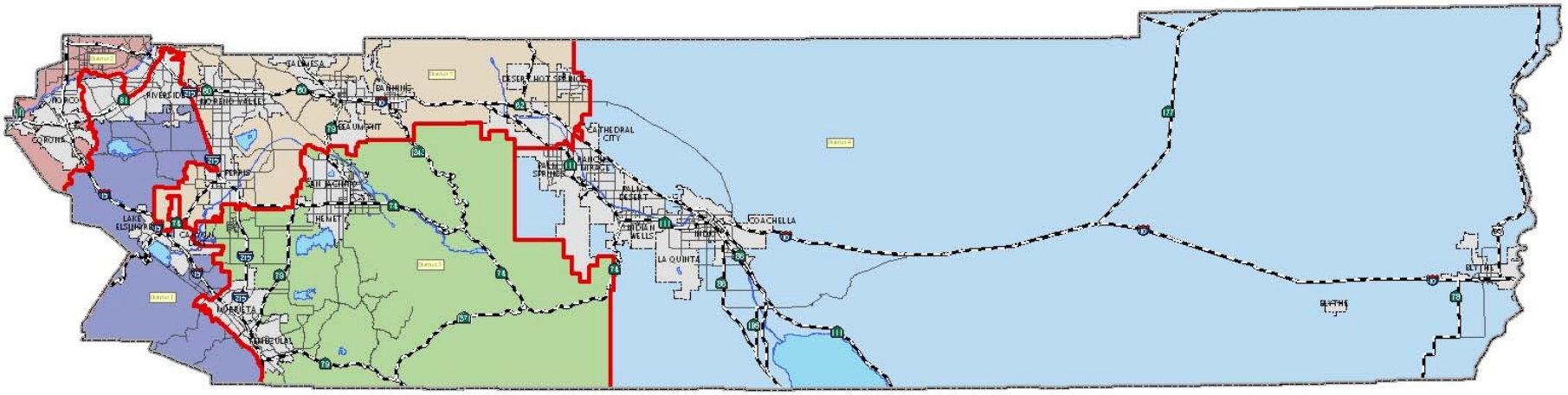
Today, Riverside County encompasses an area of nearly 7,200 square miles, and boasts a population of over 1.5 million people. Over the last decade, it has consistently been one of the fastest growing areas in the country.

Governing Bodies

Riverside County is governed by a five-member Board of Supervisors. By law, Supervisorial district boundaries are adjusted every ten years based on population changes reported by the U.S. Census Bureau. Each Supervisor currently represents over 300,000 residents (approximately one-fifth of all County residents). The map on the following page outlines the Supervisorial Districts.

Other participating jurisdictions in the OA LHMP have their own governing bodies (e.g., city councils, tribal councils, water district boards, hospital district boards, etc.).

County of Riverside Supervisorial Districts



Highways
Major Roads
Waterbodies
Cities
Supervisorial Boundary Lines

SUPERVISORIAL DISTRICT 1
SUPERVISORIAL DISTRICT 2
SUPERVISORIAL DISTRICT 3
SUPERVISORIAL DISTRICT 4
SUPERVISORIAL DISTRICT 5

N

0 3 6 12 18 24 Miles

8 4 0 8 16 24 32 Kilometers

Data: August 25,2004
Source: County of Riverside
U: maps supervisorial supervl1x17.mxd

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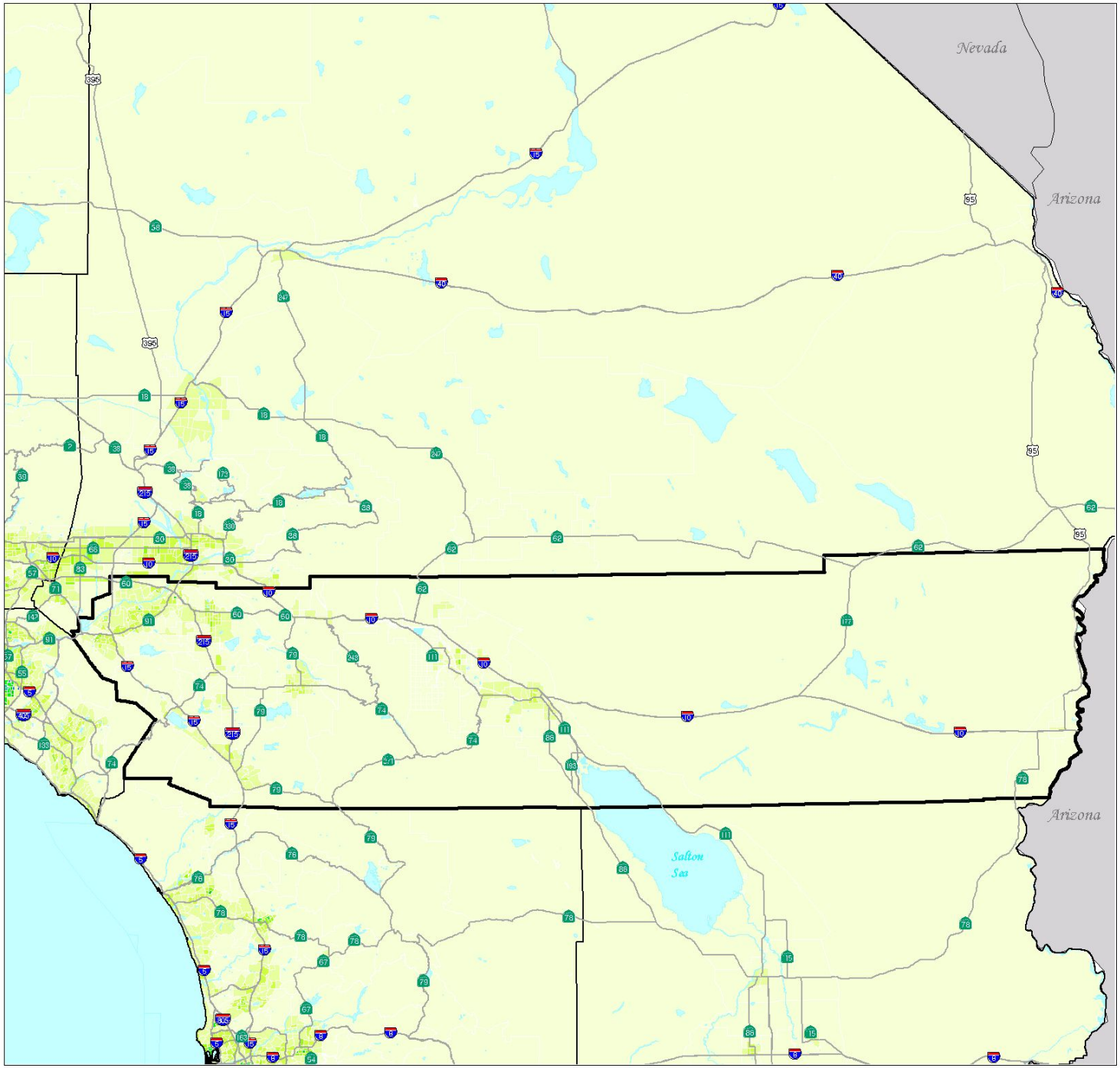
County Wide Data

POPULATION DATA

POPULATION					
	Number			Number	Number
Total population	1,545,387				
Square miles (land)	7,207.37				
Population per square mile	214.42			217.18	79.56
GENDER					
	Number	Pct		Pct	Pct
Male	769,384	49.8		49.8	49.1
Female	776,003	50.2		50.2	50.9
AGE					
	Number	Pct		Pct	Pct
15 or younger	394,983	25.6		23.0	21.4
16-24	216,099	14.0		14.3	13.9
25-44	446,393	28.9		31.6	30.2
45-64	291,948	18.9		20.5	22.0
65+	195,964	12.7		10.6	12.4
	Number			Number	Number
Average age (years)	34.58			34.60	36.22
RACE AND ETHNICITY					
	Number	Pct		Pct	Pct
White	1,013,478	65.6		59.5	75.1
Black or African American	96,421	6.2		6.7	12.3
American Indian and Alaska native	18,168	1.2		1.0	0.9
Asian	56,954	3.7		10.9	3.6
Native Hawaiian and other Pacific islander	3,902	0.3		0.3	0.1
Some other race	288,868	18.7		16.8	5.5
Two or more races	67,596	4.4		4.7	2.4
Hispanic or Latino	559,575	36.2		32.4	12.5
Sources: U.S. Census Bureau, 2000 Census					



Riverside County Population Density by Census Tract

Major roads
County boundaries
Water

Persons/square mile

- > 50000
- 45000 - 50000
- 40000 - 45000
- 35000 - 40000
- 30000 - 35000
- 25000 - 30000
- 20000 - 25000
- 15000 - 20000
- 10000 - 15000
- 5000 - 10000
- 1000 - 5000
- 1 - 1000

Major roads and hydrology from Thomas Brothers Maps, Inc., 2000, 2001.
Population density calculated from United States Census 2000 data, U.S. Census Bureau.

N

0 5 10 Miles

0 5 10 Kilometers

OES CALIFORNIA
Governor's Office of Emergency Services

ASSESSOR DATA

The tables on the next two pages identify the potential loss value of various types of buildings in the County. The values are listed by City and by County areas. The lists identify the number and values for commercial residential properties (apartment buildings), all other commercial properties, single-family residential properties, and multi-family non-commercial residential properties (condos, duplexes, etc.). These values are based on County Assessor figures as of June, 2004.

Area	COMMERCIAL RESIDENTIAL PROPERTIES	VALUE	COMMERCIAL PROPERTIES	VALUE	SINGLE FAMILY RESIDENCES	VALUE	MULTI-FAMILY RESIDENTS	VALUE
CITIES								
BANNING	72	$494,855	414	$111,710,921	7967	$695,307,068	153	$8,884,562
BEAUMONT	4	$704,823	269	$90,815,283	3990	$437,382,189	107	$7,384,355
BLYTHE	10	$9,097,538	410	$75,280,680	2612	$160,743,650	131	$7,086,395
CORONA	87	$215,346,783	1507	$1,518,470,059	28868	$5,012,150,029	230	$17,761,255
LAKE ELSINORE	11	$58,733,940	433	$184,884,173	8396	$1,124,573,802	110	$8,944,647
HEMET	94	$88,107,079	886	$387,520,271	13496	$1,219,371,562	357	$31,078,881
INDIO	45	$51,980,747	1115	$289,325,176	10115	$1,144,994,488	71	$4,286,142
PERRIS -	12	$339,960	392	$293,066,220	8355	$819,553,761	45	$3,323,933
RIVERSIDE	246	$617,257,114	3198	$2,126,378,982	56673	$6,405,816,523	1154	$103,782,788
SAN JACINTO	9	$824,149	367	$103,789,157	5931	$547,698,248	147	$11,371,896
PALM SPRINGS	149	$265,044,308	1201	$558,434,296	10006	$1,835,928,163	225	$26,372,799
COACHELLA	6	$8,726,114	224	$94,278,969	3703	$227,606,740	55	$2,674,892
TEMECULA	41	$235,895,780	816	$977,456,327	19725	$3,450,790,853	11	$2,577,699
DESERT HOT SPRINGS	1	$0	256	$84,539,483	4332	$348,559,319	411	$36,192,473
NORCO	19	$862,557	291	$192,813,621	6161	$892,473,856	46	$4,091,454
INDIAN WELLS	20	$213,498,632	26	$72,374,522	2189	$1,341,728,824	0	$0
RANCHO MIRAGE	64	$202,708,258	261	$485,841,702	4690	$1,787,556,402	13	$3,761,546
PALM DESERT	63	$317,148,847	823	$718,369,941	10203	$2,497,655,147	161	$22,245,500
CATHEDRAL	17	$28,972,623	534	$315,875,535	10227	$121,997,866	800	$100,363,395
LA QUINTA	37	$68,818,603	154	$201,151,085	11922	$2,873,013,985	21	$2,979,926
MORENO VALLEY	14	$69,692,461	565	$492,851,295	37545	$4,327,138,571	162	$14,820,939
CALIMESA	1	$0	99	$46,811,978	1618	$160,476,320	30	$3,037,627
CANYON LAKE	1	$0	57	$18,135,441	3960	$772,697,678	6	$1,797,368
MURRIETA -	23	$33,162,229	422	$422,025,919	20507	$3,923,964,947	7	$1,428,479
TOTALS	**1046**	**$2,487,417,400**	**14720**	**$9,862,201,036**	**293191**	**$42,129,179,991**	**4453**	**$426,248,951**

Area	COMMERCIAL RESIDENTIAL PROPERTIES	VALUE	COMMERCIAL PROPERTIES	VALUE	SINGLE FAMILY RESIDENCES	VALUE	MULTI-FAMILY RESIDENTS	VALUE
COUNTY AREAS								
ALVORD	19	$24,306	24	$13,800,148	2494	$388,561,662	1	$94,825
MENIFEE	22	$32,479,279	165	$115,178,132	16338	$1,873,386,524	10	$1,520,759
BANNING	28	$90,296,527	51	$41,756,495	808	$59,973,965	24	$1,739,092
BEAUMONT	2	$27,087	45	$17,344,339	1774	$178,786,017	35	$3,162,819
COACHELLA	36	$4,568,883	131	$40,207,195	1449	$89,957,380	21	$1,191,150
CORONA-NORCO	63	$8,554,270	172	$94,366,761	11008	$1,909,875,994	49	$7,321,386
PALM SPRINGS	23	$3,848,804	272	$138,530,940	4374	$447,049,061	42	$2,788,883
DESERT CENTER	116	$1,531,295	25	$8,561,462	75	$3,881,553	1	$32,343
ELSINORE	19	$30,915,346	199	$89,688,472	9923	$1,323,570,463	58	$4,710,122
HEMET	31	$1,198,750	387	$146,852,268	13602	$1,444,466,611	300	$32,381,261
DESERT SANDS	23	$10,814,397	140	$99,503,540	7816	$1,452,746,843	112	$15,717,556
MORENO	6	$1,541,380	4	$1,862,707	306	$39,534,959	1	$67,308
MURRIETA			4	$1,345,369	1249	$464,487,992	12	$6,163,371
NUVIEW	5	$10,489,747	22	$4,278,371	1500	$182,187,899	8	$1,135,968
PALO VERDE	13	$7,100,302	66	$10,425,817	454	$18,656,086	22	$883,493
PERRIS	1	$2,367	34	$3,831,470	1216	$145,320,734	22	$6,032,666
RIVERSIDE	1	$0	164	$49,510,701	6564	$1,195,314,971	40	$3,391,103
ROMOLAND	4	$145	97	$30,438,707	1949	$213,012,825	5	$489,105
SAN JACINTO	23	$1,113,502	25	$63,363,491	127	$13,150,585		
TEMECULA	101	$25,397,708	57	$66,548,430	8571	$1,906,579,895	9	$3,572,660
VAL VERDE	6	$2,391,601	68	$111,628,897	2161	$207,041,809	5	$235,285
JURUPA	63	$141,668,751	835	$1,013,220,516	17773	$1,775,801,656	186	$16,687,731
TOTALS	**605**	**$373,964,447**	**2987**	**$ 2,162,244,228**	**111531**	**$15,333,345,484**	**963**	**$ 109,318,886**

Critical Facilities and Values

Critical facilities are parts of infrastructure that must remain operational after an earthquake, or facilities that pose unacceptable risks to public safety if severely damaged. In Riverside County, critical facilities include schools, hospitals, fire and police stations, emergency operation centers, communication centers, dams, and industrial sites that use or store explosives, toxic materials or petroleum products. It is essential that critical facilities have no structural weaknesses that can lead to collapse.

Critical facilities may provide only limited services if lifelines are disrupted. The issue of seismic hazard mitigation for lifelines is very complex, given the diversity of lifeline facilities. The effects of strong ground motion applies to structures involved in lifeline service, such as the control tower in an airport, or the buildings that house computers and telephone circuits that are central to communication lifelines. Strong ground motion can also result in damage to freeway interchanges and bridges that are essential for successful transportation lifelines. When properly designed, manufactured and laid out, buried pipelines are generally not damaged by strong ground motions, but can be severely disrupted in areas of surface rupture, liquefaction, or landslides.

In December of 2001, the County of Riverside Office of Emergency Services, in cooperation with Riverside County GIS, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool, as well as quickly determine the potential impact of an event may on a community, special district, or specific site. During the creation of the Emergency Response Database, each local jurisdictions and agencies was asked to identify critical facilities of the following types within their jurisdiction:

- Airports
- Community Colleges and Universities
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire and Law Enforcement Facilities
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management and Water Treatment Sites
- Reservoirs / Water tanks

For each site, the jurisdiction identified at a minimum, the location of the site (address and latitude and longitude), the type of structure, the type of occupancy, and site contact information.

During the creation of this LHMP, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the project.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

The County has identified and categorized over 1600 critical facilities. The maps on the following pages depict the following critical facilities and infrastructure:

- Fire, Police, and Emergency Operations Center;
- Schools;
- Hospitals; and
- Rail facilities, available water, oil, and natural gas pipeline inventory.

Mitigation Goals and Strategies Relating to Critical Facilities

The General Plan and RCIP both identify the following strategies relating to critical facilities:

1. Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of certain critical facilities.

2. Find alternatives that improve site safety for the protection of critical facilities. Property acquisition for open space, change in building use or occupancy, or other appropriate measures can be employed to reduce risks posed by hazards.

3. Discourage development of critical facilities that are proposed in dam failure inundation areas, and apply hazardous materials safety guidelines within such zones.

4. Coordinate with the Public Utilities Commission (PUC) and/or utilize the Capital Improvement Program, to strengthen, relocate, or take other appropriate measures to safeguard high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits that:
   a. extend through areas of high liquefaction potential;
   b. cross active faults; or
   c. traverse earth cracks or landslides.

5. Strengthen the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to encourage structural and nonstructural design and construction. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated.
   a. Ensure that special development standards, designs, and construction practices reduce risk to tolerable levels for projects involving critical facilities, large-scale residential development, and major commercial or industrial development through conditional use permits and the subdivision review process. If appropriate, impact fees should be assessed to finance required actions.
   b. Require mitigation measures to reduce potential damage caused by ground failure for sites determined to have potential for liquefaction. Such measures shall apply to critical facilities, utilities, and large commercial and industrial projects as a condition of project approval.
   c. Require that planned lifeline utilities, as a condition of project approval, be designed, located, structurally upgraded, fit with safety shutoff valves, be designed for easy maintenance, and have redundant back up lines where unstable slopes, earth cracks, active faults, or areas of liquefaction cannot be avoided.

The County attempted to develop viable values for the different facilities and structures listed in the database. In attempting to determine the value of the facilities, County OES staff found that the values associated with many of the locations, that it was impossible to determine a workable dollar figure. As part of the 2005 Plan Maintenance Project, County OES staff will attempt to develop an equitable method of determining the true value of the locations.

County OES staff was able to develop a "standard value" for the building value of the following facilities:

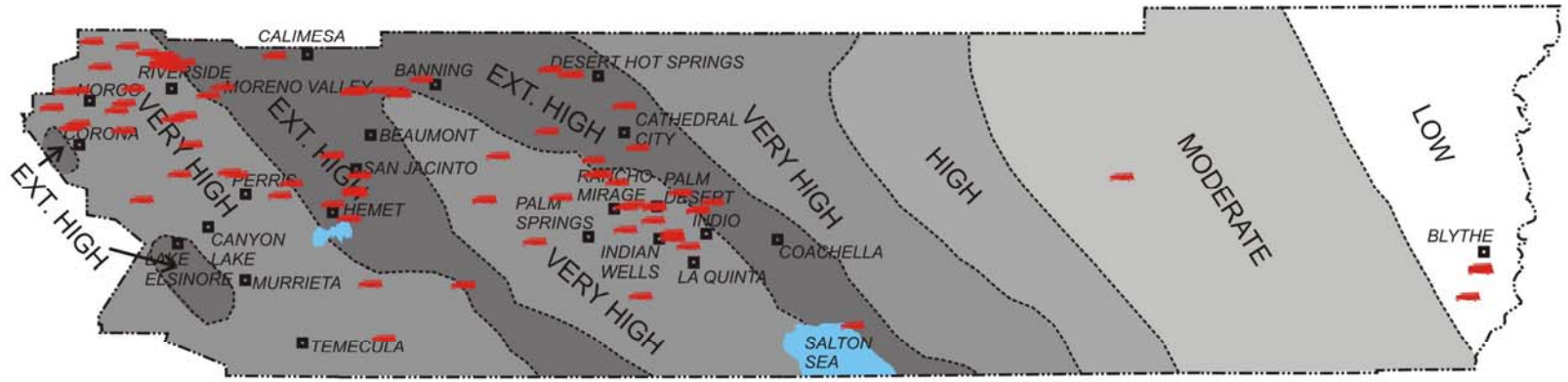
Facility	"Standard Value"
Fire Station	$ 1.9 million
Police/Sheriff Station	$ 7.6 million
Courthouse	$ 6 million
Medical Clinic	$ 6 million
Gymnasium/Community Center	$3.5 million

Loss Factors

The loss estimates provided in this Plan are based on the best data currently available and the methodologies applied result in an approximation of risk. These estimates may be used to understand relative risk from various hazards and potential losses. There are, however, uncertainties are inherent in any loss estimation methodology, arising in part from incomplete knowledge concerning the different hazards, as well as the use of approximations and simplifications that are necessary for a comprehensive analysis.

It is also important to understand that the quantitative vulnerability assessment results are limited to the exposure of people, buildings, critical facilities and infrastructure to hazards. It is currently beyond the scope of this initial Plan to analyze other types of hazard impacts (e.g., people injured or killed, shelter requirements, loss of facility/system function, and economic losses) for many of the listed hazards. The data necessary for this detailed level of analysis is not currently available.

In future updates of the plan, the County will attempt to conduct additional analysis of the impact of other hazards. .



Location of Emergency Response Facility
Fire, Police, or Emergency Operations Center
(based on HAZUS '99 inventory.)

General Ground Shaking Risk

- Low = <10% g
- Moderate = 10-20% g
- High = 20-30% g
- Very High = 30-40% g
- Ext. High = >40% g

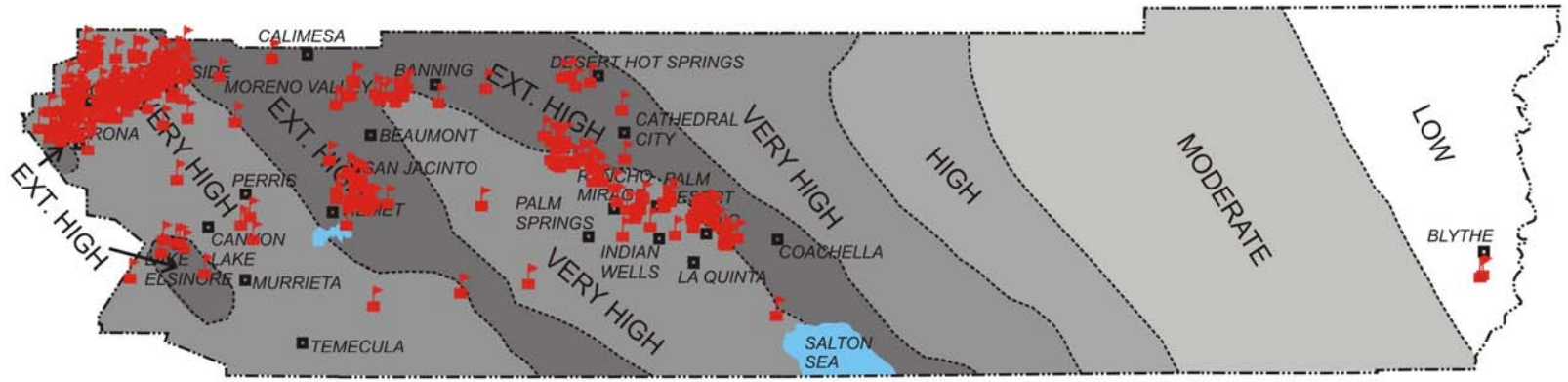
Mapping is based on U.S. Geological Survey, National Seismic Hazard Mapping peak horizontal accelerations at bedrock expressed as a percentage of gravity with a 10% probability of being exceeded in 50 years.

Source Information: Earth Consultants International

Figure S-13

0 20 MI.

INVENTORY OF EMERGENCY RESPONSE FACILITIES



Location of Schools
(based on HAZUS '99 inventory.)

General Ground Shaking Risk

- Low = <10% g
- Moderate = 10-20% g
- High = 20-30% g
- Very High = 30-40% g
- Ext. High = >40% g

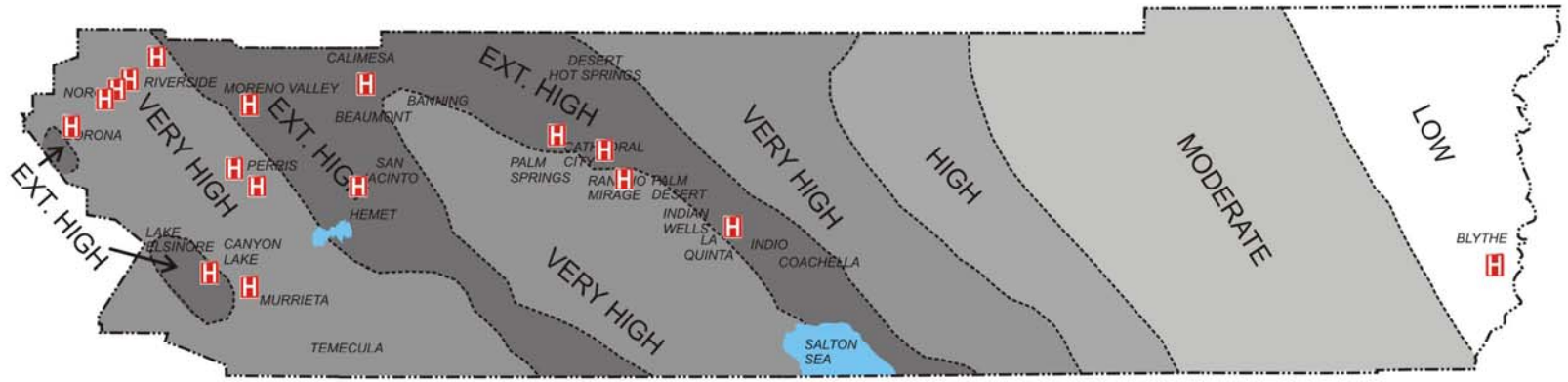
Mapping is based on U.S. Geological Survey, National Seismic Hazard Mapping peak horizontal accelerations at bedrock expressed as a percentage of gravity with a 10% probability of being exceeded in 50 years.

Source Information: Earth Consultants International

Figure S-14

0 20 MI.

INVENTORY OF SCHOOL LOCATIONS



Hospital Location

General Ground Shaking Risk

- Low = <10% g
- Moderate = 10-20% g
- High = 20-30% g
- Very High = 30-40% g
- Ext. High = >40% g

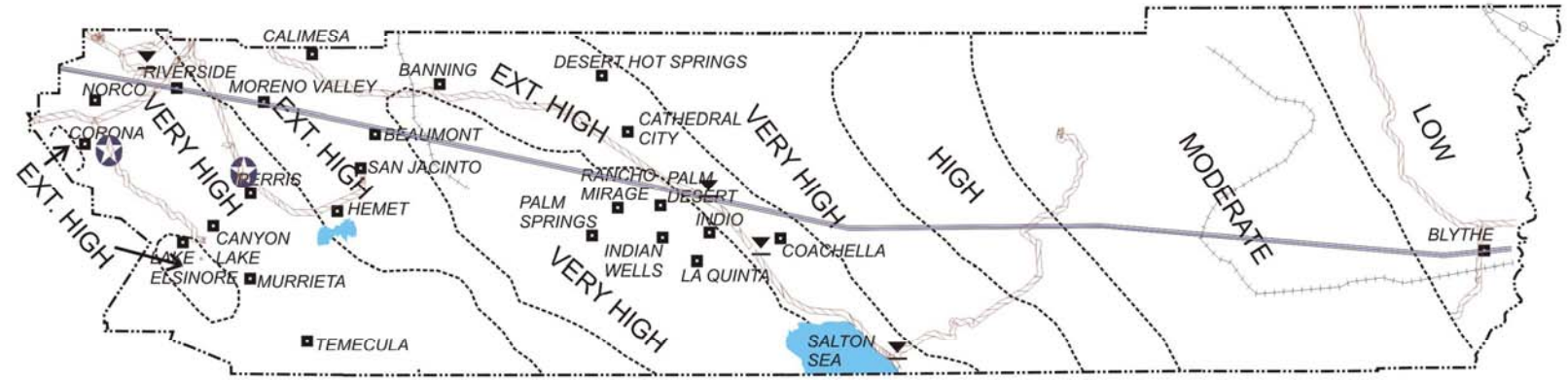
Mapping is based on U.S. Geological Survey, National Seismic Hazard Mapping peak horizontal accelerations at bedrock expressed as a percentage of gravity with a 10% probability of being exceeded in 50 years.

Source Information: Earth Consultants International

Figure S-12

0 20 MI.

INVENTORY OF HOSPITAL LOCATIONS



Potable water pipeline

Oil pipeline

Natural gas pipeline

Railroad track

Rail station

Railroad bridge

General Ground Shaking Risk
Low = <10% g
Moderate = 10-20% g
High = 20-30% g
Very High = 30-40% g
Ext. High = >40% g

Mapping is based on U.S. Geological Survey, National Seismic Hazard Mapping peak horizontal accelerations at bedrock expressed as a percentage of gravity with a 10% probability of being exceeded in 50 years.

Source Information: Earth Consultants International

Figure S-21

0 20 MI.

RAIL FACILITIES, AVAILABLE WATER, OIL AND NATURAL GAS PIPELINE INVENTORY DATA

4. Hazards Facing Riverside County

List of Risk Assessment Requirements

Element	Requirement	Riverside Operational Area LHMP Response
Identifying Hazards – A	Description of the Types of Natural Hazards Affecting Riverside County	See following table for page numbers by hazard
Profiling Hazard Events – A	Location of Hazards Identified	See following table for page numbers by hazard
Profiling Hazard Events – B	Extent of Hazards Identified	See following table for page numbers by hazard
Profiling Hazard Events – C	Information on Previous Occurrences	See following table for page numbers by hazard
Profiling Hazard Events – D	Probability of Future Events	See following table for page numbers by hazard
Assessing Vulnerability: Overview – A	Overall Summary Description of Riverside County's Vulnerability	See following table for page numbers by hazard
Assessing Vulnerability: Overview – B	Impact of Each Hazard on Riverside County	See following table for page numbers by hazard
Assessing Vulnerability: Identifying Structures – A	Description of Vulnerability in Terms of Types and Numbers of Existing Buildings, Infrastructure, and Critical Facilities Located in Identified Hazard Areas	See following table for page numbers by hazard
Assessing Vulnerability: Identifying Structures – B	Description of Vulnerability in Terms of Types and Numbers of Future Buildings, Infrastructure, and Critical Facilities Located in Identified Hazard Areas	See following table for page numbers by hazard
Assessing Vulnerability: Estimating Potential Losses - A	Description of Vulnerability in Terms of an Estimate of Potential Dollar Losses to Existing Buildings, Infrastructure, and Critical Facilities Located in Identified Hazard Areas	See following table for page numbers by hazard
Assessing Vulnerability: Estimating Potential Losses - B	Description of Vulnerability in Terms of an Estimate of Potential Dollar Losses to Future Buildings, Infrastructure, and Critical Facilities Located in Identified Hazard Areas	HAZUS DATA Part I pages 79 -113 See following table for page numbers by hazard
Assessing Vulnerability: Analyzing Development Trends – A	Description of Land Uses and Development Trends and Critical Facilities	County - Part I Pages 24 – 27 Jurisdictions - Part II Land Use Questionnaire for each Jurisdiction
Multi-Jurisdictional Risk Assessment	Where Needed to Reflect Unique or Varied Risks, Risk Assessment Included for Each Participating Jurisdiction	Part II, Jurisdictional Detail

Risk Assessment Requirements -Reference Table
This table represents information for the County and the Submitting Jurisdictions
Individual HAZUS data for each City is included in section of Part II

Hazard	Riverside County and Listed Affected Jurisdictions From Part II	Hazard Definition, Extent, History, Future Event Probability	Risk Assessment: General Impact on People, Structures, and Infrastructure	Mitigation Strategy and Mitigation Programs
Wildfire	40	41-52	47-52	52-53
Flooding	54-55	55-62	62-65	65-67
Earthquakes	68-69	69-75	75-79 HAZUS Analysis 79-113	113-115
Extreme Weather	116-117	117-130 Listed by Weather Type	131 - 133	133 - 139
Landslides	140	141 - 145	145 - 147	147 - 148
-Insect Infestation	149	150 - 151	152	152
Dam failure	153	154 - 158	159 - 160	160
Hazardous materials (hazmat) incidents	161 - 162	162 - 164	164 - 166	167
Transportation emergencies	168	169 - 175 Listed by Type	175	175
Pipeline/Aqueduct incidents	176	177	178	178
Blackout	179	180 - 181	181	181
Toxic pollution	182	183 - 185	185 - 187	185 - 189
Nuclear incidents	189	190	190	190
Civil unrest	192	192 - 193	193	193
Jails and prisons incidents	194	194 - 195	195 - 196	196
Terrorism	197	197 - 200	200	200

Mitigation Strategy Requirements Cross-Reference Table

Element	Requirement	Riverside County LHMP Response
Local Hazard Mitigation Goals - A	Description of Mitigation Goals to Reduce or Avoid Long-Term Vulnerabilities to the Identified Hazards	Wildfire – pp. 28 – 40 Flooding pp. 41 – 53 Earthquake pp. 54 – 100 Landslides pp. 110-113 Hazardous Materials pp. 127-134
Identification and Analysis of Mitigation Actions - A	Identification and Analysis of a Comprehensive Range of Specific Mitigation Actions and Projects for Each Hazard	
Identification and Analysis of Mitigation Actions - B	Explain How Identified Actions and Projects Address Reducing the Effects of Hazards on New Buildings and Infrastructure	
Identification and Analysis of Mitigation Actions - C	Explain How Identified Actions and Projects Address Reducing the Effects of Hazards on Existing Buildings and Infrastructure	

Identification of Hazards

With its varying topography; mix of urban and rural areas; rapidly growing permanent, transient, and recreational populations, the Riverside OA is subject to potential negative impacts from a broad range of hazards and threats. There are three broad categories of hazards that threaten the OA, namely:

- Natural hazards
- Technological hazards
- Domestic security threats

In addition, because of the importance of agriculture to the economy of the Riverside OA, this LHMP assesses the impacts of each hazard type to agriculture specifically.

Natural hazards include:

- Wildfires
- Floods
- Earthquakes
- Extreme Weather
- Landslides
- Insect Infestation

Technological hazards include:

- Dam Failure
- Hazardous Materials (Hazmat) Incidents
- Transportation emergencies
  - Highway
  - Rail line
  - Airline/Airport
- Pipeline/Aqueduct Incidents
- Blackout
- Toxic Pollution
- Nuclear Incidents

Domestic security threats include:

- Civil unrest
- Jails and Prisons incidents
- Terrorism (CBRNE)
  - Chemical
  - Biological
  - Radiological
  - Nuclear
  - Explosive

The following table describes how and why the hazards listed above were identified by Riverside County in preparing its LHMP.

Hazard	How and Why Identified
Wildfire	History of events and the presence of a large amount of timber and brush areas in OA
Flooding	History of events and the presence of a large number of rivers and channels in the OA
Earthquakes	History of events and the presence of fault lines and geologic activity in the OA
Extreme Weather	History of events
Landslides	History of events
Insect Infestation	History of events and the current presence of insect infestation in the OA
Dam Failure	Vulnerability due presence of a relatively large number of dams
Hazardous Materials (Hazmat) Incidents	History of events and the presence of a large number of transportation corridors and Hazardous Materials Facilities in the OA
Highway emergencies	History of events and the presence of a large number of transportation corridors
Rail line emergencies	History of events and the presence of a large number of transportation corridors
Airline / airport emergencies	History of events and the presence of a large number of airports and flight paths within the OA
Pipeline/Aqueduct incidents	History of events and the presence of a large number of various pipelines within the OA
Blackout	History of events
Toxic pollution	Vulnerability due to presence of pollution in air, water, and soil
Nuclear Incidents	Vulnerability due to transportation routes and relative proximity of San Onofre Nuclear Generating Station (SONGS)
Civil Unrest	Vulnerability due to number of public gathering venues
Jails and Prisons Incidents	Vulnerability due to presence of State and County correctional facilities
Terrorism	Heightened sense of awareness since September 2001

Land Use and Development Trends

Existing land use within Riverside County is a mosaic of varying types of uses, ownership, character, and intensity. Uses include:

- Rural residential
- Single family detached
- Single family attached
- High-density residential (apartments)
- Mobile homes
- Recreational open space
- Other open space
- Heavy industrial
- Warehouse
- Vacant
- Agriculture
- Water
- Utilities
- Public facilities
- Schools
- Retail / Office
- Tourist / Commercial recreation
- Light industrial / Business park
- Mineral extraction

Development Trends

While the population of Riverside County is expected to continue growing, there are Land Use policies and elements within the Riverside County General Plan to help assure orderly development.

In addition, the Local Agency Formation Commission (LAFCO) of Riverside County is tasked with the mission to provide an orderly pattern of growth that reconciles the varied needs of the County. One of the fundamental principles of LAFCO is to ensure the establishment of an appropriate and logical municipal government structure for the distribution of efficient ad appropriate public services. LAFCO Land Use Objectives include:

- the discouragement of urban sprawl;
- the preservation of the physical and economic integrity of agricultural lands;
- the preservation of open space within urban development patterns;
- the orderly formation and development of agencies by shaping local agency boundaries;
- the minimization of agencies providing services to a given area; and
- the utilization of Spheres of Influence to guide future development of agency boundaries.

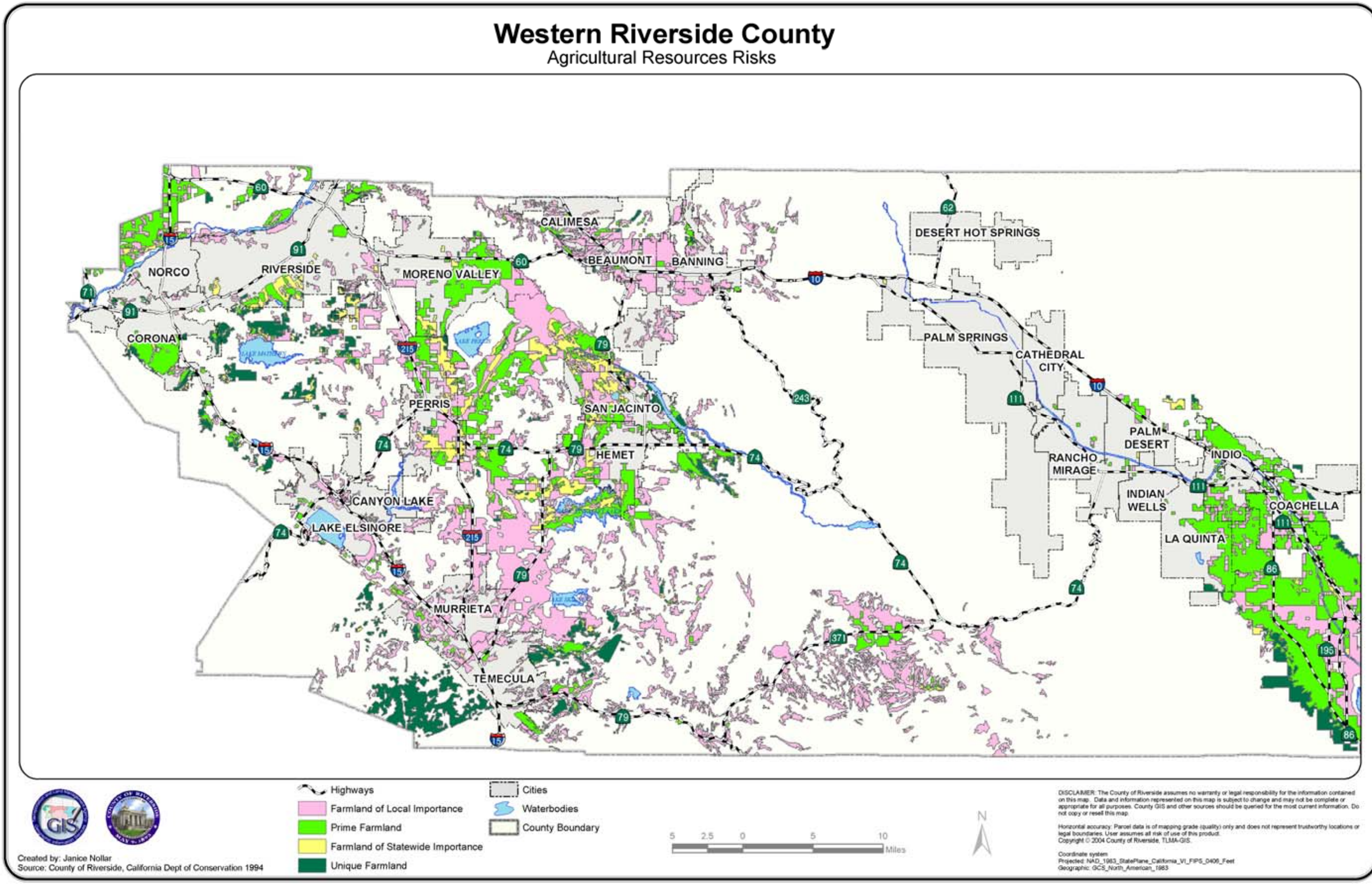
Agriculture

In terms of dollar value, agriculture is the largest industry in Riverside County, providing employment for a significant portion of the County's population. Agriculture faces continual pressure from urbanization, foreign competition, and rising production costs. Despite these pressures, those areas that remain in agricultural production represent a significant open space and economic resource for the County.

The Riverside County General Plan defines productive agricultural lands as those which are "involved in long-term, substantial investment to agricultural use, and which has a long-term economic viability for agricultural use." Some of the factors affecting the economic viability of these areas include weather, water prices, crop selection, management techniques, commodity prices, new technology, and proximity to developed lands.

Because of the importance of agriculture to the Riverside OA, effects on agriculture are assessed for each hazard type identified in this LHMP. In addition, a separate assessment of hazards and mitigation stratifies was conducted by the County and the results are included in a separate section of Part I.

The maps on the following two pages depict agricultural resources in Western Riverside County and Eastern Riverside County, respectively.



Western Riverside County
Agricultural Resources Risks
NORCO
RIVERSIDE
CORONA
MORENO VALLEY
CALIMESA
BEAUMONT
BANNING
DESERT HOT SPRINGS
PALM SPRINGS
CATHEDRAL CITY
PERRIS
SAN JACINTO
HEMET
RANCHO MIRAGE
PALM DESERT
INDIO
INDIAN WELLS
COACHELLA
LA QUINTA
CANYON LAKE
LAKE ELSINORE
MURRIETA
TEMECULA
Highways
Farmland of Local Importance
Prime Farmland
Farmland of Statewide Importance
Unique Farmland
Cities
Waterbodies
County Boundary
5 2.5 0 5 10
Miles
N
Created by: Janice Nollar
Source: County of Riverside, California Dept of Conservation 1994
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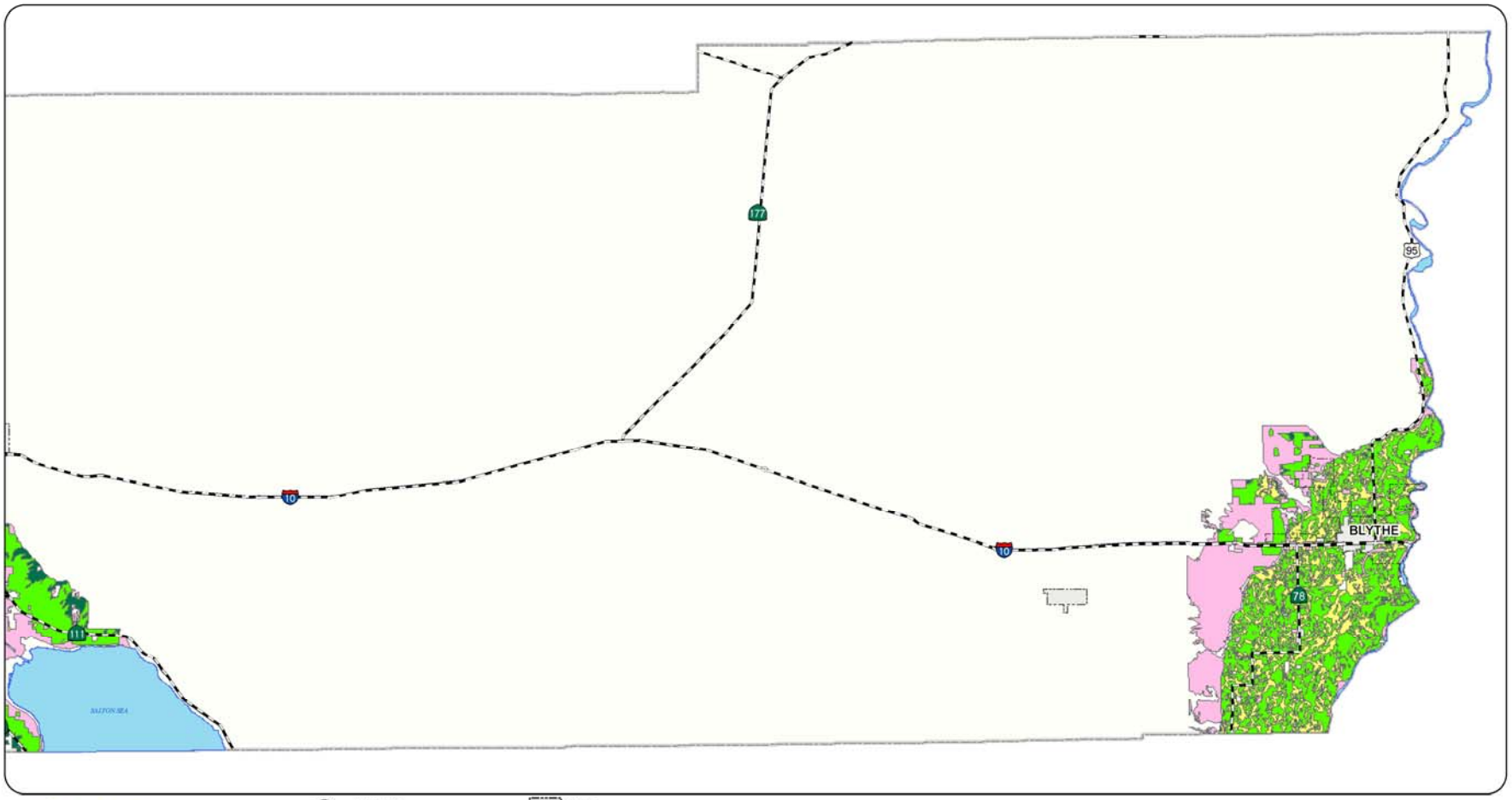
Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983
Copyright County of Riverside TLMA-GISThis map (U:\GISTransfer\Nollar\special_projects\eoc\hazard_maps\ag_resources_map2_west.mxd)was produced on 8/18/2004 at 10:24:03 AM

Eastern Riverside County

Agricultural Resources Risks



Highways
Farmland of Local Importance
Prime Farmland
Farmland of Statewide Importance
Unique Farmland
Cities
Waterbodies
County Boundary

5 2.5 0 5 10 Miles

N

Created by: Janice Nollar
Source: County of Riverside, California Dept of Conservation 1994

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Hazard: Wildfire

County Severity Rating: 3	County Probability Rating: 4

OA Jurisdictions Affected by Wildfire

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Elsinore Valley Municipal Water District
- Home Gardens County Water District
- Idyllwild Fire Protection District
- Lake Elsinore Unified School District
- Lee Lake Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

A wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property. Wildfires can occur in undeveloped areas and spread to urban areas where structures and other human development are more concentrated.

While some wildfires start by natural causes, humans cause four out of every five wildfires. Wildfires started by humans are usually the result of debris burns, arson, or carelessness. As a natural hazard, a wildfire is often the direct result of a lightning strike that may destroy personal property and public land areas, especially on state and national forest lands. The predominate dangers from wildfires are:

1. the destruction of timber, property, wildlife; and
2. injury or loss of life to people living in the affected area or using the area for recreational facilities.

History

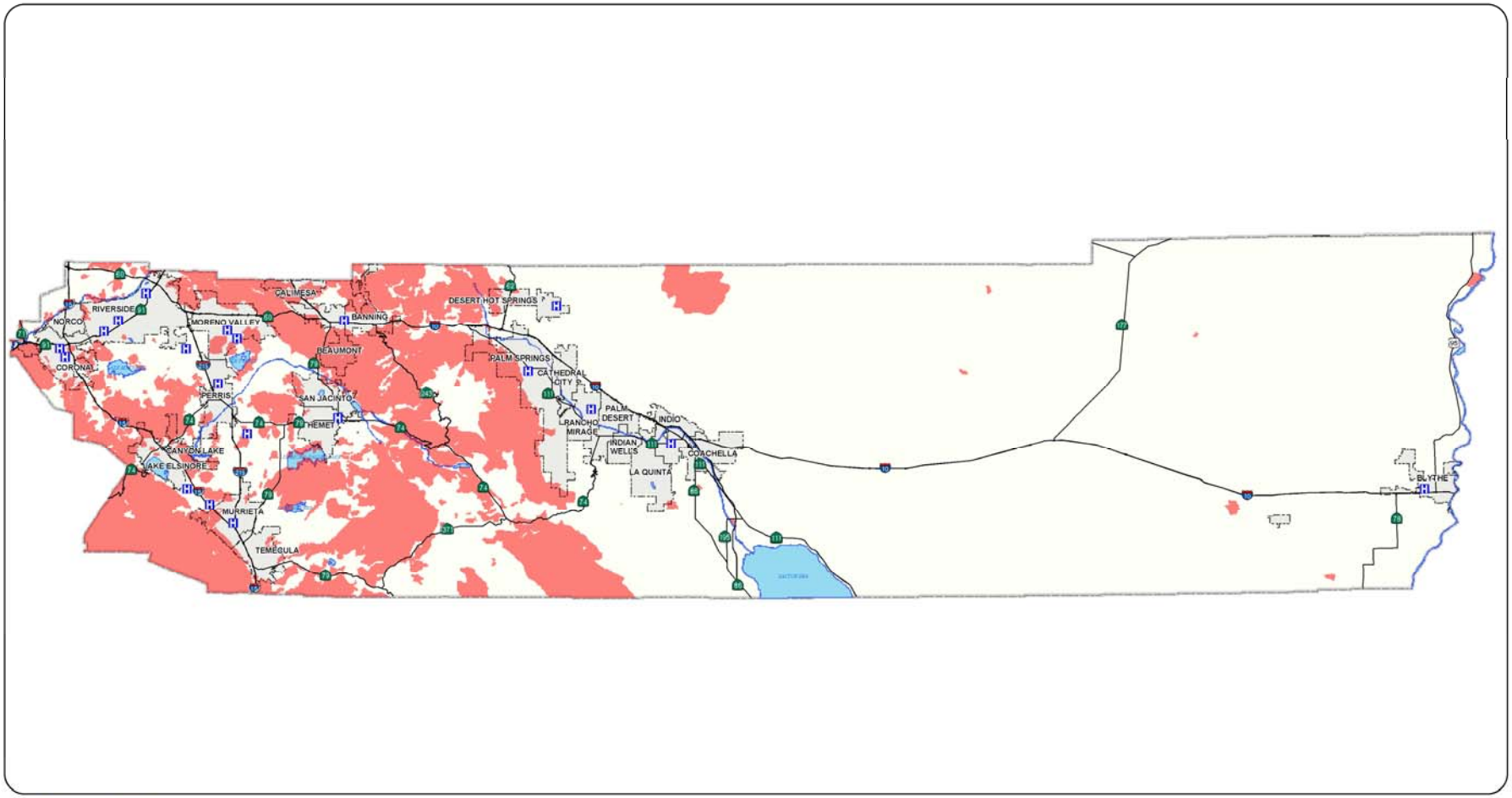
There is a long history of wildfires in Riverside County, as reflected in the following map of wildfires from 1900 – 2002:

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Riverside County	10/28/1993	Federal	52,000 acres	$5,000,000	6	129	Variety of fires. 129 structures destroyed 6 injuries.	Co. Rpts.
Juniper/Weirick	8/31/1998	Federal - SBA	11,000 acres	$4,450,000	2	90	Multiple fires from lightening. 90 structures burned, 98 vehicles. 150 persons sheltered.	Co. Rpts.
Banning - Hwy 243	8/28/1999	None	Not Avail.	Not Avail.	1	0	Wildfire	Co. Rpts & NCDC
Twin Pines	8/29/1999	None	2,500 acres	$227,000	4	5	Part of larger fire in both San Bernardino and Riverside Counties.	Co. Rpts.
Corona	9/30/1999	None	250 acres	$500,000	Not Avail.	6	Tin Mine Canyon with erratic winds	NCDC
Lakeland Village	11/23/1999	None	50 acres	Not Avail.	Not Avail.	Not Avail.	Wildfire	Co. Rpts.
Temecula	7/29/2000	None	11,734 acres	Not Avail.	41	0	Wildfire	NCDC
Eastern Riverside County	8/27/2000	None	160 acres	Not Avail.	0	0	Thunderstorm caused wildfire. .	Co. Rpts.
Black Ranch	9/10/2000	None	200 acres	Not Avail.	0	0	Wildfire.	Co. Rpts.
Murrieta	1/3/2001	None	Not Avail.	Not Avail.	1	2	Brush fire driven by Santa Ana wilds	NCDC
Hemet	6/17/2001	None	200 acres	Not Avail.	6	0	Arsonist-caused brush fire.	NCDC
Moreno Valley	6/23/2001	None	1,500 acres	$50,000	2	0	Brush fire	NCDC
Corona	6/23/2001	None	10 acres	$150,000	0	1	Brush fire	NCDC
Lake Elsinore	6/29/2001	None	75 acres	Not Avail.	1	0	Brush fire	Co. Rpts.
Banning	7/11/2001	None	548 acres	$150,000	2	1	Brush fire	NCDC
Reche Canyon	7/23/2001	None	Not Avail.	Not Avail.	0	2	Brush fire. 2 buildings burned.	Co. Rpts.
Pedley	7/25/2001	None	35 acres	Not Avail.	0	0	Brush fire	Co. Rpts.
Bautista Canyon Road	10/13/2001	None	160 Acres	Not Avail.	0	0	Wildfire.	Co. Rpts.
Riverside County	4/9/2002	None	255 acres	$50,000	1	0	Wildfire.	NCDC
Coachella	5/9/2002	None	30 acres	Not Avail.	0	0	Wildfire.	Co. Rpts.
Arlington	5/13/2002	None	3 acres	$400,000	2	0	Wildfire.	NCDC
Hemet	6/4/2002	None	10 acres	Not Avail.	1	0	Brush fire	NCDC
Cabazon Reservation Area	6/18/2002	None	600 acres	$300,000	7	0	Wildfire.	Co. Rpts & NCDC
Temecula	7/17/2002	None	10 acres	Not Avail.	1	0	Brush fire	NCDC

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Thermal	8/9/2002	None	5 acre	None	0	0	Wildfire. 11 mobile homes evacuated.	Co. Rpts.
Calimesa, Cherry Valley, Yucaipa	8/11/2002	None	550 acres	Not Avail.	10	1	Wildfire. 150 residences self-evacuated. 1 damaged structure.	Co. Rpts & NCDC
Norco	11/26/2002	None	10 acres	$30,000	1	0	Wildfire	NCDC
Mira Loma, Jurupa, Rubidoux, Pedley, Sky Country	1/6-7/2003	None	Not Avail.	$325,000	1	3	Fire caused by downed power lines Wildfire also in the Riverbottom 3 homes damaged.	Co. Rpts & NCDC
Sedco Hills	7/3/2003	None	220 Acres	$750,000	5	Not Avail.	Wildfire	Co. Rpts & NCDC
Rancho California, Sage	7/4/2003	None	1,621 Acres	Not Avail.	4	0	50 homes evacuated.	Co. Rpts & NCDC
Soboba Reservation	7/27/2003	None	4,300 acres	$400,000	2	22	Property lost includes: 1 home, 1 outbuilding, 185 citrus trees, 20 miscellaneous. buildings.	Co. Rpts & NCDC
Moreno Valley	8/18/2003	None	1,600 acres	$1,250,000	3	0	Not Avail.	Co. Rpts & NCDC
Lake Mathews	8/23/2003	None	199 acres	Not Avail.	0	0	Wildfire	Co. Rpts.
Hwy 79 north of Vail Lake	8/24/2003	None	10 acres	Not Avail.	0	0	Wildfire caused by lightening.	Co. Rpts.
Banning, Porter Road	9/28/2003	None	12 acres	Not Avail.	0	0	Wildfire	Co. Rpts.
Riverside County	10/20/2003	Federal	12,000 acres	$8,500,000	7	91	Wildfire	NCDC
Pleasure Fire	4/25/2004	None	2,334 acres	$1,900,000	0	9	Wildfire	NCDC
Riverside County	5/2/2004	Local	28,000 acres	$8,100,000	18	66	Wildfire	NCDC
Verbenia Fire	7/11/2004	None	3,833 acres	Not Avail.	7	0	Wildfire	NCDC
Lakeview Fire	7/13/2004	None	350 acres	$25,000	3	0	Wildfire	NCDC
Tulip Fire	7/14/2004	None	151 acres	Not Avail.	3	0	Wildfire	NCDC
Melton Fire	7/17/2004	None	3,667 acres	$163,500	1	0	Wildfire	NCDC
Citrus Fire	7/22/2004	None	765 acres	Not Avail.	3	0	Wildfire	NCDC
Verbena	7/25/2004	None	1,200 acres	Not Avail.	0	0	Wildfire	NCDC
Pleasure Fire	9/2/2004	None	250 acres	$35,000	0	2	Wildfire	NCDC

Riverside County

Historical Wildland Fires (1900-2002)



Created by: Janice Nollar
Source: County of Riverside, CDF 2003

Hospitals
Highways
Historical Fires
Cities
Waterbodies
County Boundary

10 5 0 10 20 Miles

N

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Coordinate system
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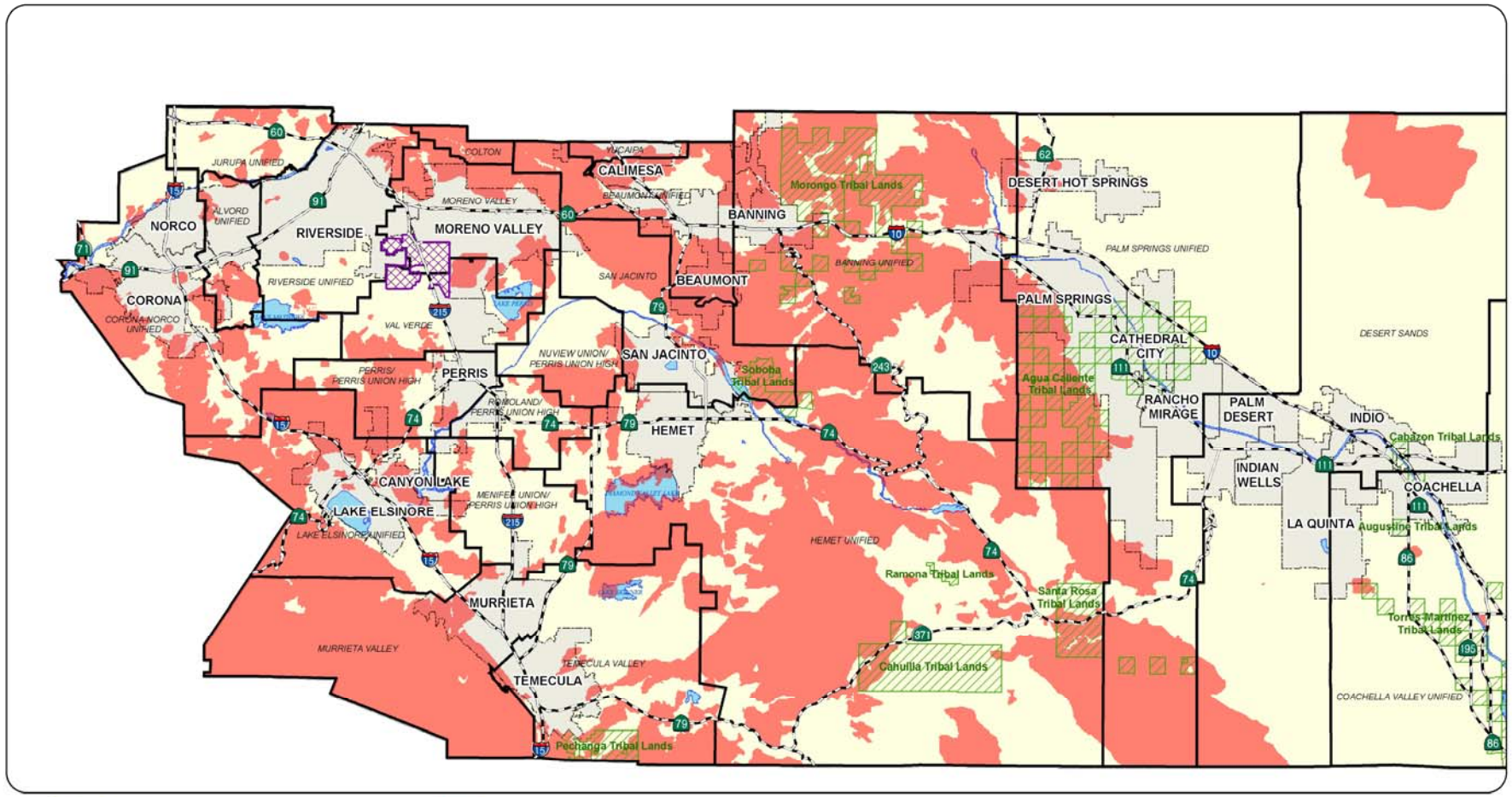
Geographic: GCS_North_American_1983

Interestingly, the preceding historical wildfire map points out the distinct bi-lateral character of Riverside County. The western end of the County is more urban, densely populated, and covered with vegetation that is susceptible to wildfires. The eastern end of the County is primarily desert, with far less population and far less vegetation than the western end of the County.

The following map provides closer detail of the western end of Riverside County, where the vast majority of the historical wildfires have occurred.

Western Riverside County

Historical Wildland Fires (1900-2002)



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Highways
School District Boundaries
March Air Reserve Base
Tribal Lands
Historical Fires
Cities
Waterbodies
County Boundary

5 2.5 0 5 10 Miles

N

Coordinate system:
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Risk Assessment

Fire is a continuous threat in Southern California, particularly in Riverside County. The major areas of concern are the wildland and urban interfaces. Literally hundreds of homes now border major forests and brush areas. With thousands of people living near and visiting wildland areas, the probability of human-caused fires is growing. Although occurring with less frequency, the threat of fire from lightning strikes also exists.

Generally, the dry seasons are a major time for an increase in the number of forest fires and structure fires. The standard "shake roof" is a particular hazard, as is the poor control of flammable growth around structures. During times of the strong "Santa Ana" winds, fire danger is particularly high.

The increase of industrial complexes, transportation networks, and utility networks pose a threat that is not seasonal, but rather year-round. Associated with industry and transportation networks is the ever present problem of hazardous materials. Although not necessarily a wildland threat, a fire occurring in an urban area involving hazardous materials could have serious consequences.

Due to the undeveloped and rugged terrain of Riverside County, highly flammable brush-covered land, and long, dry summers, many portions of the County have experienced numerous wildland fires in the recent past.

- **Effects on people and structures.** As the table of selected historic wildfire incidents from 1993 – 2004 on the preceding page shows, the effects on people and housing can be significant. Many of the fires shown in the table resulted in the evacuation of homes. In the 1998 Juniper/Weirick fire, 90 structures were destroyed and 150 persons were sheltered. In the 1993 Riverside County fire, 129 structures were destroyed.

- **Effects on infrastructure.** As shown in the table of historic incidents, wildfires often result in power outages. These outages can be extensive in geographic area and numbers of persons affected.

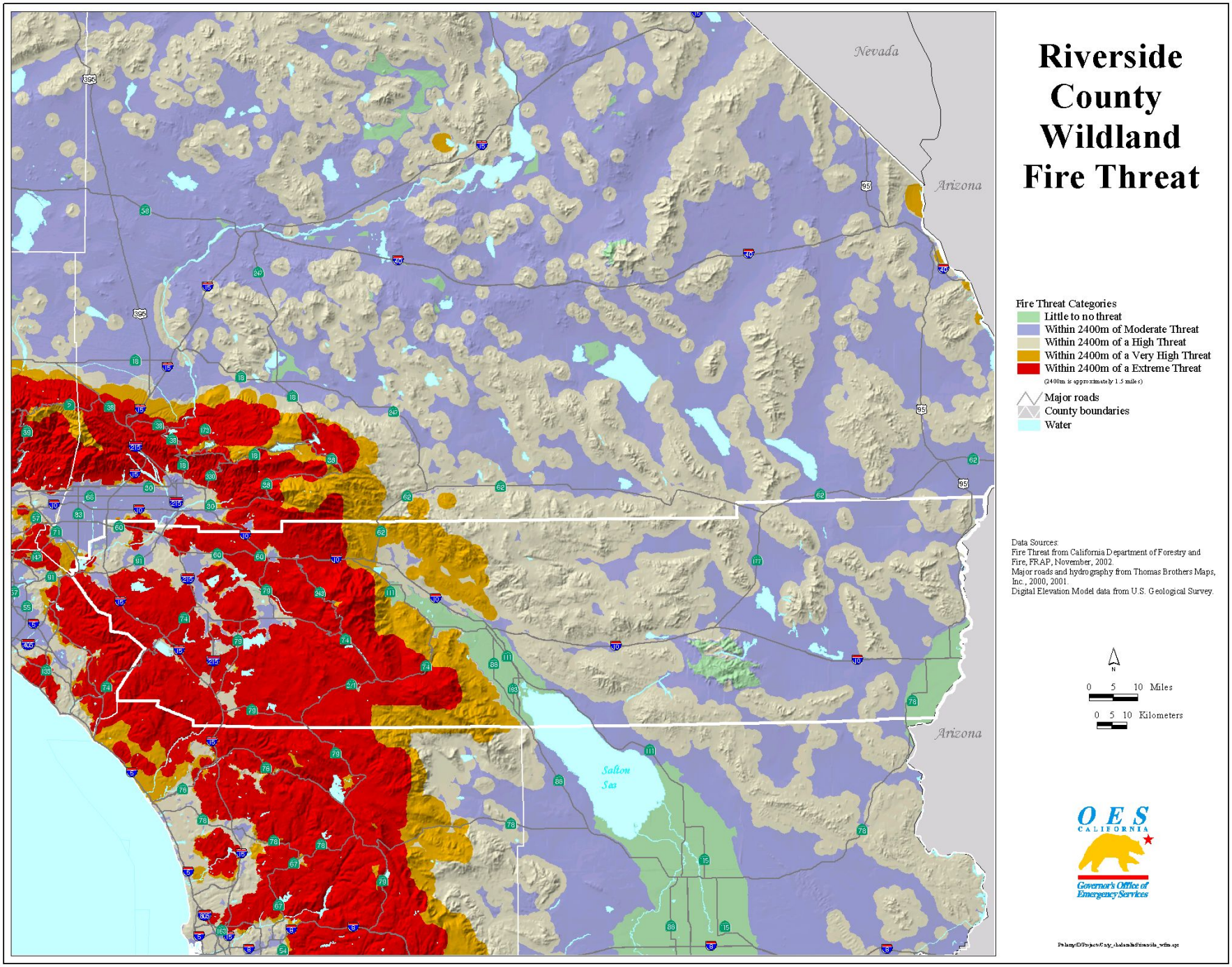
- **Effects on Critical Facilities.** There approximately 15 fire stations that are in potential direct risk from wildland fires. There are additional critical locations within the Idyllwild area that are at a high danger risk from wildland fires. In many cases (i.e. fire stations and schools) these facilities can not be relocated into a safer area.

- **Effects on agriculture.** Effects on agriculture can be devastating. In addition to the obvious impacts on animals and crops, wildfire can have deleterious effects on soil and water that will affect agriculture for an extended period of time.

Risk Assessment Conclusion.

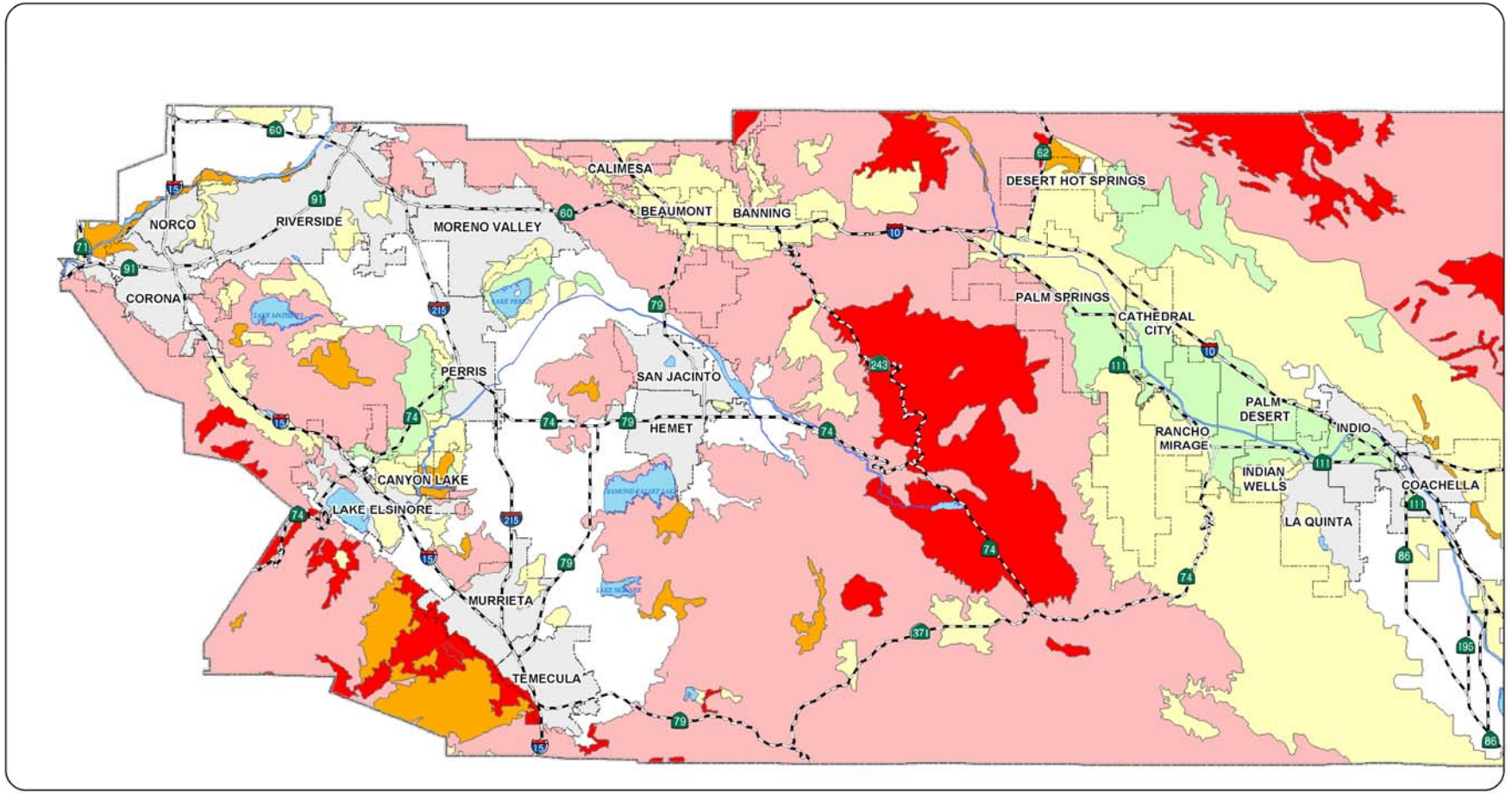
The western end of Riverside County is far more susceptible to wildfire than the eastern end of the County. As the recent fires in the summer and fall of 2003 showed, the effects can be far-reaching in terms of the number of acres involved, the toll on human life, and the economic consequences. Wildfire will continue to be a high risk hazard for Riverside County.

The maps on the following two pages depict wildfire susceptibility risks in Western Riverside County and Eastern Riverside County, respectively.


Riverside County Wildland Fire Threat
Nevada
Arizona
Arizona
Salton Sea
Fire Threat Categories
Little to no threat
Within 2400m of Moderate Threat
Within 2400m of a High Threat
Within 2400m of a Very High Threat
Within 2400m of a Extreme Threat
(2400m is approximate by 1.5 miles)
Major roads
County boundaries
Water
Data Sources:
Fire Threat from California Department of Forestry and Fire, FRAP, November, 2002.
Major roads and hydrography from Thomas Brothers Maps, Inc., 2000, 2001.
Digital Elevation Model data from U.S. Geological Survey.
N
0 5 10 Miles
0 5 10 Kilometers
OES CALIFORNIA
Governor's Office of Emergency Services

Western Riverside County

Wildfire Susceptibility Risks



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Source: County of Riverside, Earth Consultants International

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Coordinate system
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Geographic: GCS_North_American_1983

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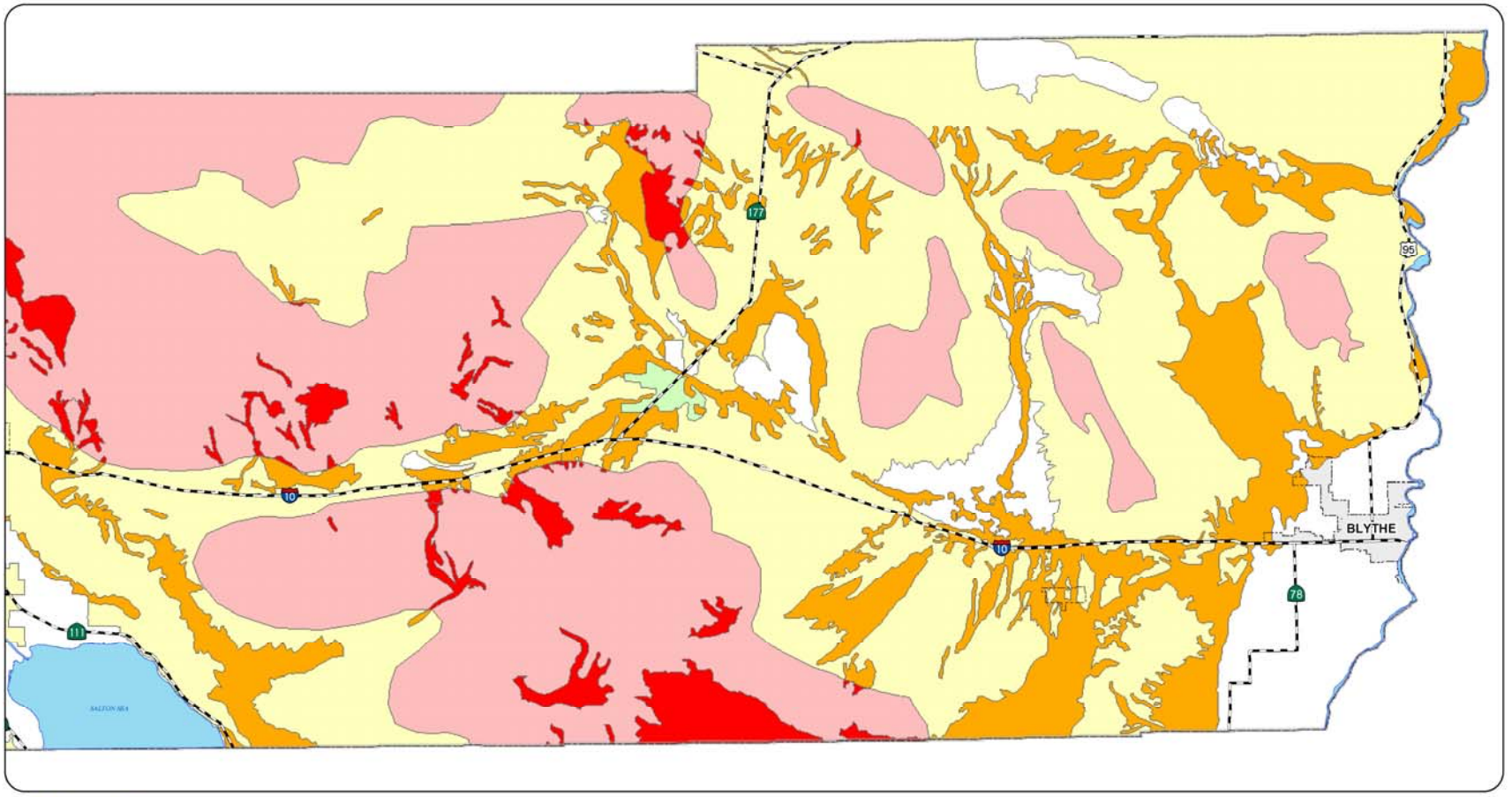
Eastern Riverside County

Wildfire Susceptibility Risks



Highways
Cities
Waterbodies
County Boundary

Wildfire Zones

Very High
High
Moderate
Low
Very Low
None

5 2.5 0 5 10 Miles

N

Created by: Janice Nollar
Source: County of Riverside, Earth Consultants International

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

This map (U:\GIS\Transfer\Nollar\special_projects\eqcohazard_maps\wildfire_map2_west.mxd)was produced on 8/16/2004 at 10:24:39 AM

Relationship to Other Hazards – Cascading Effects

Flooding and erosion. Major wildfires can completely destroy ground cover. If heavy rains follow a major fire, flash floods, heavy erosion, landslides and mudflows can occur. These cascading effects can have ruinous impacts on people, structures, infrastructure, and agriculture.

Hazard Mitigation Goals and Strategies

To achieve fire protection for all residents of the County, the County Department of Building and Safety and the County Fire Department enforce standards as they review building plans and conduct building inspections. Additional programs implemented to ensure compliance with established fire standards include:

- the maintenance of a Countywide Information Map, showing area of high fire hazard areas;
- the provision of uniform fire improvement standards for various land uses; and
- the continued updating of the Fire Protection Master Plan.

The Riverside County General Plan, adopted in October 2003, includes the following recommendations:

1. Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:
2. All proposed construction shall meet minimum standards for fire safety as defined in the County Building or Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency based on building type, design, occupancy, and use.
3. In addition to the standards and guidelines of the Uniform Building Code and Uniform Fire Code fire safety provisions, continue additional standards for high-risk, high occupancy, dependent, and essential facilities where appropriate under the Riverside County Fire Protection Ordinance. These shall include assurance that structural and nonstructural architectural elements of the building will not:
    a. impede emergency egress for fire safety staffing/personnel, equipment, and apparatus; nor
    b. hinder evacuation from fire, including potential blockage of stairways or fire doors.
    c. Proposed development in Hazardous Fire areas shall provide secondary public access, unless determined otherwise by the County Fire Chief.
    d. Proposed development in Hazardous Fire areas shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the County Fire Chief.
4. Reduce fire threat and strengthen fire-fighting capability so that the County could successfully respond to multiple fires.

5. Utilize ongoing brush clearance fire inspections to educate homeowners on fire prevention tips.

6. Conduct and implement long-range fire safety planning, including stringent building, fire, subdivision, and municipal code standards, improved infrastructure, and improved mutual aid agreements with the private and public sector.
7. Ensure coordination between the Fire Department and the Transportation Land Management Agency, Environmental Heath Department and private and public water purveyors to improve firefighting infrastructure, during implementation of the County's capital improvement programs, by obtaining:
   a. replacement and/or relocation of old cast-iron pipelines and inadequate water mains when street improvements are planned;
   b. assessment of impact fees as a condition of development; and
   c. redundant emergency distribution pipelines in areas of potential ground failure or where determined to be necessary.
5. Develop a program to utilize existing reservoirs, tanks, and water wells in the County for emergency fire suppression water sources.
6. Periodically review inter-jurisdictional fire response agreements, and improve fire fighting resources as recommended in the County Fire Protection Master Plan to keep pace with development, including construction of additional high-rises, mid-rise business parks, increasing numbers of facilities housing immobile populations, and the risk posed by multiple ignitions, to ensure that:
7. Fire reporting and response times do not exceed those listed in the County Fire Protection Master Plan identified for each of the development densities described;
8. Fire flow requirements (water for fire protection) are consistent with Insurance Service Office (ISO) recommendations; and
9. The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for the intensity of development desired.
10. Continue County Fire Department collaboration with the Transportation Land Management Agency (TLMA) to update development guidelines for the urban/wildland interface areas. These guidelines should include increasing the development area to at least 30 feet past the usual boundary.
11. Continue to utilize the Riverside County Fire Protection Master Plan as the base document to implement the goals and objectives of the Safety Element.

Hazard: Flooding

County Severity Rating : 3	County Probability Rating: 3

OA Jurisdictions Affected by Flooding

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Elsinore Valley Municipal Water District
- Home Gardens County Water District
- Idyllwild Fire Protection District
- Idyllwild Water District
- Lake Elsinore Unified School District
- Lee Lake Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency

- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

A flood is defined as an overflowing of water onto an area of land that is normally dry. Floods generally occur from natural causes, usually weather-related, such as a sudden snowmelt, often in conjunction with a wet or rainy spring or with sudden and very heavy rainfalls. Floods can, however, result from human causes as a dam impoundment bursting. Dam break floods are usually associated with intense rainfall or prolonged flood conditions. In the Riverside County area, an earthquake can cause dam failure. The greatest threat to people and property is normally in areas immediately below the dam since flood discharges decrease as the flood wave moves downstream.

Floods are generally classed as either slow-rise or flash floods. Slow-rise floods may be preceded by a warning time lasting from hours to days, or possibly weeks. Evacuation and sandbagging for a slow rise flood may lessen flood-related damage. Conversely, flash floods are the most difficult for which to prepare due to the extremely short warning time, if there is any at all. Flash flood warnings usually require immediate evacuation. On some occasions in the desert areas, adequate warning may be impossible.

For floodplain management purposes, the following discussion describes the Federal Emergency Management Agency (FEMA) definition of “100-year flood.” The term "100-year flood" is misleading. It is not a flood that will occur once every 100 years. Rather, the flood elevation has a 1 percent chance of being equaled or exceeded each year. Thus, a 100-year flood could occur more than once in a relatively short period of time. The 100-year flood, which is the standard used by most federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance. A structure located within a special flood hazard area shown on a map has a 26 percent chance of suffering flood damage during the term of a 30-year mortgage.

History

Riverside County flood events include the following:

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Riverside County	1/17/1993	Federal		$12,629,191	0	0	Flooding	NCDC
Idyllwild	3/5/1995	None		$1,000,000	Not Avail.	Not Avail.	Flooding caused by rains. 3,000 acres of farmland flooded. Portions of Highway 74 washed away	NCDC
Mecca	3/6/1995	None		$1,000,000	2	Not Avail.	Flooding caused by rains.	NCDC
Riverside County	2/6/1998	Federal		12,629,191	0	125	El Nino storms: flooding, debris, road damage, water damage to homes	Co. Rpts. NCDC
Cherry Valley, Calimesa, Yucaipa-Oak Glen Conservation Camp, Banning	7/11-12/1999	Federal - SBA		$750,000	3	12	Flash flood. Camp and property damaged.	Co. Rpts & NCDC
Desert Hot Springs	3/5/2000	None		$300,000	1	0	Flooding caused by rain and snow	NCDC
Moreno Valley	3/7/2000	Local		$1,500,000	Not Avail.	Not Avail.	Flooding caused by rain. Mudslides. Homes and property destroyed.	Co. Rpts.
Eastern Riverside County	8/29/2000	None		Not Avail.	0	0	Flash flood due to severe thunderstorm, hail, heavy rain.	Co. Rpts.
Eastern Riverside County	7/6/2001	Local		$3,383,000	0	0	Flash flood. Road damage, farmland damage, crop damage.	NCDC
County Areas & Riverside City	11/24/2001	None		Not Avail.	Not Avail.	Not Avail.	Flood channel blocked. Homes flooded.	Co. Rpts.
Moreno Valley, Cathedral City	8/18/2003	None		$500,000	Not Avail.	Not Avail.	Flash flood. Government buildings flooded	NCDC

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Anza, Banning	9/4/2003	None		$150,000	Not Avail.	Not Avail.	Flash flood.	NCDC
Corona, Palm Springs	11/12/2003	None		$10,000	0	Not Avail.	Flash flood.	NCDC
Mira Loma, Moreno Valley	2/2/2004	None		$10,000	Not Avail.	Not Avail.	Flash flood.	NCDC
Temecula, Riverside, Mira Loma	2/18/2004	None		$55,000	Not Avail.	Not Avail.	Flash flood.	NCDC
Mira Loma, Moreno Valley, Perris, Sun City, Lake Elsinore	10/20/2004	Local		$500,000	0	Not Avail.	Flash flood.	Co. Rpts & NCDC

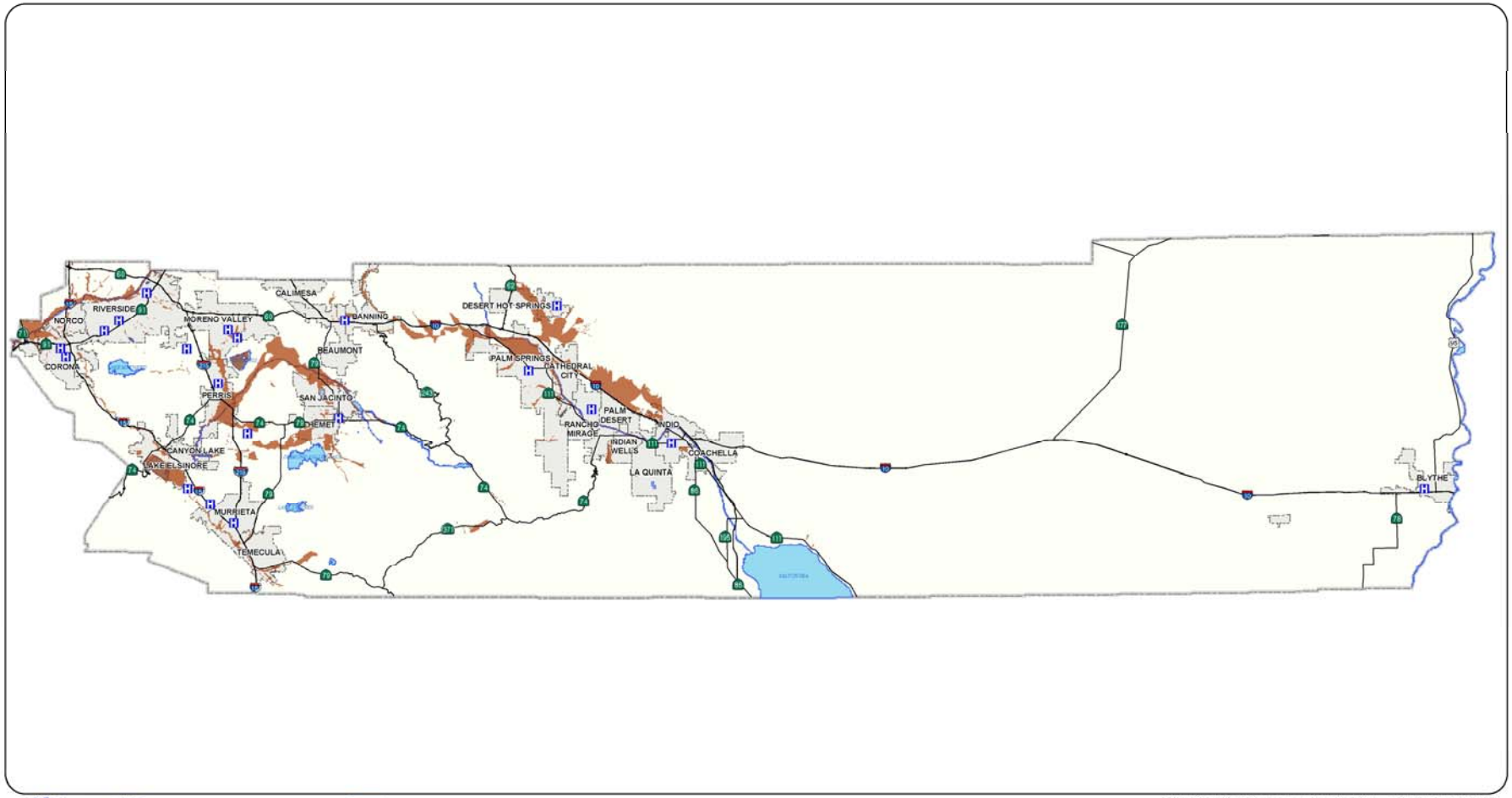
* Estimates at time of incident

NCDC: National Climatic Data Center

Maps on the following three pages show the 100-year floodplain risks for Riverside County as a whole, Western Riverside County, and Eastern Riverside County, respectively.

Riverside County

100 Year Flood Plain Risks



Hospitals
Highways
100 Year Flood Zone
Cities
Waterbodies
County Boundary

10 5 0 10 20 Miles

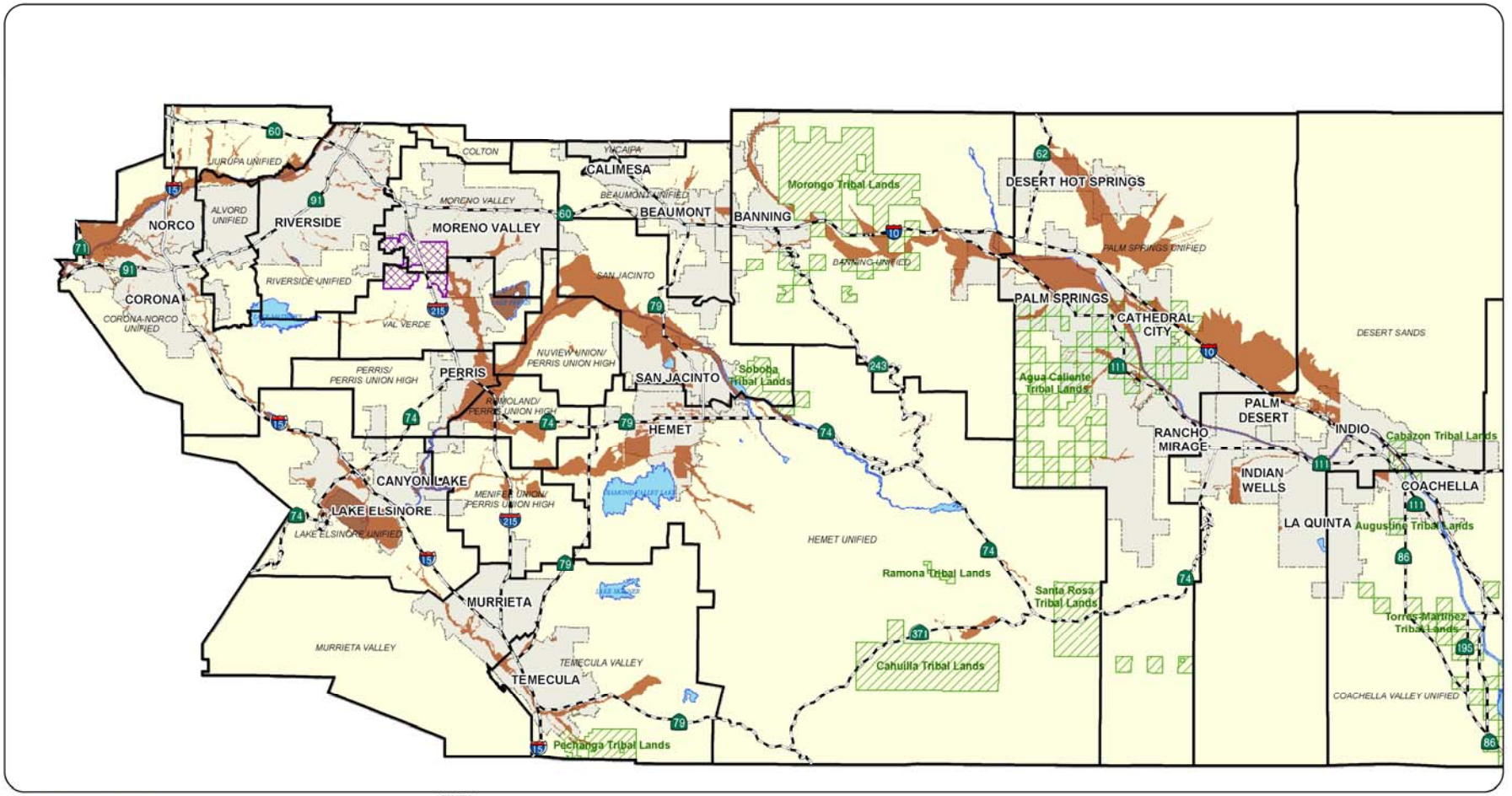
N

Created by: Janice Nollar
Source: County of Riverside

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Western Riverside County

100 Year Flood Zone Risks



Created by: Janice Nollar
Source: County of Riverside

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Horizontal accuracy: Parcel data is of mapping grade (quality) only and does not represent trustworthy locations or legal boundaries. User assumes all risk of use of this product.
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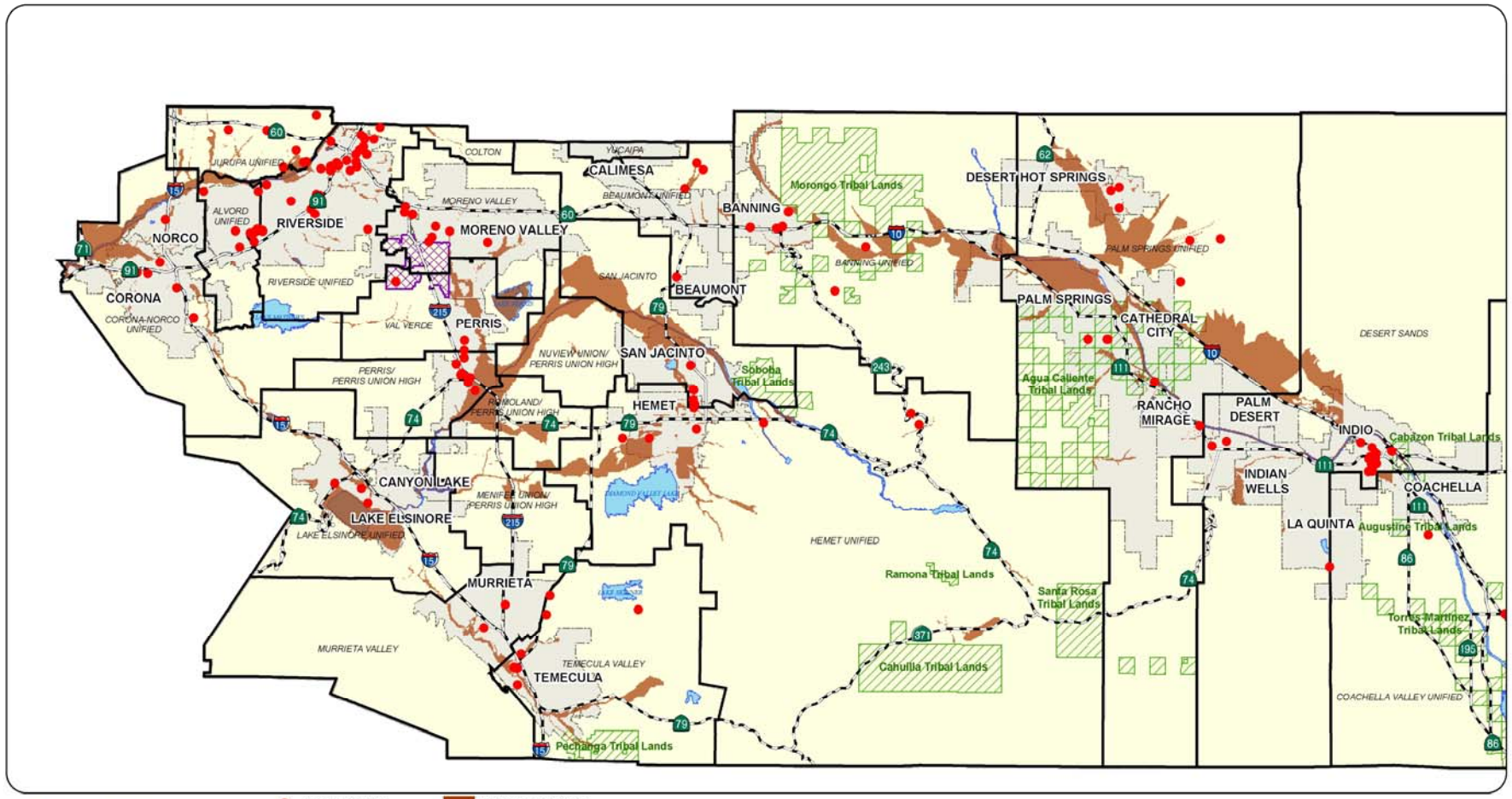
Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Western Riverside County

County Facilities - 100 Year Flood Risks



Created by: Janice Nollar
Source: County of Riverside

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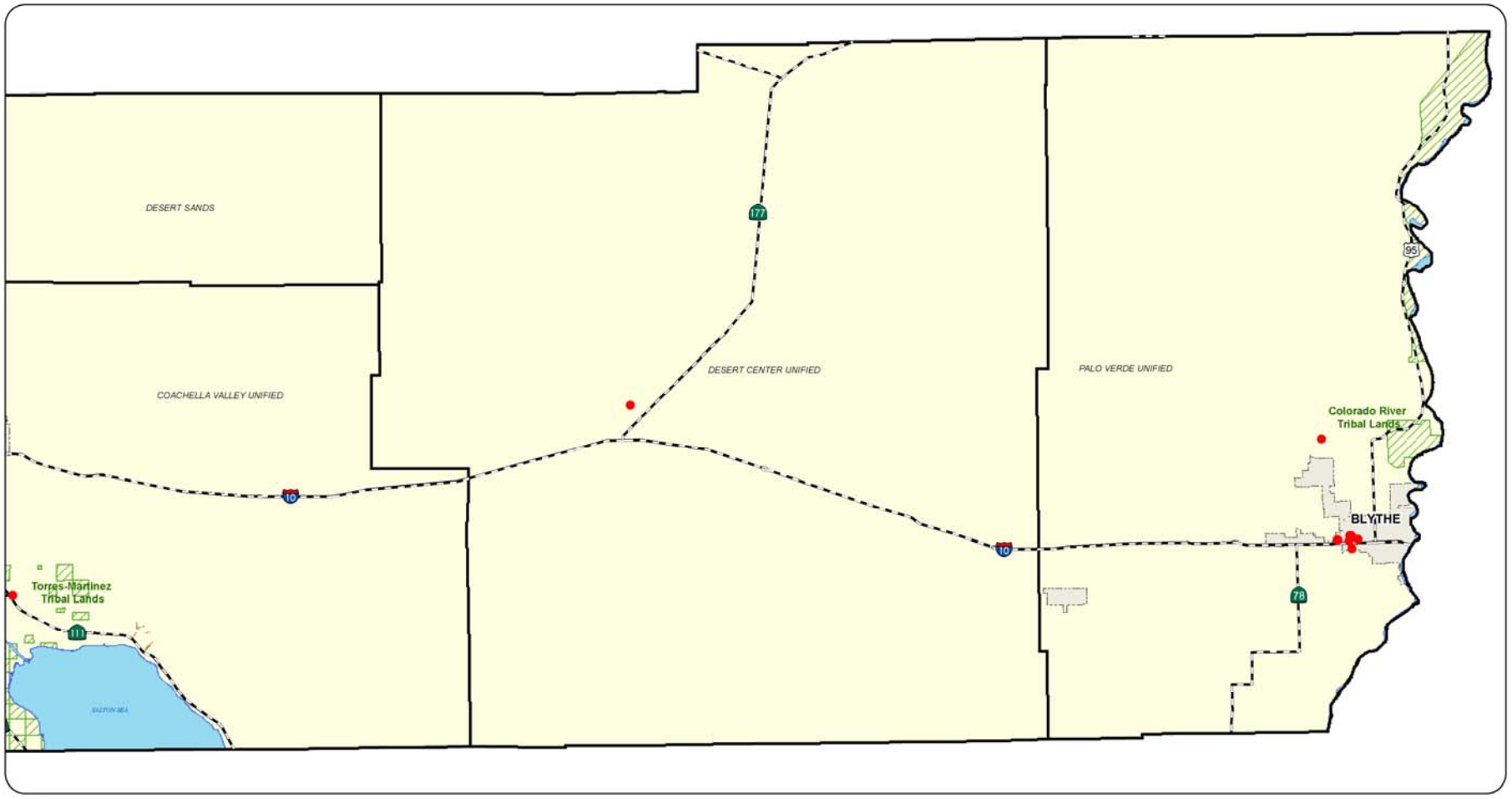
Coordinate system:
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Eastern Riverside County

County Facilities - 100 Year Flood Risks



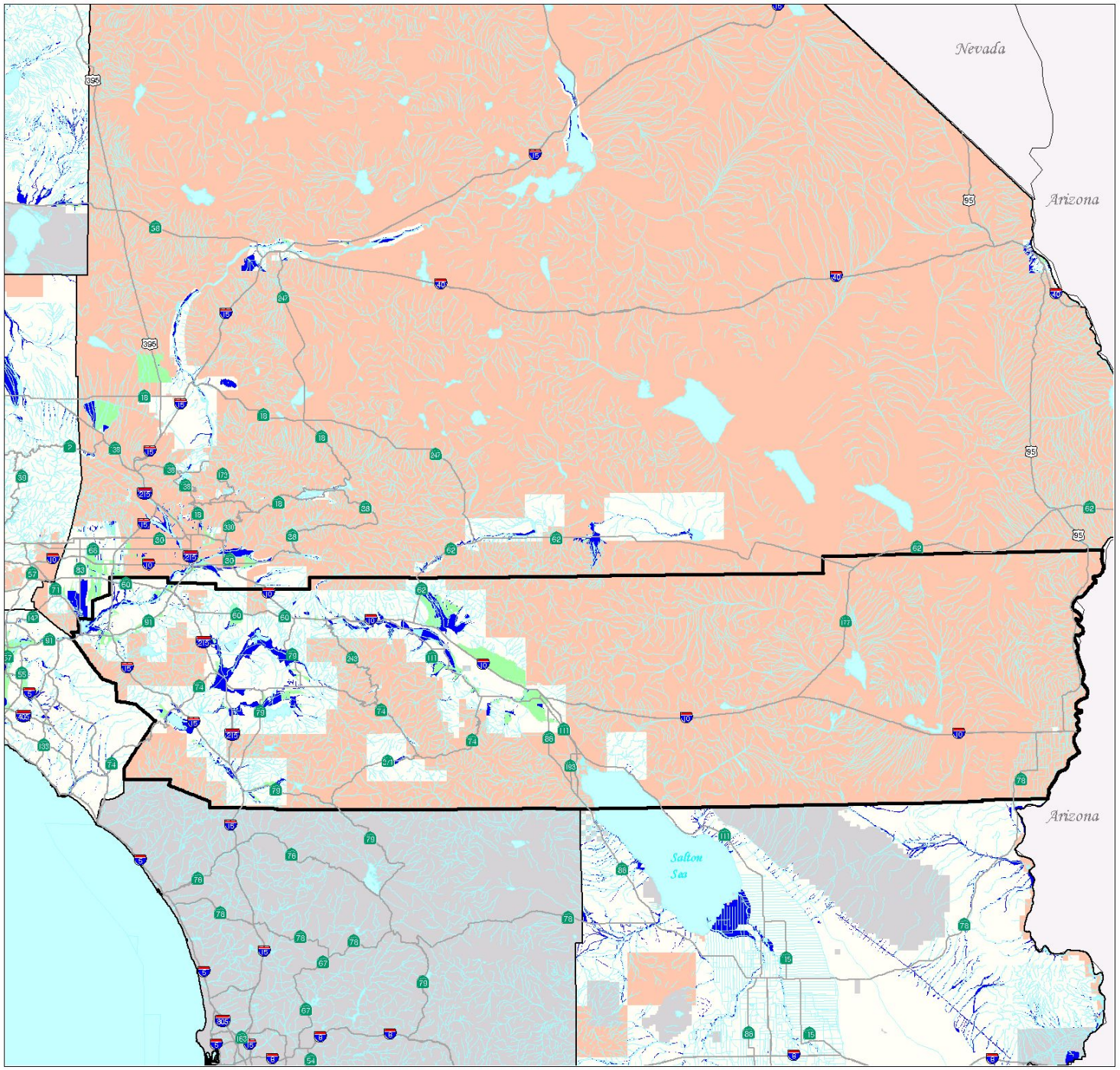
Created by: Janice Nollar
Source: County of Riverside

County Facilities
Highways
School District Boundaries
Tribal Lands
100 Year Flood Zone
Cities
Waterbodies
County Boundary

5 2.5 0 5 10 Miles

N

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983



Riverside County Flood Zones

Major roads
County boundaries
Water
Flood zones
Zone A
Zone D
Zone X
Zone X (0.2% Annual Chance)
Area Not Included

Major roads and hydrology from Thomas Brothers Maps, Inc., 2000, 2001.
Flood zones from FEMA Q3 data:
Zone A - An area inundated by 1% annual chance flooding, for which no base flood elevations have been determined.
Zone D - An area of undetermined but possible flood hazards.
Zone X - An area that is determined to be outside the 1% and 0.2% annual chance floodplains.
Zone X (0.2% Annual Chance) - An area inundated by 0.2% annual chance flooding, an area inundated by 1% annual chance flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 1% annual chance flooding.

N

0 5 10 Miles

0 5 10 Kilometers

OES CALIFORNIA
Governor's Office of Emergency Services

Risk Assessment

Although Riverside County has experienced periods of significant drought, the County can experience substantial rainfall. The soil in the County is generally not able to effectively absorb water quickly, nor is it able to absorb a large volume of water. Therefore, when Riverside County does experience heavy rain, or rain over a period of days or weeks, flash flooding is a common problem. This kind of event can occur even during a drought. A heavy rain can occur, and create flash floods, without relieving the overall drought conditions.

Floods that affect Riverside County can be attributed to three different types of storm events, namely:

1. A general winter storm that combines high-intensity rainfall and a rapid melting of the mountain snow pack.
2. A tropical storm out of the southern Pacific Ocean.
3. A summer thunderstorm, particularly in the desert areas.

There are three principal types of flood hazards, namely:

1. Stream flooding (including bridge scour and stream erosion)
2. Flash flooding (including debris and mud flows)
3. Sheetflow flooding (including alluvial fan flooding)

The major rivers in the western portion of Riverside County are dry most of the year and pose flood threats to developments within the floodplain during general storms of long duration. When a major storm moves into the area, water collects rapidly and becomes surface runoff. Resultant flood flows have predominantly short durations and sharp peaks. Increased urbanization increases flood potential by increasing the percentage of impervious surfaces.

Storms with high volumes of precipitation in a short period of time have occurred in the County causing flash floods, contaminated drinking water, disrupted electrical service, and damaged homes and contents. In addition, land that has been stripped of foliage and trees due to fire or human activity has experienced serious erosion.

Excessive precipitation can inundate soil in slopes causing mudslides and landslides. This activity can destroy homes, block highways, and destroy power lines. The County is vulnerable to this type of flood damage.

Heavy storms also can strand individuals playing near or crossing streams, rivers, flood control channels and intersections.

Riverside County has rivers, several dams, and reservoirs. Excessive rainfall can stress these systems causing serious damage to property and possible loss of life. Rivers can overflow their banks, destroy bridges, and wash out roads during flood conditions. Dam Failure is discussed in a separate section of this LHMP on that specific hazard.

Areas subject to flooding are located throughout the County. The topography of the County varies from several thousand feet above sea level to areas actually below sea level. Areas subject to flooding drain either naturally into flood controls or rivers, washes, and creeks. Most can handle normal flows.

In the desert areas, flooding can be rapid and quite severe during the period of July and August. Winter rains are generally more widespread in the desert, but flashflood potential is less due to steady-state rainfall. Winter rains are nonetheless flood-prone, but may be slightly more predictable. There is a danger to motorists who may attempt to drive through flooded washes.

Most areas of the Colorado River region are safe from heavy local rains. Heavy snow pack in the Rocky Mountains can cause controlled flooding if upstream flood control reserves are nearly full. Most flooding in the areas other than the desert is predictable and will provide time for evacuation and mitigation measures such as sandbags.

Effects on people and housing. As the table of flood incidents from 1998 – 2003 shows, the effects on people and housing can be significant.

Effects on commercial and industrial structures. Depending on the geographic area involved and the economic and demographic characteristics of the area, the effects on industry and commerce may be significant. For example, Corona Airport, Chino farmlands, and perhaps some residences could be threatened during a 200 year or 100 year storm. In this instance, high dollar loss could result in business losses, damage to aircraft, and livestock losses.

Effects on infrastructure. A slow-rising flood situation will progress through a series of stages, beginning with minor rainfall and evolving to a major event such as substantial flooding. Once flooding begins, personnel will be needed to assist in rescuing persons trapped by floodwaters, securing utilities, cordoning off flood areas, and controlling traffic. These actions may overtax local agencies, and additional personnel and resources may be required. It is anticipated that existing mutual aid resources would be used as necessary to augment local resources.

Many essential public and quasi-public facilities and hazardous materials sitesare located within the 100- or 500-year flood zones of Riverside County. As of the writing of the Safety Element of the County's General Plan, these included 14 of the County's 39 airports; 4 of 18 hospitals; 47 of 109 police stations, fire stations, and emergency operation centers; 92 of 380 schools; 446 of 1,306 highway bridges; and 695 of 1,978 hazardous materials sites.

Effects on agriculture. As the historical events in Riverside County show, effects on agriculture can be devastating. Flooding can damage crops, livestock, and dairy stock. In addition to the obvious impacts on animals and crops, flooding can have deleterious effects on soil and the ability to reinvigorate the agricultural activities affected once the flood waters recede.

Risk Assessment Conclusion.

Flooding due to heavy precipitation or dam failure is a potential hazard in Riverside County, with the resultant possibilities for damage to property and loss of life. Severe flooding can be particularly costly. In a relative sense, flooding due to precipitation does not present the degree of danger posed by other hazards such as major earthquakes. On the other hand, if there is flooding due to dam failure, the danger could be cataclysmic.

Relationship to Other Hazards – Cascading Effects

Floods can cause many cascading effects. Fire can break out because of dysfunctional electrical goods. Hazardous materials can also get into floodways, causing health concerns and polluted water supplies.

Hazard Mitigation Goals and Strategies

Much effort has been put into precluding flood damage by the Department of Flood Control; however, there is potential for damage to property and loss of life.

In addition, the County Department of Building and Safety and the County Fire Department enforce codes and standards as they review building plans and conduct building inspections.

The Riverside County General Plan, adopted in October 2003, includes the following recommendations:

1. For new construction and proposals for substantial improvements to residential and nonresidential development within 100-year floodplains as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, the County shall apply a minimum level of acceptable risk; and disapprove projects that cannot mitigate the hazard to the satisfaction of the Building Official or other responsible agency.

2. Enforce provisions of the Building Code in conjunction with the following guidelines:

a. All residential, commercial, and industrial structures shall be flood-proofed from the 100-year storm flow, and the finished floor elevation shall be constructed at such a height as to meet this requirement. Critical facilities should be constructed above grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies.
b. Critical facilities shall not be permitted in floodplains unless the project design ensures that there are two routes for emergency egress and regress, and minimizes the potential for debris or flooding to block emergency routes, either through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access.
c. Development using, storing, or otherwise involved with substantial quantities of onsite hazardous materials shall not be permitted, unless all standards for evaluation, anchoring, and flood-proofing have been satisfied; and hazardous materials are stored in watertight containers, not capable of floating, to the extent required by state and federal laws and regulations.
d. Specific flood-proofing measures may require: use of paints, membranes, or mortar to reduce water seepage through walls; installation of water tight doors, bulkheads, and shutters; installation of flood water pumps in structures; and proper modification and protection of all electrical equipment, circuits, and appliances so that the risk of electrocution or fire is eliminated. However, fully enclosed areas that are below finished floors shall require openings to equalize the forces on both sides of the walls.

3. Prohibit construction of permanent structures for human housing or employment to the extent necessary to convey floodwaters without property damage or risk to public safety. Agricultural, recreational, or other low intensity uses are allowable if flood control and groundwater recharge functions are maintained.

4. Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or unless alternative methods are utilized to the maximum extent practicable. The intent is to balance the need for protection with prudent land use solutions, recreation needs, and habitat requirements, and as applicable to provide incentives for natural watercourse preservation, including density transfer programs as may be adopted.

   a. Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan that provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.
   b. Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood control purposes in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.

5. Prohibit substantial modification to water courses, unless modification does not increase erosion or adjacent sedimentation, or increase water velocities, so as to be detrimental to adjacent property, nor adversely affect adjacent wetlands or riparian habitat.

6. Direct flood control improvement measures toward the protection of existing and planned development.

7. Any substantial modification to a watercourse shall be done in the least environmentally damaging manner possible in order to maintain adequate wildlife corridors and linkages and maximize groundwater recharge.

8. Allow development within the floodway fringe, if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety.

9. Within the floodway fringe of a floodplain as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, require development to be capable of withstanding flooding and to minimize use of fill. However, some development may be compatible within flood plains and floodways, as may some other land uses. In such cases, flood proofing would not be required. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows.

10. Require all proposed projects anywhere in the County to address and mitigate any adverse impacts that it may have on the carrying capacity of local and regional storm drain systems.

11. Encourage neighboring jurisdictions to require development occurring adjacent to the County to consider the impact of flooding and flood control measures on properties within unincorporated Riverside County.

Hazard: Earthquakes

County Severity Rating : 4	County Probability Rating: 3

OA Jurisdictions Affected by Earthquake

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Elsinore Valley Municipal Water District
- Home Gardens County Water District
- Idyllwild Fire Protection District
- Idyllwild Water District
- Lake Elsinore Unified School District
- Lee Lake Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency

- San Jacinto Unified School District
- Valley Sanitation District
- West Valley Water District
- Western Municipal Water District

Hazard Definition

An earthquake is a sudden, rapid shaking of the ground caused by the breaking and shifting of rock beneath the Earth's surface. For hundreds of millions of years, the forces of plate tectonics have shaped the Earth as the huge plates that form the Earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free causing the ground to shake. Most earthquakes occur at the boundaries where the plates meet; however, some earthquakes occur in the middle of plates.

The major form of direct damage from most earthquakes is damage to construction. Bridges are particularly vulnerable to collapse, and dam failure may generate major downstream flooding. Buildings vary in susceptibility, dependent upon construction and the types of soils on which they are built. Earthquakes destroy power and telephone lines; gas, sewer, or water mains; which, in turn, may set off fires and/or hinder firefighting or rescue efforts. The hazard of earthquakes varies from place to place, dependent upon the regional and local geology. Ground shaking may occur in areas 65 miles or more from the epicenter (the point on the ground surface above the focus). Ground shaking can change the mechanical properties of some fine grained, saturated soils, whereupon they *liquefy* and act as a fluid (liquefaction).

Where earthquakes have struck before, they will strike again. Earthquakes strike suddenly, without warning. Earthquakes can occur at any time of the year and at any time of the day or night.

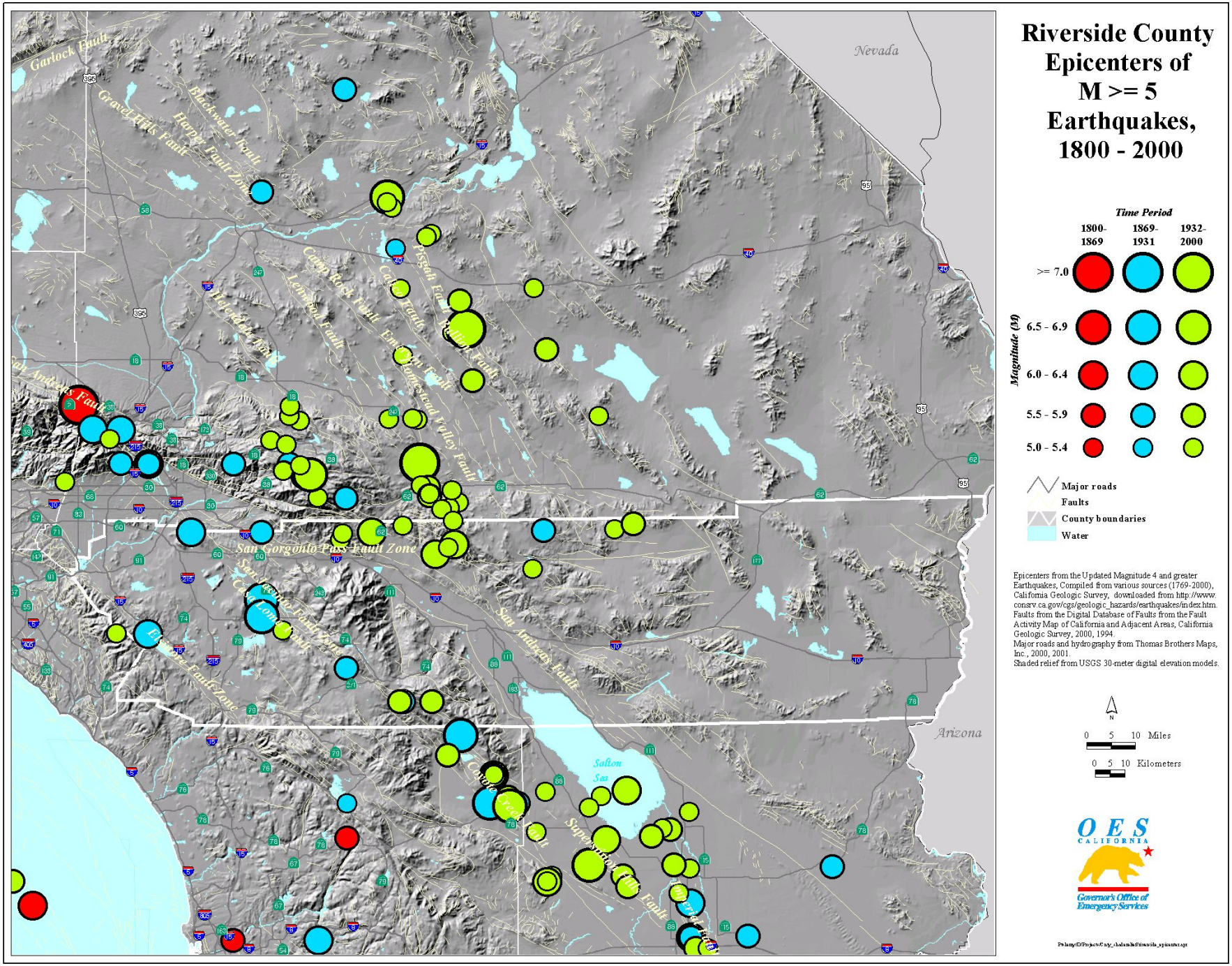
Ground movement during an earthquake is seldom the direct cause of death or injury. Most earthquake-related injuries result from collapsing walls, flying glass, and falling objects as a result of the ground shaking, or people trying to move more than a few feet during the shaking. Much of the damage in earthquakes is predictable and preventable.

History

The following table shows earthquakes since 1999 with an epicenter in Riverside County:

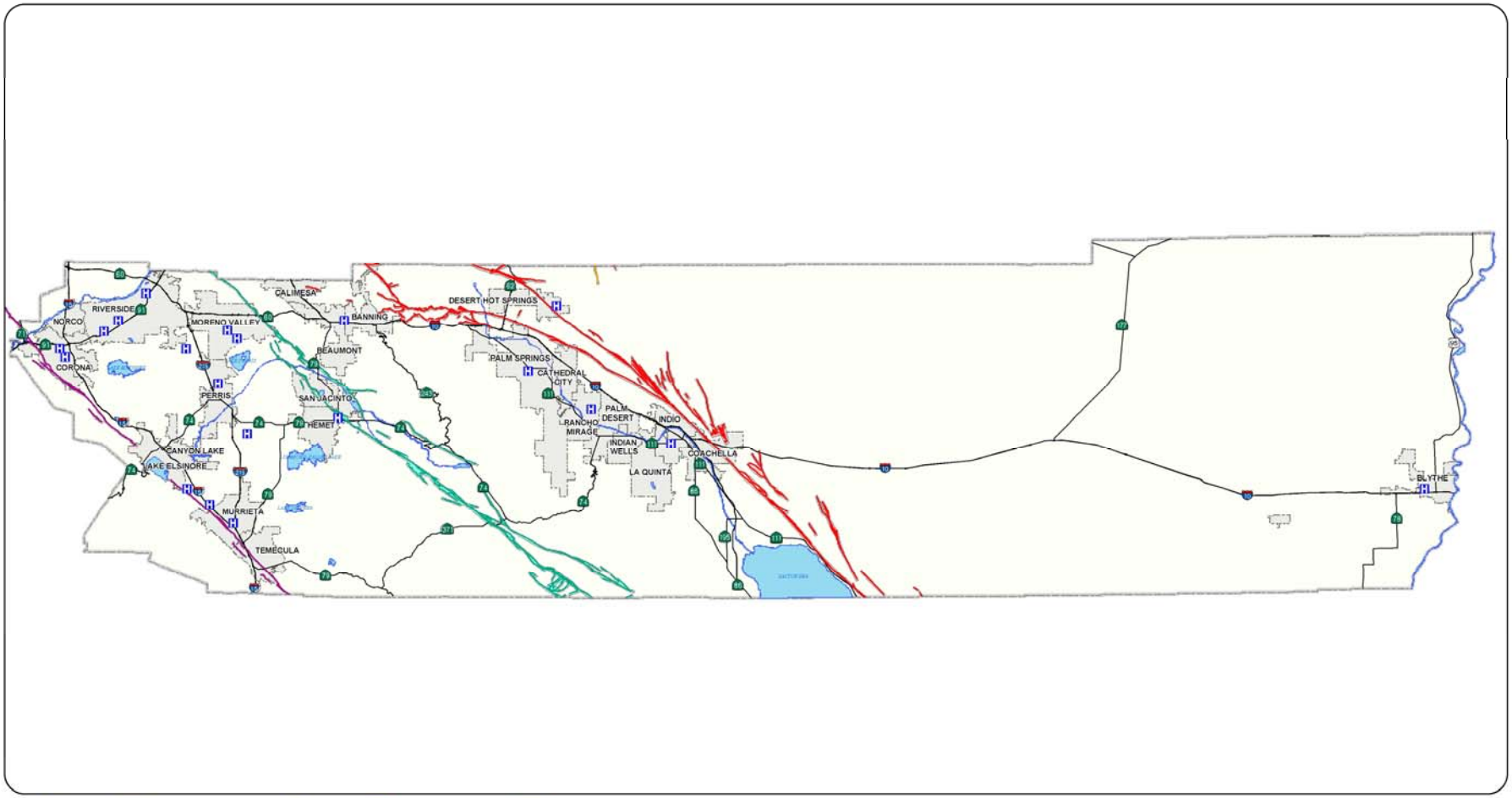
Epicenter	Date of Incident	Richter Scale Intensity
9.3 miles E of Indio	7/13/2004	4.0
6.4 miles NW of Hemet	2/25/2004	3.6
6.2 miles NNE of Indio	11/27/2003	3.5
11.5 miles ENE of Indio	5/14/2003	3.7
7.1 miles WSW of Anza	9/17/2002	3.7
9.6 miles ESE of Anza	10/30/2001	5.1
6.9 miles SE of Mt. San Gorgonio	5/23/2001	3.8
6 miles ENE of Desert Hot Springs	10/17/1999	4.1
6 miles NW of Anza	7/19/1999	4.1
4 miles NE of Mt. San Gorgonio	4/21/1999	3.9

The following four maps depict known faults within Riverside County.


Riverside County
Epicenters of
M >= 5
Earthquakes,
1800 - 2000
Time Period
1800-1869
1869-1931
1932-2000
Magnitude (M)
>= 7.0
6.5 - 6.9
6.0 - 6.4
5.5 - 5.9
5.0 - 5.4
Major roads
Faults
County boundaries
Water
Epicenters from the Updated Magnitude 4 and greater Earthquakes, Compiled from various sources (1769-2000), California Geologic Survey, downloaded from http://www.consrv.ca.gov/cgs/geologic_hazards/earthquakes/index.htm.
Faults from the Digital Database of Faults from the Fault Activity Map of California and Adjacent Areas, California Geologic Survey, 2000, 1994.
Major roads and hydrography from Thomas Brothers Maps, Inc., 2000, 2001.
Shaded relief from USGS 30-meter digital elevation models.
0 5 10 Miles
0 5 10 Kilometers
OES CALIFORNIA
Governor's Office of Emergency Services
Nevada
Arizona
Garlock Fault
Gravel Hills Fault
Harper Fault Zone
Blackwater Fault
Helendale Fault
Lenwood Fault
Camp Rock Fault
Emerson Fault
Pisgah Fault
Calico Fault
Bullion Fault
Homestead Valley Fault
San Andreas Fault
San Gorgonio Pass Fault Zone
San Jacinto Fault Zone
Coyote Creek Fault
Elsinore Fault Zone
San Andreas Fault
Salton Sea
Superstition Hills Fault
Imperial Fault

Riverside County

Alquist-Priolo Faults and Zones Risks



Hospitals
Highways
Burnt Mountain Fault
Elsinore Fault
Eureka Peak Fault
San Andreas Fault
San Jacinto Fault
Elsinore Fault Zone
San Andreas Fault Zone
San Jacinto Fault Zone
Cities
Waterbodies
County Boundary

10 5 0 10 20 Miles

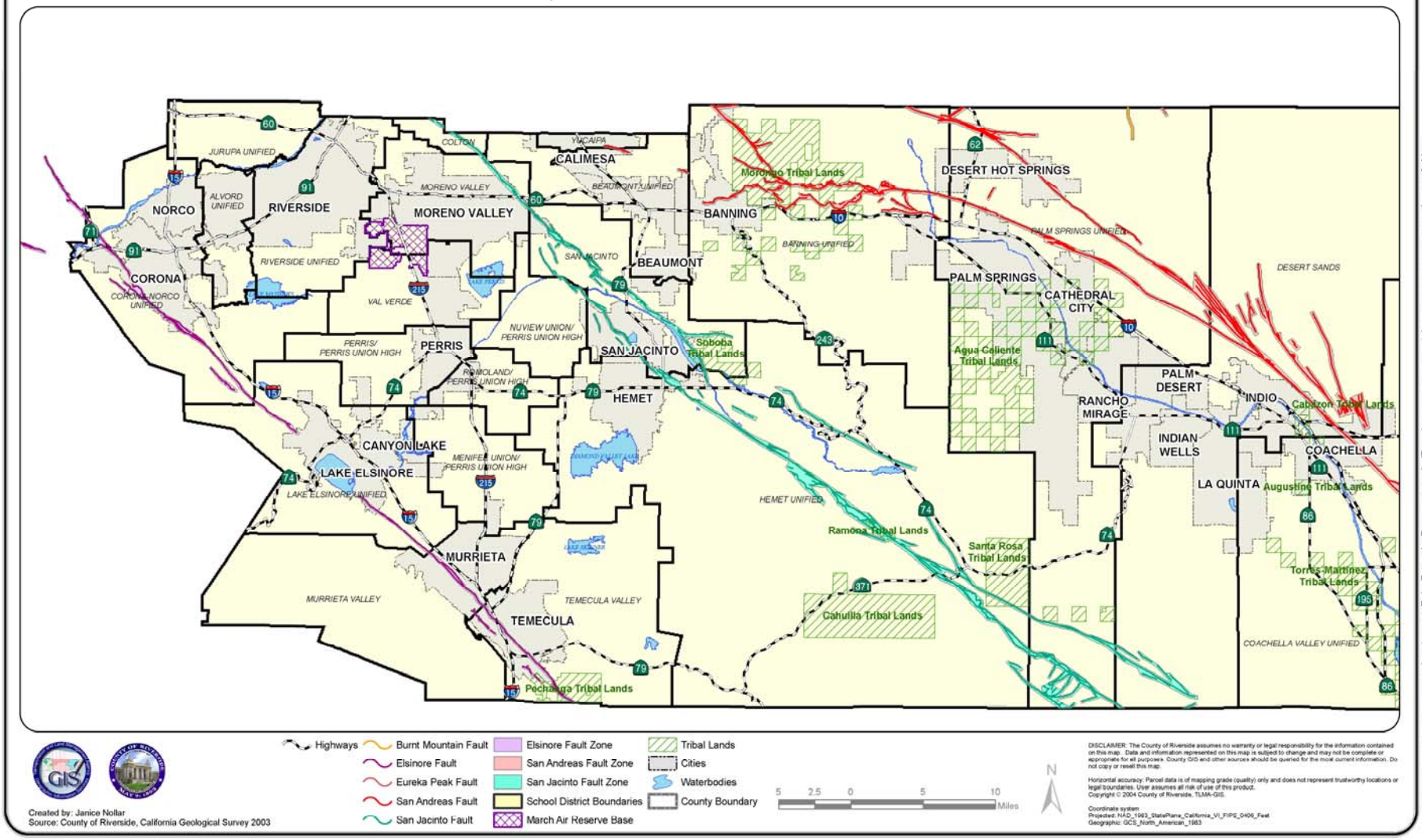
N

Created by: Janice Nollar
Source: County of Riverside, California Geological Survey 2003

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Western Riverside County

Alquist-Priolo Faults and Zones Risks



Created by: Janice Nollar
Source: County of Riverside, California Geological Survey 2003

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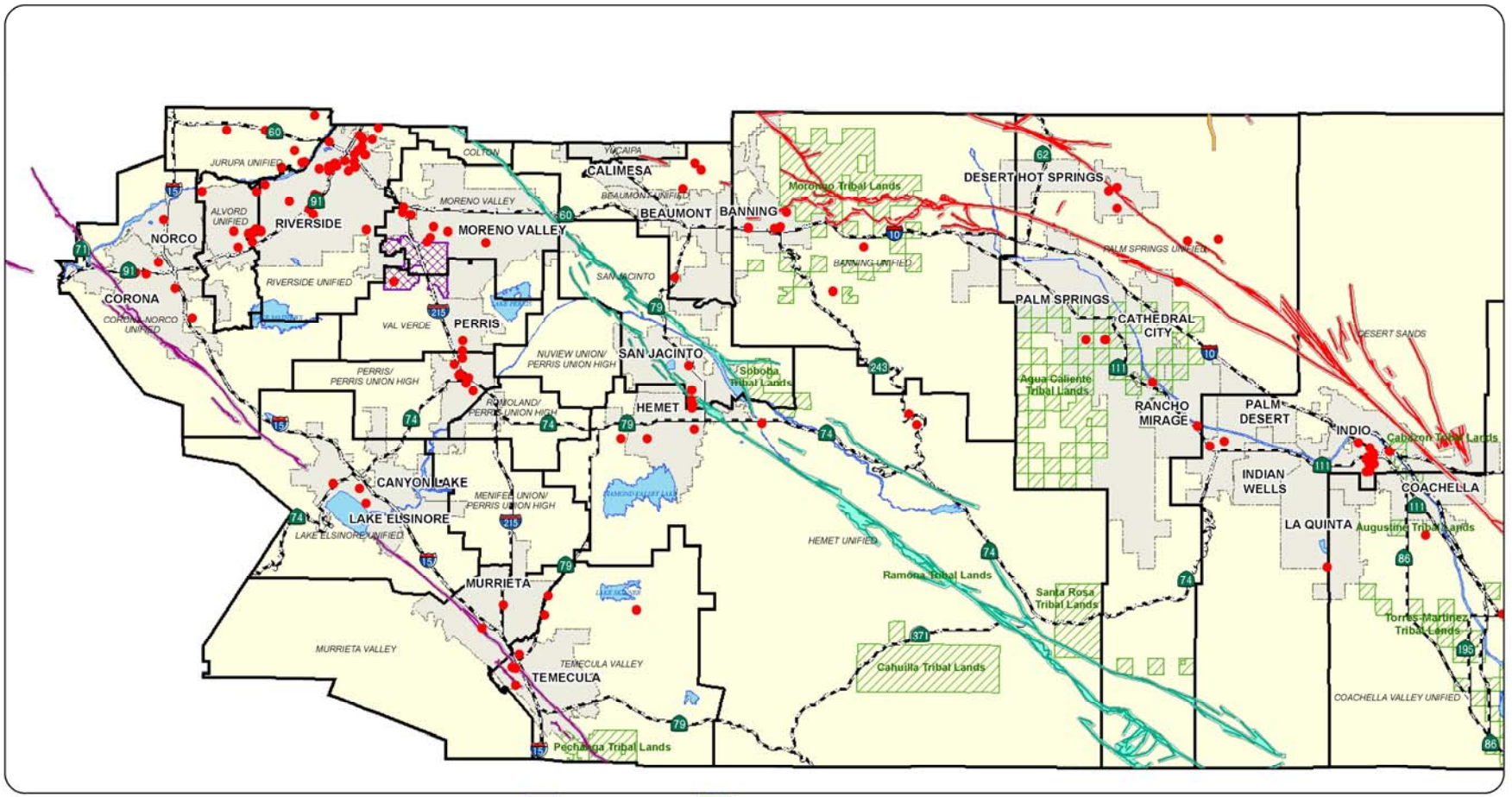
Coordinate system:
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Western Riverside County

County Facilities - Earthquake and Major Highway Risks



Created by: Janice Nollar
Source: County of Riverside, California Geological Survey 2003

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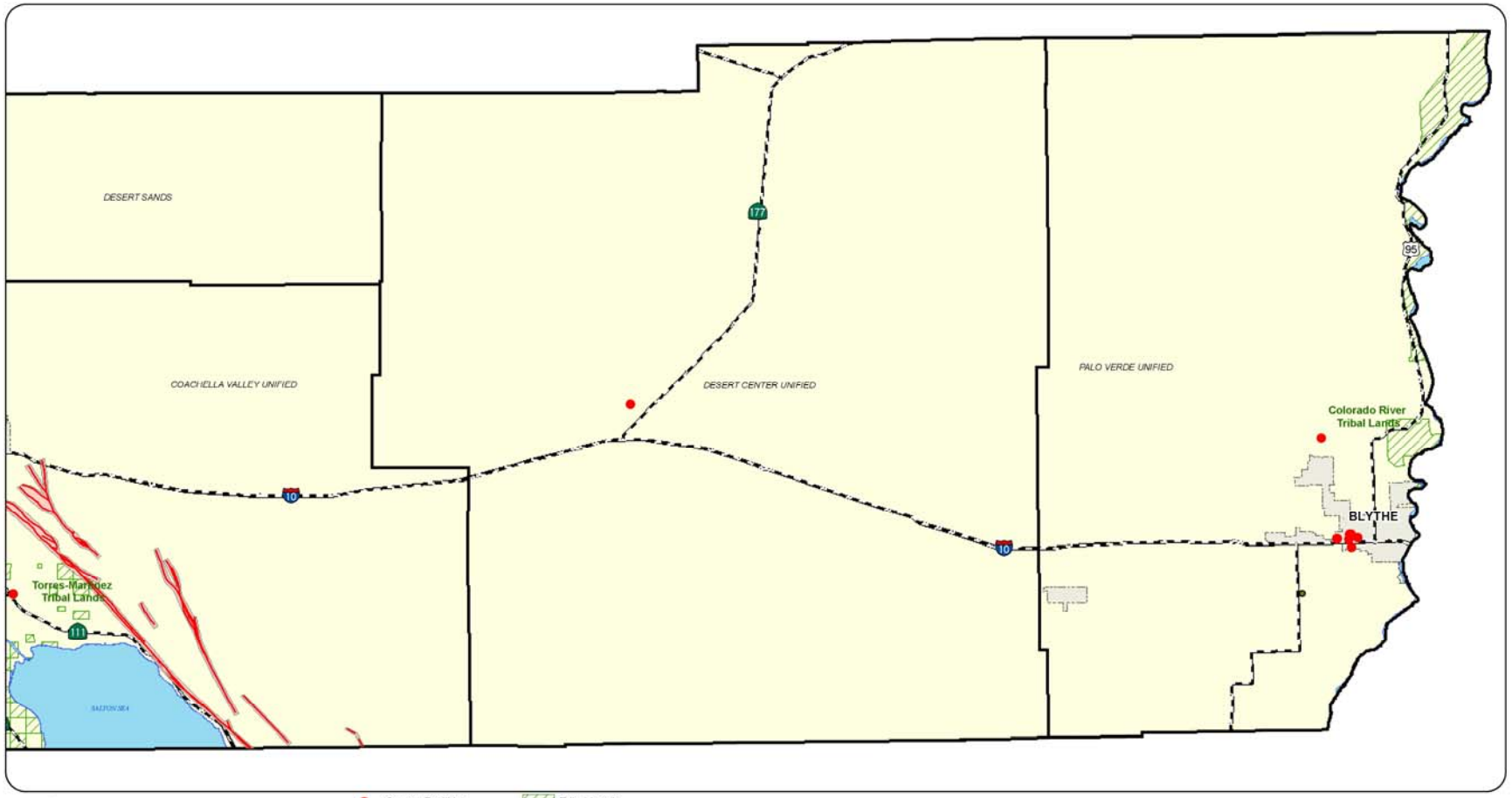
Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Eastern Riverside County

County Facilities - Earthquake and Major Highway Risks



Risk Assessment

Located within Riverside County are several known active and potentially active earthquake faults, including the San Andreas, San Jacinto, and Elsinore. In the event of an earthquake, the location of the epicenter as well as the time of day and season of the year would have a profound effect on the number of deaths and casualties, as well as property damage.

Research centers devoted to the detection and logging of earthquake events post a continuous string of activity in Riverside County faults as well as those in nearby areas.

A moderate earthquake occurring in or near Riverside County could result in deaths, casualties, property damage, environmental damage, and disruption of normal government and community services and activities. The effects could be aggravated by collateral emergencies such as fires, flooding, hazardous material spills, utility disruptions, landslides, transportation emergencies, and the possible failure of several dams in Riverside County.

The community needs would most likely exceed the response capability of the County's emergency management organization, requiring mutual assistance from volunteer and private agencies, the Governor's Office of Emergency Services, and the Federal Emergency Support Functions.

The San Andreas Fault is the "master" fault of an intricate fault network that cuts through rocks of the California coastal region. The entire San Andreas Fault system is more than 800 miles long and extends to depths of at least 10 miles within the earth. The San Andreas Fault forms a continuous, narrow break in the earth's crust that extends from northern California southward to Cajon Pass near San Bernardino. Southeastward from Cajon Pass, several branching faults, including the San Jacinto and Banning faults, share the movement of the crustal plates.

Recent studies of the eastern knot of the San Andreas near San Gorgonio Pass reveal that this area is more advanced in the cycle of strain accumulation than the western knot at the Cajon Pass. Recent earthquake activity around the Southern San Andreas, including the June, 1992 Landers-Big Bear earthquakes, has prompted scientists to increase their studies of this area.

An M8.0 or greater earthquake in Riverside County on the San Gorgonio to the Salton Sea segment could cause thousands of casualties, extensive major property damage, disruption in communications and utility systems, disruption in supply and distribution systems, and general panic. An earthquake of this magnitude could directly affect all of Riverside County and most of southern California, causing a critical demand on mutual aid resources and competition for national relief.

Another interrelated fault, the San Jacinto fault, has had a higher level of moderate-to-large earthquakes during the past 50 to 100 years, although the rate of slip is not as high. Geodetic data indicates there is an "appreciable" strain accumulation across both faults, implying that either one or both may be primed for release. One of the larger and more active fault segments of the San Jacinto fault, the Casa Loma Faults, runs from near Perris Reservoir to just north of Anza. Also, another large and active named segment is the Clark Fault, which runs from near Hemet to just 9 miles southwest of the shore of the Salton Sea. Historically, the San Jacinto Fault moves on average every 14 years, with the longest known interval being 19 years. The last slip occurred on the Borrego Springs segment in 1968.

In 1988, the Working Group on California Earthquake Probabilities (WGCEP) estimated 30-year probabilities of 20 percent for an M 7.0 event on the San Bernardino Valley segment of the San Jacinto Fault Zone. In late 1993, Special Publication 102, "Planning Scenario for a Major Earthquake on the San Jacinto Fault in the San Bernardino Area" was published by the California Department of Conservation, Division of Mines and Geology. This planning scenario states that an earthquake of M 7.0 on the San Bernardino Valley Segment of the San Jacinto Fault Zone is a significant hazard to lives and property in western Riverside County.

A third major fault zone that traverses Riverside County is the Elsinore Fault. The Elsinore Fault Zone is one of the largest in southern California. While not seismically active in recent years, current trenching is being conducted to determine the frequency of past movement. It has not yet revealed major faulting in historic times.

- **Effects on people and housing.** In any earthquake, the primary consideration is saving lives. Time and effort must also be dedicated to providing for mental health by reuniting families, providing shelter to displaced persons, and restoring basic needs and services. Major efforts will be required to remove debris and clear roadways, demolish unsafe structures, assist in reestablishing public services and utilities, and provide continuing care and temporary housing for affected citizens.

  A survey of local, State, and Federal government emergency plans indicate that although there is a general capacity to respond to small and intermediate-sized earthquakes, it is unlikely that any of these governmental units will be able to cope with the *immediate* impact of a great quake, such as an M 8.3 event on the south-central San Andreas fault. The general public must realize that the assistance that they have been used to expecting simply will not be immediately available. In fact, in the event of an earthquake of such magnitude, citizens must be prepared to wait for up to 72 hours or more for any type of organized response.

- **Effects on commercial and industrial structures.** After any earthquake, individuals are likely to lose wages due to the inability of businesses to function because of damaged goods and/or facilities. With business losses, the County of Riverside and the cities in the Riverside County Operational Area will lose revenue. Economic recovery from even a minor earthquake will be critical to the communities involved.

- **Effects on infrastructure.** The damage caused by both ground breaking and ground shaking can lead to the paralysis of the local infrastructure: police, fire, medical and governmental services.

- **Effects on Critical Facilities.** A large number of critical facilities have been identified as being adjunct to the various faults in the County and surrounding counties. The list of facilities includes hospitals, fire stations, law enforcement facilities, and schools.

- **Effects on agriculture.** Earthquakes can cause loss of human life, loss of animal life, and property damage to structures and land dedicated to agricultural uses. The most significant long-term impacts on agriculture from earthquakes are those that arise from the cascading effects of fire and flood.

Risk Assessment Conclusion.

Riverside County is clearly at high risk for a significant earthquake causing catastrophic damage and strains on response and mitigation resources. Both property and human life are at high risk. The County experiences hundreds of minor quakes and tremblers each month from the myriad of faults in the area. Studies indicate that stress is building up in major faults like the San Andreas. A major quake could happen at any time.

Earthquake risk is very high in the most heavily populated western portion of the County and the Coachella Valley, due to the presence of two of California's most active faults, the San Andreas and San Jacinto. Risk is moderate in the eastern portion of the County beyond the Coachella Valley.

The following table summarizes loss estimations for earthquakes in the ten-county Southern California area:

Earthquake Related Loss Estimation Riverside County Area			
Fault Line	**County**	**Magnitude on Richter Scale**	**Estimated Loss (Billions)**
Elsinore Fault	Riverside	6.8	4
San Jacinto	Riverside	6.7	7
Rose Canyon Fault	San Diego	6.9	28
Newport Inglewood Fault	L.A./Orange	6.9	170
Palos Verdes Fault	L.A.	7.1	90
Coachella Valley Fault	Riverside	7.1	2,600
San Andreas Fault	Various	7.4	5,025
Whittier Fault	L.A./Orange	6.8	1,250
Raymond Fault	L.A.	6.5	64
Puente Hills Fault	L.A.	7.1	408

Relationship to Other Hazards – Cascading Effects

Earthquakes can cause many cascading effects such as fires, flooding, hazardous material spills, utility disruptions, landslides, transportation emergencies, and the possible failure of several dams in Riverside County.

Earthquakes may cause landslides and rupture dams. Ground shaking may cause seiche, the rhythmic sloshing of water in lakes or bays.

HAZUS Analysis

As part of the development of this LHMP, eight earthquake scenarios were created in HAZUS-MH, the FEMA-approved software program for estimating potential losses from disasters.

Jurisdictions (including unincorporated areas of the County) were grouped together by relative geographical proximity into eight “regions.” One scenario was created for each of the eight regions. In each scenario, a fault running through or close to the region was selected for the simulated earthquake and the simulated earthquake’s epicenter was placed along the fault line in a location in or near the region.

The results produced by HAZUS are reported by census tract. For the thirty submitting jurisdictions that are either cities or unincorporated areas of the County, results have been summarized and placed in tables. The summarized results for twenty-four cities are presented in Part II of the LHMP, by city. The summarized results, along with a map of relative ground motion, for each of six unincorporated areas of the County are presented here in Part 1 of the LHMP on the pages immediately following.

Scenario 1

Simulation: M6.7 earthquake on the Elsinore Fault, epicenter in/near Southwest Corona

Name of Scenario: RiversideNorcoCorona

Submitting Cities and Unincorporated Areas for Which Census Tract Results Have Been Summarized:

- Riverside (see Riverside tab in Part 2 of LHMP)
- Corona (see Corona tab in Part 2 of LHMP)
- Norco (see Norco tab in Part 2 of LHMP)
- Jurupa/Mira Loma/Pedley
- Highgrove

Other Jurisdictions Included in Simulation Region (results from software not specific to this jurisdictional level):

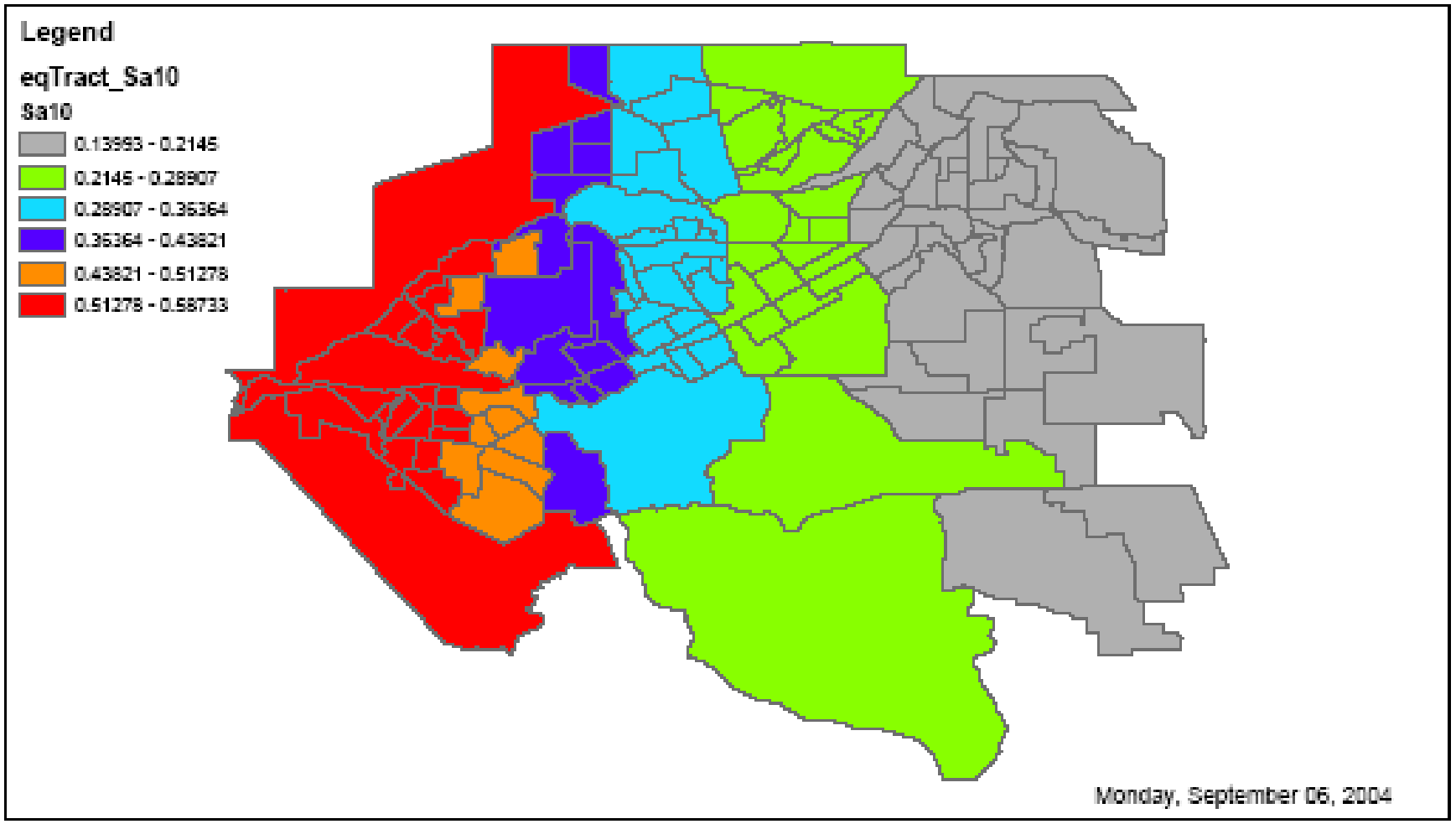
- UC-Riverside
- Riverside Community Hospital
- Jurupa Community Service District
- Jurupa Unified School District
- Alvord Unified School District
- Riverside Unified School District
- Corona-Norco Unified School District
- Riverside County Office of Education, Children, and Family Services
- Kaiser Hospital
- Parkview Hospital
- Home Gardens County Water District
- Lee Lake Water District

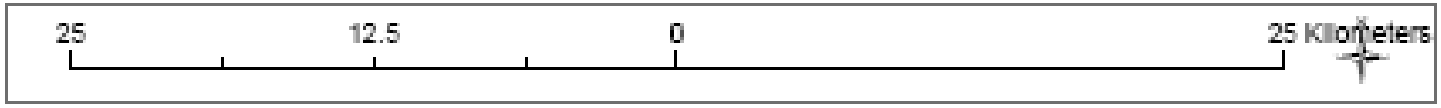
The map on the following page shows relative ground motion in Scenario 1 for the simulated earthquake. “Red” represents the most severe ground motion at one extreme and “grey” represents the least severe ground motion at the other extreme.

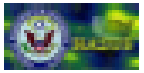
Summarized results for the two unincorporated areas listed above follow the map.

Study Region : RiversideNorcoCorona

Hazard Scenario : M6.7 on Northern Elsinore Fault







SUMMARIZED HAZUS RESULTS

Jurisdiction: Jurupa/Mira Loma/Pedley

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$5,865.22
Non-Structural Damage	$27,727.43
Building Damage	$33,592.66
Contents Damage	$10,010.88
Inventory Loss	$191.24
Relocation Cost	$150.46
Income Loss	$817.73
Rental Income Loss	$1,435.46
Wage Loss	$992.12
Total Loss	$47,190.53

Commercial Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Jurupa/Mira Loma/Pedley

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Educational Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Jurupa/Mira Loma/Pedley

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Single Family Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	8
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Highgrove

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$1,214.45
Non-Structural Damage	$4,833.84
Building Damage	$6,048.29
Contents Damage	$2,078.96
Inventory Loss	$184.58
Relocation Cost	$35.21
Income Loss	$314.04
Rental Income Loss	$398.95
Wage Loss	$393.68
Total Loss	$9,453.70

Commercial Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Highgrove

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Educational Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Highgrove

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Single Family Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Scenario 2

Simulation: M6.9 earthquake on the San Jacinto Fault, epicenter near eastern Moreno Valley

Name of Scenario: MorenoValleyPerris

Submitting Cities for Which Census Tract Results Have Been Summarized:

- Moreno Valley (see Moreno Valley tab in Part 2 of LHMP)
- Perris (see Perris tab in Part 2 of LHMP)

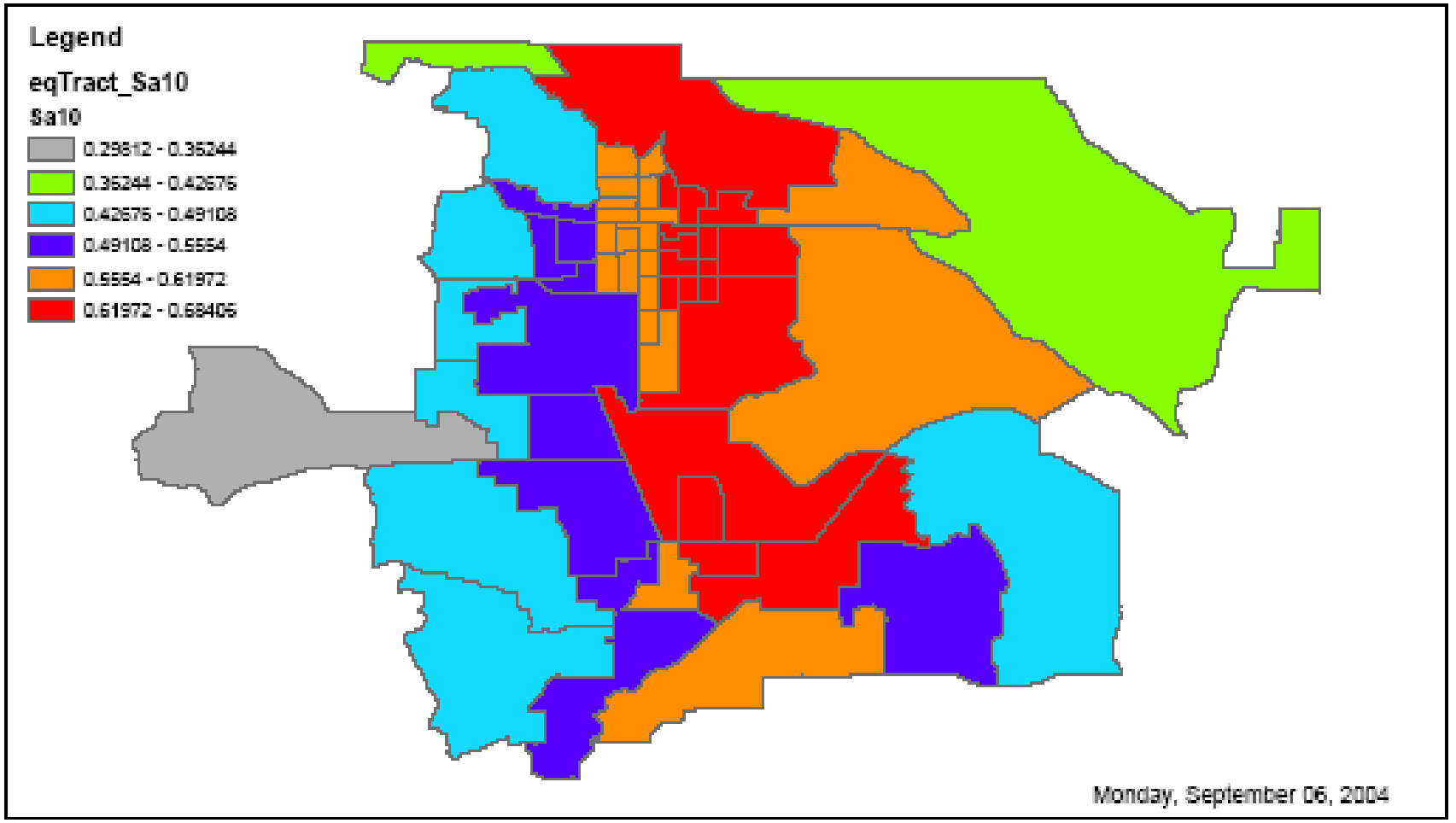
Other Jurisdictions Included in Simulation Region (results from software not specific to this jurisdictional level):

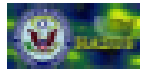
- Moreno Valley Unified School District
- Perris Union High School
- Moreno Valley Community Hospital
- Riverside County Regional Medical Center
- Eastern Municipal Water District
- West Valley Water District

The map on the following page shows relative ground motion in Scenario 2 for the simulated earthquake. "Red" represents the most severe ground motion at one extreme and "grey" represents the least severe ground motion at the other extreme.

No unincorporated areas were analyzed in this scenario.

Study Region : MorenoValleyPerris
Hazard Scenario : M6.9 on Northern San Jacinto





Scenario 3

Simulation: M6.9 earthquake on the Elsinore Fault, epicenter near Lake Elsinore

Name of Scenario: LakeElsinoreCanyonLakePerris

Submitting Cities and Unincorporated Areas for Which Census Tract Results Have Been Summarized:

- Canyon Lake (see Canyon Lake tab in Part 2 of LHMP)
- Lake Elsinore (see Lake Elsinore tab in Part 2 of LHMP)
- Perris (see Perris tab in Part 2 of LHMP)
- Winchester/Nuevo/Sun City/Wildomar

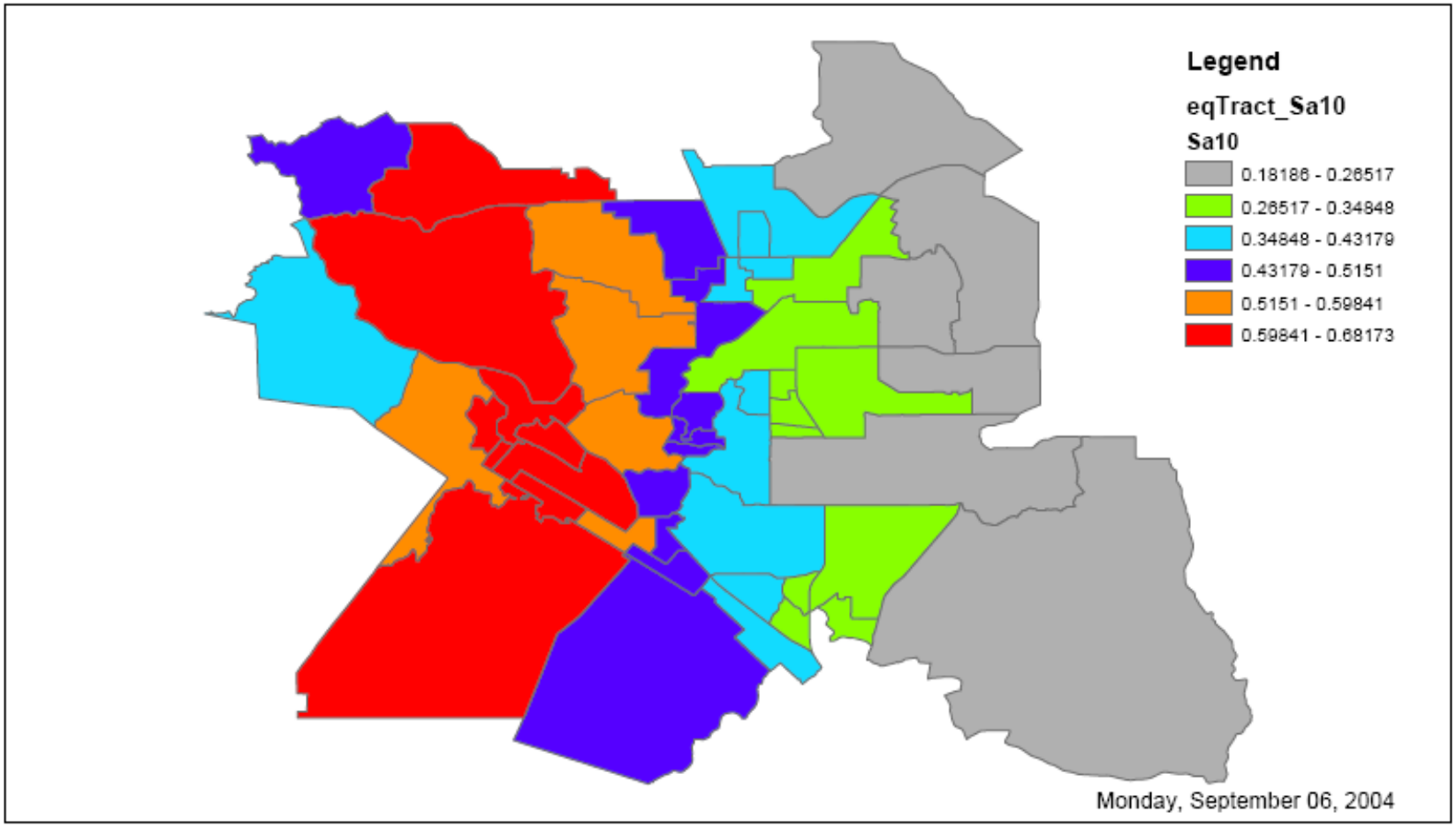
Other Jurisdictions Included in Simulation Region (results from software not specific to this jurisdictional level):

- Menifee Valley Medical Center
- Lake Elsinore Unified School District
- Menifee Unified School District
- Val Verde Unified School District
- Eastern Municipal Water District
- Western Municipal Water District

The map on the following page shows relative ground motion in Scenario 3 for the simulated earthquake. “Red” represents the most severe ground motion at one extreme and “grey” represents the least severe ground motion at the other extreme.

Summarized results for the one unincorporated area listed above follow the map.

Study Region : LakeElsinoreCanyonLakePerris
Hazard Scenario : M6.9 on Elsinore Fault



SUMMARIZED HAZUS RESULTS

Jurisdiction: Winchester/Nuevo/Sun City/Wildomar

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$35,941.59
Non-Structural Damage	$155,943.57
Building Damage	$191,885.17
Contents Damage	$47,937.93
Inventory Loss	$557.60
Relocation Cost	$853.31
Income Loss	$3,995.38
Rental Income Loss	$7,151.57
Wage Loss	$4,890.08
Total Loss	$257,270.97

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Winchester/Nuevo/Sun City/Wildomar

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Educational Casualties for Daytime Event	
Medical Aid	12
Hospital Treatment	3
Life-Threatening Severity	0
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	7
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	22
Hospital Treatment	4
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Winchester/Nuevo/Sun City/Wildomar

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Single Family Casualties for Daytime Event	
Medical Aid	9
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	52
Hospital Treatment	9
Life-Threatening Severity	1
Death	3

Scenario 4

Simulation: M6.7 earthquake on the Elsinore Fault, epicenter on border of Murrieta/Temecula

Name of Scenario: MurrietaTemecula

Submitting Cities and Unincorporated Areas for Which Census Tract Results Have Been Summarized:

- Murrieta (see Murrieta tab in Part 2 of LHMP)
- Temecula (see Temecula tab in Part 2 of LHMP)
- Sage/Anza

Other Jurisdictions Included in Simulation Region (results from software not specific to this jurisdictional level):

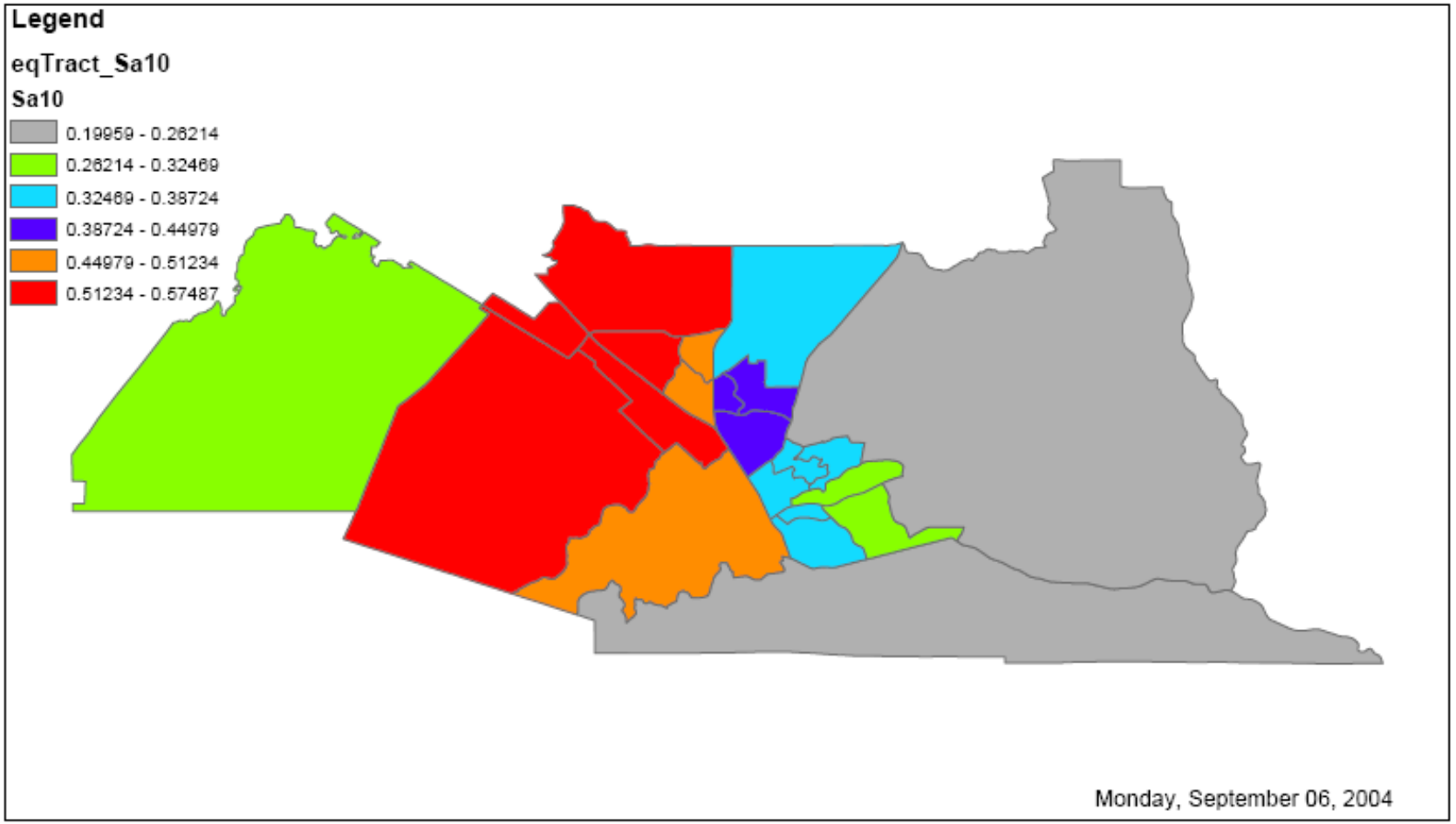
- Murrieta County Water District
- Inland Valley Medical Center
- Rancho Springs Medical Center
- Rancho California Water District
- Santa Rosa Community Service District

The map on the following page shows relative ground motion in Scenario 4 for the simulated earthquake. "Red" represents the most severe ground motion at one extreme and "grey" represents the least severe ground motion at the other extreme.

Summarized results for the one unincorporated area listed above follow the map.

Study Region : MurrietaTemecula

Hazard Scenario : M6.7 on Southern Elsinore Fault



SUMMARIZED HAZUS RESULTS

Jurisdiction: Sage/Anza

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$4,292.06
Non-Structural Damage	$16,318.37
Building Damage	$20,610.43
Contents Damage	$6,097.36
Inventory Loss	$270.53
Relocation Cost	$107.09
Income Loss	$1,138.15
Rental Income Loss	$1,260.09
Wage Loss	$1,593.15
Total Loss	$31,076.79

Commercial Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Sage/Anza

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Educational Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Sage/Anza

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Single Family Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	10
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Scenario 5

Simulation: M7.1 earthquake on the San Jacinto Fault, epicenter between San Jacinto and Beaumont

Name of Scenario: CaliBanBeauSanJacHemet

Submitting Cities for Which Census Tract Results Have Been Summarized:

- Banning (see Banning tab in Part 2 of LHMP)
- Beaumont (see Beaumont tab in Part 2 of LHMP)
- Calimesa (see Calimesa tab in Part 2 of LHMP)
- Hemet (see Hemet tab in Part 2 of LHMP)
- San Jacinto (see San Jacinto tab in Part 2 of LHMP)

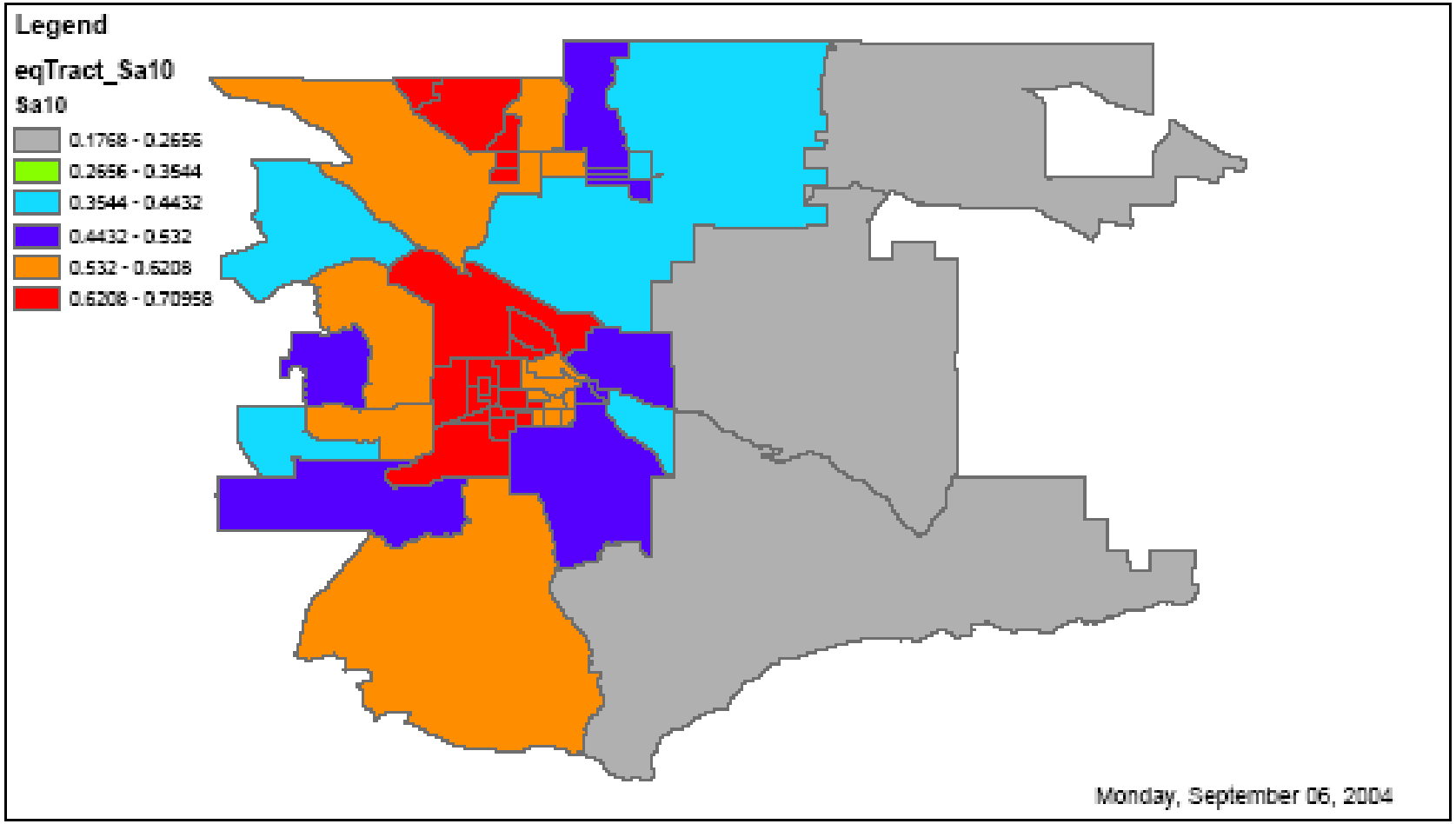
Other Jurisdictions Included in Simulation Region (results from software not specific to this jurisdictional level):

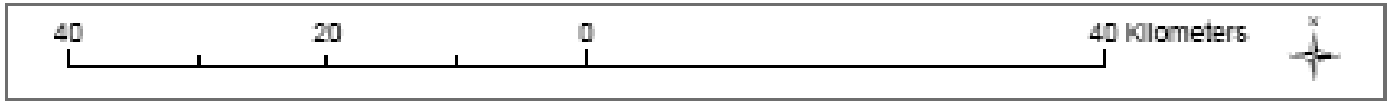
- Soboba Band of Luiseno Indians
- Hemet Valley Medical Center
- Idyllwild Water District
- San Jacinto Unified School District
- Banning Unified School District
- Beaumont Unified School District
- Hemet Unified School District
- San Gorgonio Memorial Hospital
- San Gorgonio Pass Water Agency/Sanitation District

The map on the following page shows relative ground motion in Scenario 5 for the simulated earthquake. “Red” represents the most severe ground motion at one extreme and “grey” represents the least severe ground motion at the other extreme.

No unincorporated areas were analyzed in this scenario.

Study Region : CaliBanBeauSanJacHemet
Hazard Scenario : M7.1 on San Jacinto Fault





Scenario 6

Simulation: M7.1 earthquake on the San Andreas Fault, epicenter northeast of Cathedral City

Name of Scenario: DHSPalmSCatRancho

Submitting Cities for Which Census Tract Results Have Been Summarized:

- Desert Hot Springs (see Desert Hot Springs tab in Part 2 of LHMP)
- Cathedral City (see Cathedral City tab in Part 2 of LHMP)
- Palm Springs (see Palm Springs tab in Part 2 of LHMP)
- Rancho Mirage (see Rancho Mirage tab in Part 2 of LHMP)

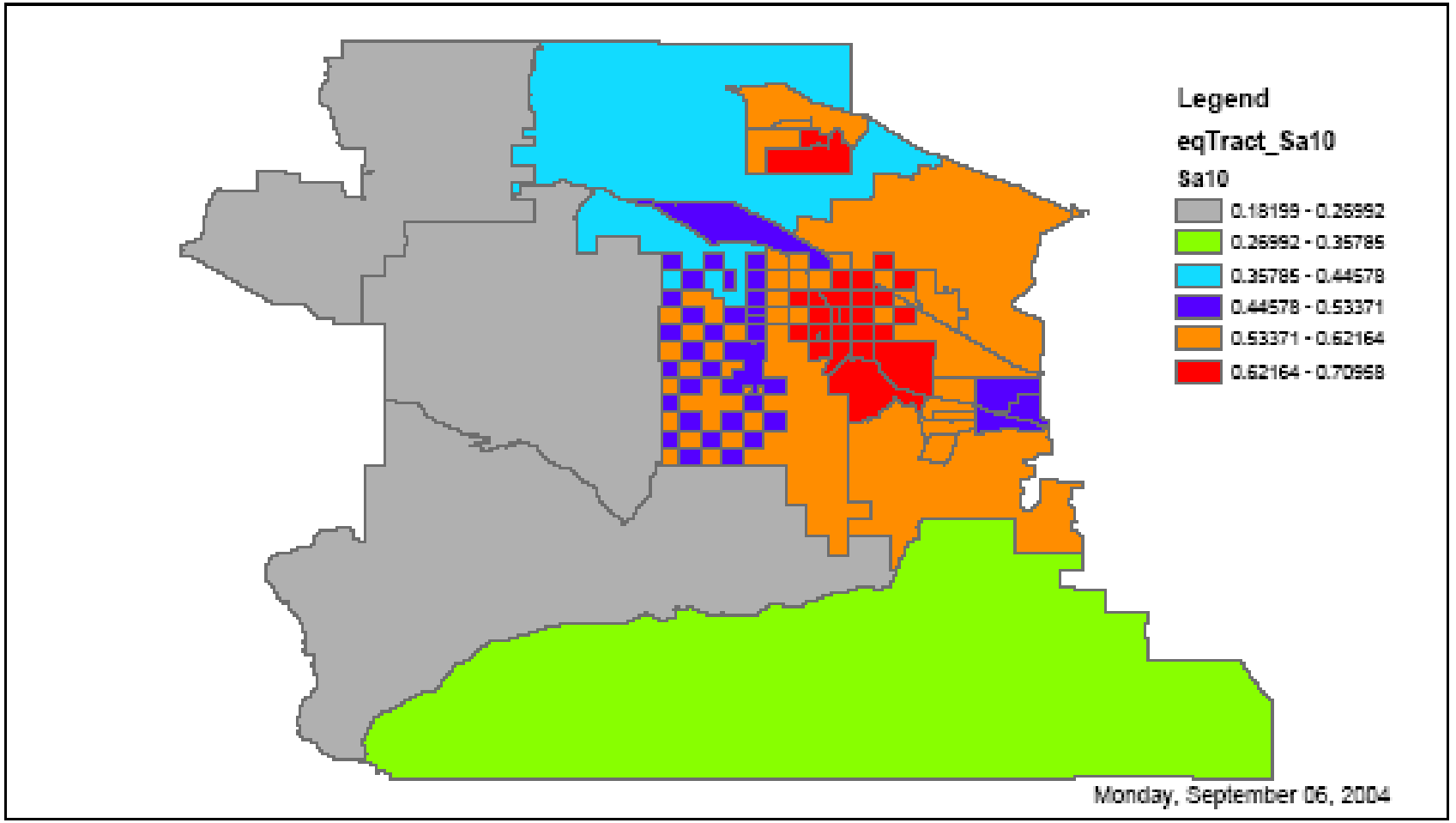
Other Jurisdictions Included in Simulation Region (results from software not specific to this jurisdictional level):

- Desert Regional Medical Center
- Mission Springs Water District

The map on the following page shows relative ground motion in Scenario 6 for the simulated earthquake. “Red” represents the most severe ground motion at one extreme and “grey” represents the least severe ground motion at the other extreme.

No unincorporated areas were analyzed in this scenario.

Study Region : DHSPalmSCatRancho
Hazard Scenario : M7.1 on San Andreas NE of Cat City



Scenario 7

Simulation: M7.1 earthquake on the San Andreas Fault, epicenter northeast of Coachella

Name of Scenario: PalmDIndianIndioQuintaCoach

Submitting Cities and Unincorporated Areas for Which Census Tract Results Have Been Summarized:

- Coachella (see Coachella tab in Part 2 of LHMP)
- Indian Wells (see Indian Wells tab in Part 2 of LHMP)
- Indio (see Indio tab in Part 2 of LHMP)
- La Quinta (see La Quinta tab in Part 2 of LHMP)
- Palm Desert (see Palm Desert tab in Part 2 of LHMP)
- Thermal

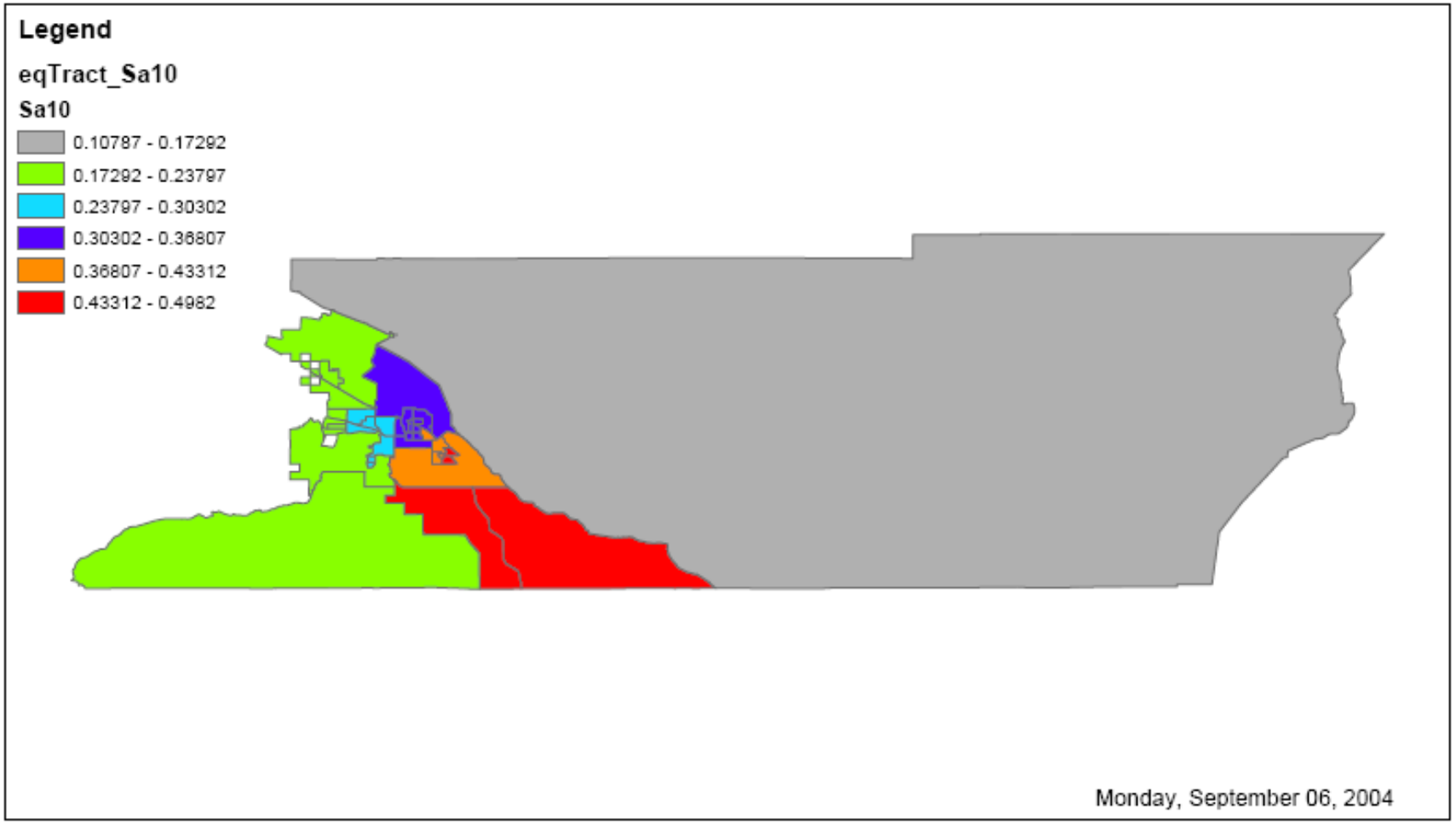
Other Jurisdictions Included in Simulation Region (results from software not specific to this jurisdictional level):

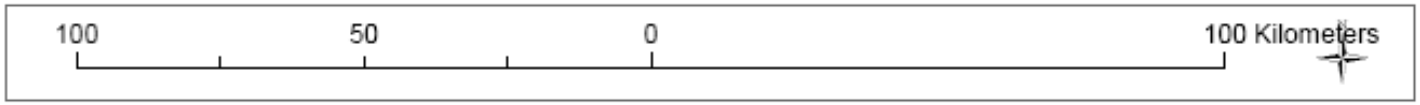
- JFK Memorial Hospital
- Valley Sanitary District

The map on the following page shows relative ground motion in Scenario 7 for the simulated earthquake. “Red” represents the most severe ground motion at one extreme and “grey” represents the least severe ground motion at the other extreme.

Summarized results for the one unincorporated area listed above follow the map.

Study Region : PalmDIndianIndioQuintaCoach
Hazard Scenario : M7.1 on San Andreas NE of Coachella





SUMMARIZED HAZUS RESULTS

Jurisdiction: Thermal

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$223.02
Non-Structural Damage	$722.56
Building Damage	$945.58
Contents Damage	$148.54
Inventory Loss	$1.13
Relocation Cost	$5.12
Income Loss	$4.16
Rental Income Loss	$21.05
Wage Loss	$8.90
Total Loss	$1,134.48

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Thermal

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Thermal

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Scenario 8

Simulation: M7.1 earthquake on the San Andreas Fault, epicenter northeast of Coachella

Name of Scenario: BlytheDesertArea

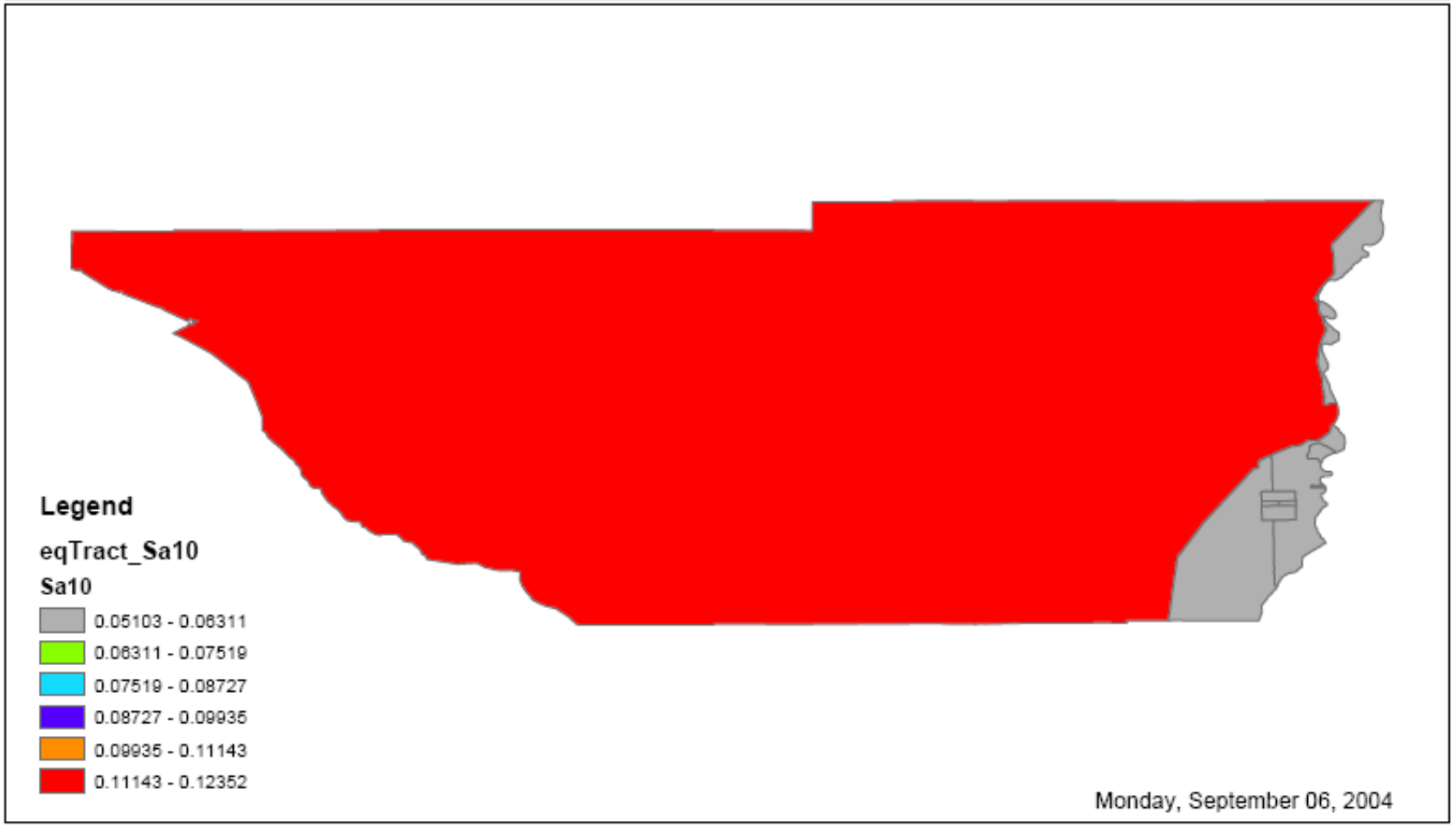
Submitting Cities and Unincorporated Areas for Which Census Tract Results Have Been Summarized:

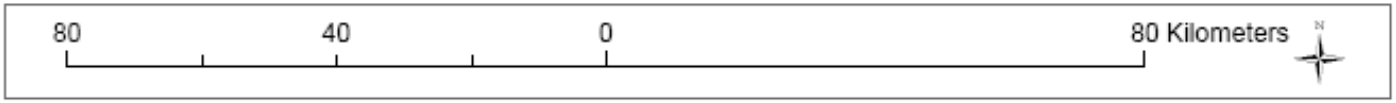
- Blythe (see Blythe tab in Part 2 of LHMP)
- Desert Center

The map on the following page shows relative ground motion in Scenario 8 for the simulated earthquake. "Red" represents the most severe ground motion at one extreme and "grey" represents the least severe ground motion at the other extreme. Note that the map depicts *relative differences* between census tracts and, in this case, the desert area includes one very large census tract. The red does *not* mean that the entire desert area moves violently in the scenario. It simply means that relative to the other census tracts on the map (which are all grey), the census tract in the desert area is affected substantially more.

Summarized results for the one unincorporated area listed above follow the map.

Study Region : BlytheDesertArea
Hazard Scenario : M7.1 on San Andreas Fault near Coachella





SUMMARIZED HAZUS RESULTS

Jurisdiction: Desert Center

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$117.02
Non-Structural Damage	$507.13
Building Damage	$624.16
Contents Damage	$114.57
Inventory Loss	$0.38
Relocation Cost	$3.38
Income Loss	$4.22
Rental Income Loss	$18.83
Wage Loss	$3.85
Total Loss	$769.38

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Desert Center

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: Desert Center

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hazard Mitigation Goals and Strategies

Comprehensive hazard mitigation programs include the identification and mapping of hazards, prudent planning and enforcement of building codes, and expedient retrofitting and rehabilitation of weak structures to reduce the scope of an earthquake disaster. The Riverside County Safety Element of the Riverside County General Plan enumerates a number of policies intended to minimize the impact of earthquakes on Riverside County's citizens, property, and economy.

The Riverside County General Plan, adopted in October 2003, includes the following recommendations:

1. Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies:

    a. Require geologic studies or analyses for critical structures, and lifeline, high-occupancy, schools, and high-risk structures, within 0.5 miles of all quaternary to historic faults shown on the Earthquake Fault Studies Zones map.
    b. Require geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented. The County may require geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.
    c. Require that lifelines be designed to resist, without failure, their crossing of a fault, should fault rupture occur.
    d. Support efforts by the California Department of Conservation, Division of Mining and Geology to develop geologic and engineering solutions in areas of disseminated ground deformation due to faulting, in those areas where a through-going fault cannot be reliably located.
    e. Encourage and support efforts by the geologic research community to define better the locations and risks of County faults. Such efforts could include data sharing and database development with regional entities, other local governments, private organizations, utility agencies or companies, and local universities.

2. Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement as part of the environmental and development review process, for any structure proposed for human occupancy, and any structure whose damage would cause harm.

3. Require that a State-licensed professional investigate the potential for liquefaction in areas designated as underlain by "Susceptible Sediments" and "Shallow Ground Water" for all general construction projects.

4. Require that a State-licensed professional investigate the potential for liquefaction in areas identified as underlain by "Susceptible Sediments" for all proposed critical facilities projects.

5. Require that engineered slopes be designed to resist seismically induced failure. For lower-risk projects, slope design could be based on pseudo-static stability analyses using soil engineering parameters that are established on a site-specific basis. For higher-risk projects, the stability analyses should factor in the intensity of expected ground shaking, using a Newmark-type deformation analysis.

6. Require that cut and fill transition lots be over-excavated to mitigate the potential of seismically-induced differential settlement.

7. Require a 100% maximum variation of fill depths beneath structures to mitigate the potential of seismically-induced differential settlement.

8. Encourage research into new foundation design systems that better resist the County's climatic, geotechnical, and geological conditions.

Hazard: Extreme Weather

County Severity Rating		County Probability Rating	
• Drought	3	• Drought	3
• Severe Wind Event	3	• Severe Wind Event	3
• Extreme Summer/ Winter Weather:	2	• Extreme Summer/ Winter Weather:	4

OA Jurisdictions Affected by Extreme Weather

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Home Gardens County Water District
- Idyllwild Water District
- Lake Elsinore Unified School District
- Lee Lake Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital

- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

Extreme weather hazards in Riverside County are:

1. Drought
2. Windstorms
3. Extreme summer heat
4. Lighting Storms
5. Tornado

Each of these hazards will be discussed separately in this section.

Riverside County's weather has a history of extremes. There are basically three weather regions in the county, each with its own type of weather extreme and each with a different impact on the County. In some cases, the high temperatures in the desert are harmful to the public, but beneficial to agriculture. In other cases, a steady rainfall that raises the water table can be good for the County, yet too much rain will cause flooding and a disruption in the product of agricultural goods.

Weather Index and Historical Weather Events

The weather table below shows Riverside County broken down into three regions. These three regions represent the general topographical areas in the county.

TABLE OF THE WEATHER AVERAGES BY REGION FOR LAST 20 YEARS

City/Area	Average Yearly Highest Temperature °F	Average High °F	Average Yearly Lowest Temperature °F	Average Low °F	Average Rainfall	Average Snow
DESERT REGION						
Blythe	108	88	33	55	3.8	
Thermal	110	88	38	56	2.95	
Indio	107	89	39	58	3.1	
Palm Springs	108	88	42	56	5.5	
MOUNTAIN REGION						
Idyllwild	84	67	28	37	25	39
Beaumont	90	77	35	47	17	2
VALLEY REGION						
Lake Elsinore	98	80	36	47	11.09	11
Sun City	98	80	36	46	11	
San Jacinto	99	80	33	44	11.4	0.2
Corona/Riverside	92	79	39	49	10.3	

Western Regional Climate Center 1974 - 2004

Weather Related Hospitalizations and Deaths 2000-2003

Excessive Heat	**Hospitalizations**				**Deaths**		
	Valley	Desert	Unknown	Total	Valley	Desert	Total
2000	14	20	1	35	1	1	2
2001	17	22	1	40	1	1	2
2002	15	24	3	42	0	0	0
2003	22	28	1	51	0	1	1
Heat Total				**168**			**5**

Excessive Cold	**Hospitalizations**				**Deaths**		
2000	3	1	0	4	0	0	0
2001	1	1	0	2	0	0	0
2002	3	1	0	4	2	0	2
2003	5	0	0	5	2	0	2
Cold Total				**15**			**4**

Lightning	**Hospitalizations**				**Deaths**		
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	1	0	1
Lightning Total				**0**			**1**

Compiled: Riverside County Department of Public Health, Epidemiology and Program Evaluation Branch

SSM:wrh 03/21/2005

WEATHER EVENTS HISTORY

WINTER STORMS

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Mountain Areas	3/4/2000	None	40 knots	$50,000	16	0	Winter Storm - damaged trees and power lines, a number of hypothermia victims	NCDC
Easter Riverside County	8/29/2000	None		Not Avail.	0	0	Severe thunderstorm, flash flood, hail, heavy rain.	Co. Rpts.
Mountain Areas	1/10/2001	None		$60,000	0	0	Winter Storm - damaged trees, knocked out power, a number of hypothermia victims	NCDC
Mountain Areas	2/11/2001	None		$150,000	31	0	Winter Storm - heavy snow	NCDC
Mountain Areas	2/26/2001	None		$175,000	0	0	Winter Storm - heavy snow	NCDC
Beaumont	9/2/2001	None		$35,000	4	0	Thunderstorms, wind, hail - remnants of Hurricane Flossie	NCDC
La Quinta	9/30/2001	None		$50,000	0	0	Thunderstorms, heavy blowing dust, winds -	NCDC
Murrieta	11/24/2001	None		$40,000	0	0	Thunderstorms, wind, hail, power lines blown down	NCDC
Mountain Areas	3/17/2002	None		Not Avail.	32	0	Winter Storm	NCDC
Riverside County	1/14/2003	None		Not Avail.	0	0	Winter Storm	NCDC
Mountain Areas	2/25/2003	None		$200,000	0	0	Winter Storm - heavy snow	NCDC
Mountain Areas	4/14/2003	None	60 MPH	$53,000	0	0	Winter Storm - heavy snow, heavy rain in foothills	NCDC
Mountain Areas	2/21/2004	None		$50,000	0	0	Winter Storm - heavy snow, heavy rain in foothills	NCDC
La Quinta	9/11/2004	None	39 knots	$100,000	0	0	Thunderstorm	NCDC

* Estimates at time of incident NCDC: National Climatic Data Center

TORNADO

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Riverside County	4/6/1955	None	F0	Not Avail.	Not Avail.	Not Avail.	Tornado	NCDC
Riverside County	8/16/1973	None	F3	$25,000	Not Avail.	Not Avail.	Tornado	NCDC
Riverside County	7/20/1974	None	F1	$25,000	1	Not Avail.	Tornado	NCDC
Riverside County	1/20/1982	None	F0	Not Avail.	Not Avail.	Not Avail.	Tornado	NCDC
Riverside County	9/18/1985	None	F0	Not Avail.	Not Avail.	Not Avail.	Tornado	NCDC
Riverside County	3/20/1991	None	F0	Not Avail.	Not Avail.	Not Avail.	Tornado	NCDC
Val Vista	8/12/1994	None	F0	$10,000	Not Avail.	Not Avail.	Tornado	NCDC
Cabazon	12/22/1996	None	F1	Not Avail.	Not Avail.	Not Avail.	Tornado	NCDC
Homeland	5/13/1998	None	F0	Not Avail.	0	0	Tornado	NCDC

LIGHTENING

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Norco	3/3/2000	None		Not Avail.	3	0	Lightning Storm,	NCDC
Rancho Mirage	7/6/2001	None		$10,000	0	0	Lightning Storm,	NCDC
Romoland	7/30/2003	None		Not Avail.	1 Death	0	Lightning Storm	NCDC
Sage, Hemet	8/24/2003	None	34 MPH	$20,000	0	1	Lightning Storm, home set on fire by lightning strike	Co. Rpts & NCDC
Murrieta	8/13/2004	None		$50,000	0	1	Lightning Storm, home set on fire by lightning strike	NCDC

COLD

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Mountain Areas	1/28/2002	None		$230,000	1	0	Extreme Cold - record cold temperatures	Co. Rpts.
Mountain Areas	2/1/2002	None		$230,000	0	0	Extreme Cold - freeze damage	Co. Rpts.
Mountain Areas	11/2/2003	None		Not Avail.	4	0	Extreme Cold - hyperthermia victims	Co. Rpts.

WINDS

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Riverside County	12/14-18/1996	Local	96 knots	724820	5	Not Avail.	Santa Ana Winds - downed trees and power poles, semis overturned, windows blown out, property damage	NCDC
Riverside County	1/6/1997	None	86 knots	Not Avail.	4	0	Santa Ana Winds - downed trees and power poles, semis overturned, windows blown out, I-15 closed for more than six hours	NCDC
Riverside County	2/13/1997	None	74 knots	Not Avail.	1	0	Santa Ana Winds - downed trees and power poles, semis overturned, windows blown out, I-10 and I-15 closed for most of the day	NCDC
Riverside County	12/12/1997	None	83 knots	Not Avail.	2	0	Santa Ana Winds - downed trees and power poles, wide-spread power outages, semis overturned	NCDC
Riverside County	12/9/1998	None	81 knots	$1,100,000	24	1	Santa Ana Winds - downed trees and power poles, 180,000 customers without power, semis blown over	NCDC
Riverside County	12/15/1998	None	63 knots	$50,000	0	0	High winds	NCDC
Riverside County	2/11/1999	Local City of Beaumont	78 knots	$1,628,446	0	1,128	High winds damaged roofs, downed trees and power lines, and created a dense dust storm. Yards had 3" to 6" of silt. 1128 homes damaged. 27 vehicles.	Co Rpts. & NCDC
Riverside County	10/17/1999	None	82 knots	$30,000	0	0	High winds	Co Rpts. & NCDC
Riverside County	11/21/1999	None	74 knots	$190,000	1	0	Santa Ana Winds - downed trees and power poles,	Co Rpts. & NCDC
Riverside County	12/3/1999	None	104 knots	$210,000	0	2	Santa Ana Winds - downed trees and power poles, 2 elementary schools closed, blowing dust on roadways	Co Rpts. & NCDC
Riverside County	12/10/1999	None	55 knots	$50,000	1	0	Ana Winds - downed trees and power poles, blowing dust on roadways caused hazards	Co Rpts. & NCDC
Riverside County	12/21/1999	None	86 knots	$227,000	2	2	Santa Ana Winds - downed trees and power poles, wide-spread power and phone outages, large dust cloud reached 5,000 feet elevation	Co Rpts. & NCDC

Riverside County	1/5/2000	None	81 knots	$400,000	2	1	Santa Ana Winds - downed trees and power poles, semis blown over on I-10, I-15, I-215 and State Highway 60, blowing sand and dust	Co Rpts. & NCDC
Riverside County	3/20/2000	None	61 knots	$425,000	0	0	Santa Ana Winds - downed trees and power poles, blowing sand and dust	Co Rpts. & NCDC
Riverside County	12/26/2000	None	76 knots	$665,000	4	0	Santa Ana Winds - downed trees and power poles, blowing sand and dust, 9,000 homes without power	Co Rpts. & NCDC
Riverside County	12/7/2001	None	87 knots	$250,000	3	0	Santa Ana Winds - downed trees and power poles, blowing sand and dust, Interstates closed	Co Rpts. & NCDC
Riverside County	2/6/2001	None	60 knots	$250,000	0	0	Santa Ana Winds - downed trees and power poles, blowing sand and dust	Co Rpts. & NCDC
Riverside County	1/23/2002	None	61 knots	$190,000			High winds	Co Rpts. & NCDC
Riverside County	2/9/2002	None	89 knots	$9,800,000	2	0	Santa Ana Winds - downed trees and power poles, semis blown over on I-10, I-15, I-215, blowing sand and dust	Co Rpts. & NCDC
Riverside County	4/5/2002	Federal USDA	50 MPH	$8,500,000	0	0	Severe damage to avocado citrus industry due to sustained 50mph winds. Freezing weather down to 21 degrees.	Co Rpts. & NCDC
Riverside County	11/26/2002	None	70 knots	$290,000	0	0	High winds	Co Rpts. & NCDC
Riverside County - Mira Loma, Jurupa, Rubidoux, Pedley, Sky Country	1/6/2003	Federal-SBA Gubernatorial Local		$3,000,000	11	0	Road closures, downed trees and power lines. Semi-truck overturns. Power outages affecting 10,000. Fire	Co Rpts. & NCDC

RAINFALL

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Riverside County	2/10/2000	None		$10,000	1	0	Heavy Rain -	NCDC
Pine Cove	11/8/2002	None		Not Avail.	0	0	Heavy Rain	NCDC
Temecula	4/14/2003	None		Not Avail.	0	0	Heavy Rain	NCDC
Hemet	11/12/2003	None		Not Avail.	0	0	Heavy Rain	NCDC
Corona	3/2/2004	None		$30,000	0	0	Heavy Rain - minor flooding	NCDC
Indio	8/13/2004	None		Not Avail.	0	0	Heavy Rain	NCDC
Idyllwild	8/14/2004	None		Not Avail.	0	0	Heavy Rain	NCDC
Temecula	2/25/2005	None		$250,000	24	2	Heavy Rain and snow - Canyon Lake overflowed	NCDC

Drought

In general, drought is defined as an extended period–a season, a year, or several years–of deficient rainfall relative to the statistical multi-year average for a region. However, dozens of more specific drought definitions are used around the world that are defined according to the lack of rain over various time periods, or measured impacts such as reservoir levels or crop losses. Because of the various ways drought is measured, an objective drought definition has yet to be produced upon which everyone can agree. Droughts become severe if "wet seasons" pass without significant precipitation. Drought and extreme heat can cause shortages of water and food crops. Prolonged shortages of moisture can be enough of a drain on moisture reserves to seriously affect crops, livestock, forest and range lands, as well as hydro-electric, irrigation, and urban water supplies. Parched lands are more susceptible to wildfires during periods of drought. Droughts can actually result in later flooding. The vegetation dies without water, and as a result, even average rain can cause flooding.

Drought can be defined according to meteorological, hydrological, or agricultural criteria.

Meteorological drought is usually based on long-term precipitation departures from normal, but there is no consensus regarding the threshold of the deficit or the minimum duration of the lack of precipitation that make a dry spell an official drought.

Hydrological drought refers to deficiencies in surface and subsurface water supplies. It is measured as stream flow, and as lake, reservoir, and ground water levels.

Agricultural drought occurs when there is insufficient soil moisture to meet the needs of a particular crop at a particular time. A deficit of rainfall over cropped areas during critical periods of the growth cycle can result in destroyed or underdeveloped crops with greatly depleted yields. Agricultural drought is typically evident after meteorological drought but before a hydrological drought.

Socioeconomic drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. This may also be called a water management drought.

A sophisticated system for measuring drought was developed by National Weather Service meteorologist Wayne Palmer in 1965. Now called the Palmer Drought Severity Index (PDSI), it uses temperature and rainfall information in a formula to determine dryness and has become the semi-official drought index. The PDSI is most effective in determining long-term drought (several months) and is not as effective with short-term forecasts (a few weeks). It uses a value number of 0 as normal, with drought figures shown in terms of negative numbers; such as a - 2 for moderate drought , - 3 severe drought, and - 4 is extreme drought. In mid August 2000, sections of many western states were in the - 4 range must be defined not only in terms of below normal precipitation, but also in terms of duration. Occasional periods of below average precipitation will not seriously deplete moisture reserves.

Drought History

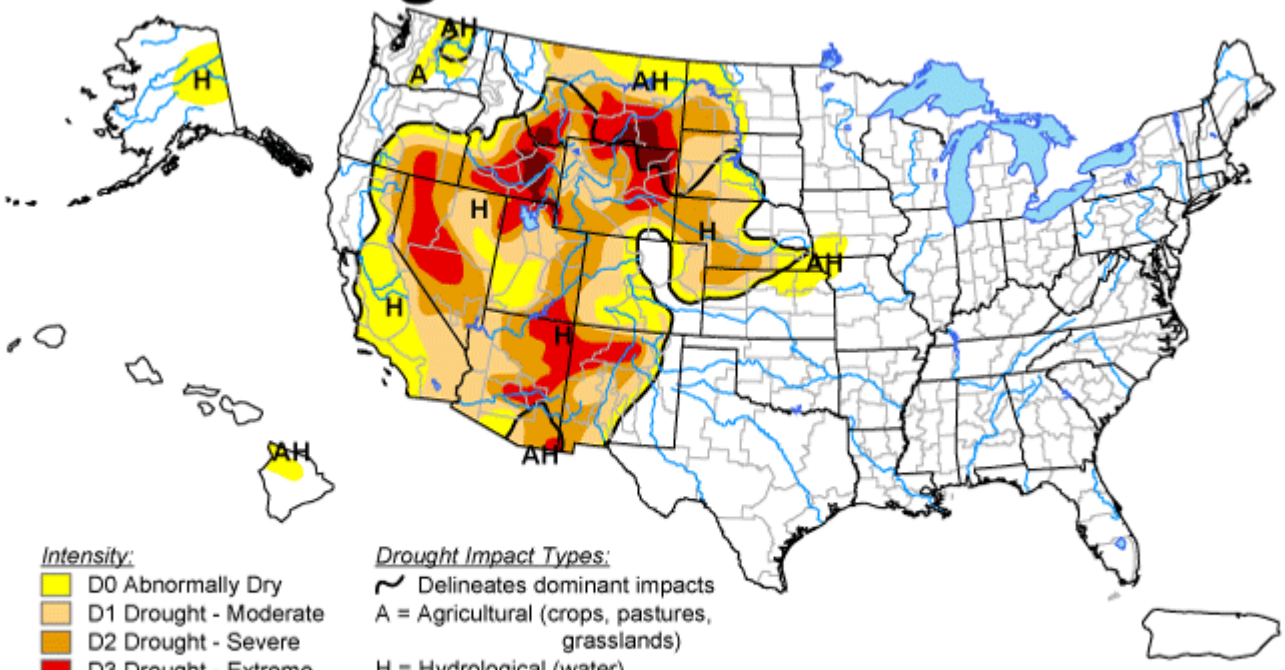
Riverside County chronically experiences drought cycles. The County is currently experiencing a drought cycle that has been four years in duration. The drought has caused stress on the County's ability to provide water to the community. In addition, the drought conditions have caused extensive weakening of trees in forested areas causing them to become highly vulnerable to disease and insect infestation. Many trees have weakened and died, creating a severe fire hazard. Furthermore, wildland brush areas are dry, presenting wildfire risk.

The following maps and charts provide a history of the rainfall in the State and identify the State and specifically the county as currently being in a drought cycle.

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Riverside County	6/1/2002	Federal-SBA USDA		$2,727,744	0	0	Crop Loss due to Drought	Co. Rpts.

U.S. Drought Monitor

December 7, 2004
Valid 7 a.m. EST



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

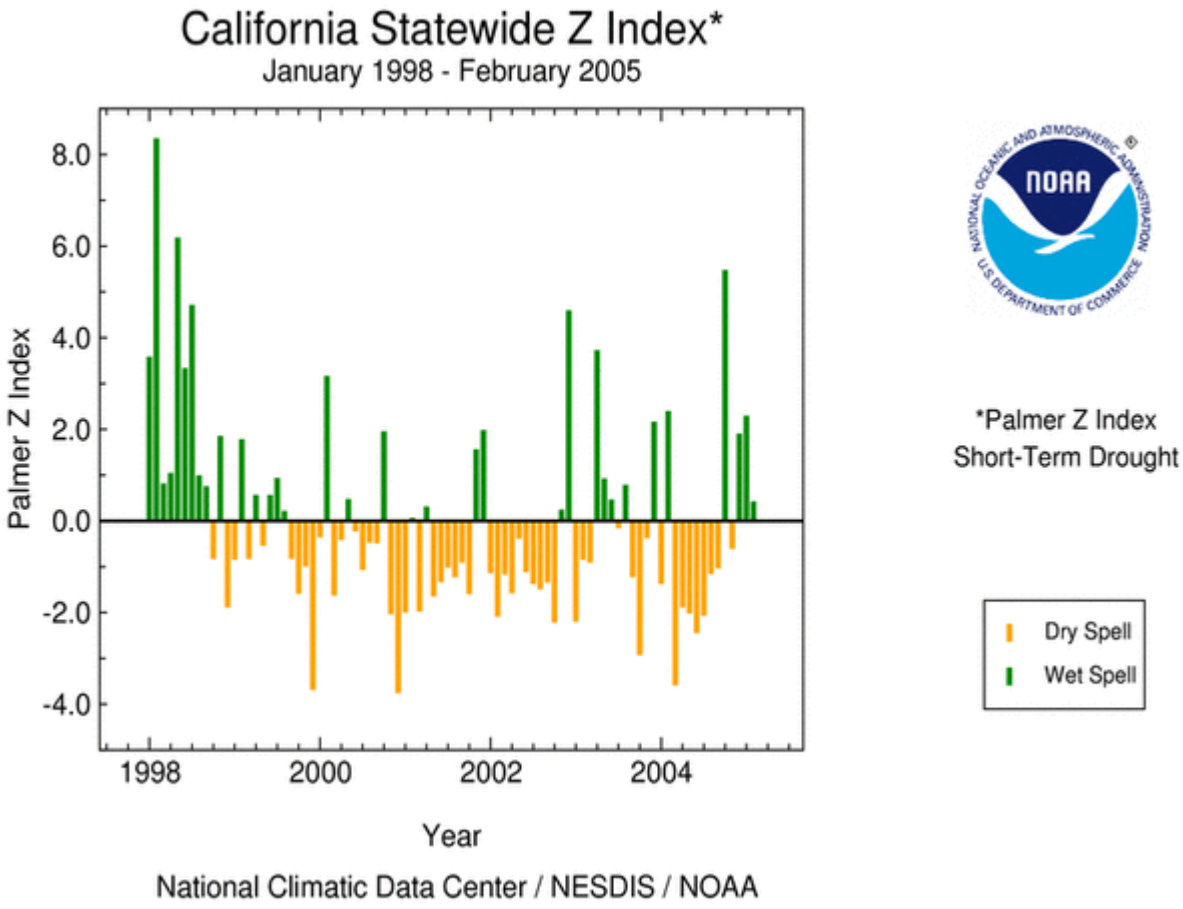
Drought Impact Types:
- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)
- (No type = Both impacts)

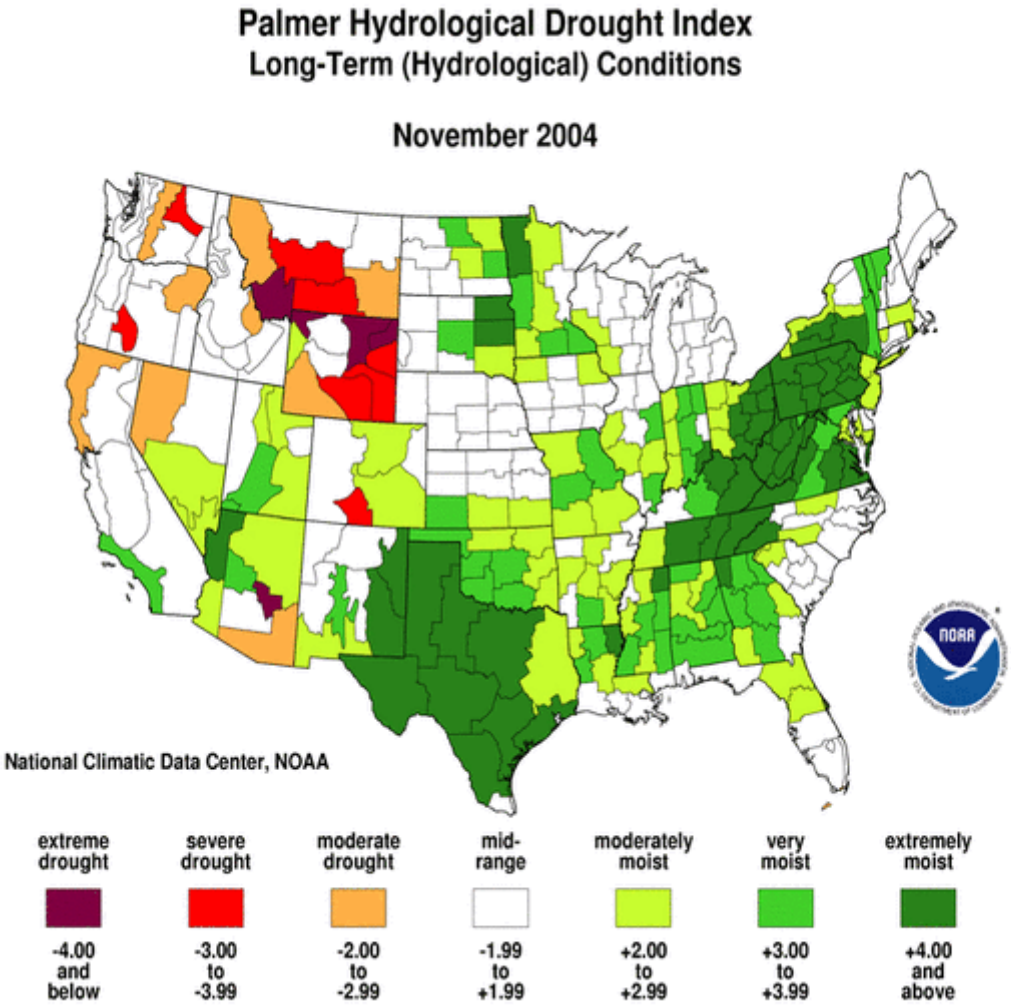
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

USDA National Drought Mitigation Center

Released Thursday, December 9, 2004
Author: Douglas Le Comte CPC/NOAA


California Statewide Z Index*
January 1998 - February 2005
Palmer Z Index
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
1998
2000
2002
2004
Year
National Climatic Data Center / NESDIS / NOAA
*Palmer Z Index
Short-Term Drought
Dry Spell
Wet Spell


Palmer Hydrological Drought Index
Long-Term (Hydrological) Conditions
November 2004
National Climatic Data Center, NOAA
NOAA
extreme drought
-4.00 and below
severe drought
-3.00 to -3.99
moderate drought
-2.00 to -2.99
mid-range
-1.99 to +1.99
moderately moist
+2.00 to +2.99
very moist
+3.00 to +3.99
extremely moist
+4.00 and above

Drought Risk Assessment

The Department of Water Resources produces a California Water Plan every five years that not only includes a statewide water budget but also regional watershed water budgets. These water budgets are based on California Department of Finance population projections, and indicate clearly that demand for water will exceed supply in 2020 whether or not a drought condition exists at that time. Most of the State's regions, except for the North Coast and San Francisco Bay Regions, experience average-year and drought-year shortages now, and are forecasted to experience increased shortages in 2020. The largest average-year shortages are forecasted for the South Coast Region, which heavily relies on imported water. Future average-year shortages in the South Coast Region reflect forecasted population growth plus lower Colorado River supplies as California reduces its use of Colorado River water to the State's basic apportionment.

Although a drought in and of itself is not a direct threat to property and life, the impact on the County's agricultural industry and home development can be monumental. The costs to the County for the current drought in terms of fire damage and forest management have been in the millions. This is a chronic problem for Riverside County and accounts for significant indirect costs, loss of property and threat to human life.

Drought Mitigation Goals, Polices, and Strategies

Goal - To help bridge the projected gap between water supply and demand in Riverside County in 2020, water conservation must be a priority. Following are water conservation policies that seek to manage existing supplies, by promoting the efficient use of water to the maximum extent possible, so that they can be maintained for future use.

Strategies

1. Encourage the installation of water-conserving systems such as dry wells and graywater systems, where feasible, especially in new developments. The installation of cisterns or infiltrators shall also be encouraged to capture rainwater from roofs for irrigation in the dry season and flood control during heavy storms.

2. Where feasible, decrease stormwater runoff by reducing pavement in development areas, and by design practices such as permeable parking bays and porous parking lots with bermed storage areas for rainwater detention.

3. Support and engage in educational outreach programs with other agencies that promote water conservation and wide-spread use of water-saving technologies.

4. Encourage continued agricultural water conservation and recommend the following practices where appropriate and feasible: lining canals, recovering tail water at the end of irrigated fields, and appropriate scheduling of water deliveries.

Extreme Weather

Extreme Summer Heat

Summer heat can be described as overly hot temperatures that are sustained to the extent that human and animal overexposure can cause heat illness and death. Heat illness is a major cause of preventable morbidity in regions characterized by high ambient temperatures. The table provided by County EMS shows the impact of heat on the public over the last three years. The data depicts the impact of heat on the County's EMS system. Figures are not available on those medical calls were the patient was treated and released by paramedics at the scene. Surprisingly, the table shows that the impact of high temperatures affects the Valley portion of the County as much as it does the Desert portion of the County.

Extreme Summer Heat Mitigation Efforts

The County, in cooperation with the desert cities, the American Red Cross, and the Economic Development Agency have established various "Cool Centers" in the County for people to use during extremely hot days.

The County has also adopted a plan to increase the number of older homes that have up graded insulation through a partnership with various community groups.

Extreme Winds

Santa Ana Winds have caused large amounts of damage and increased the fire damage level dramatically. The history table for Wind Events shows the high number of events that are directly attributed to Santa Ana Winds.

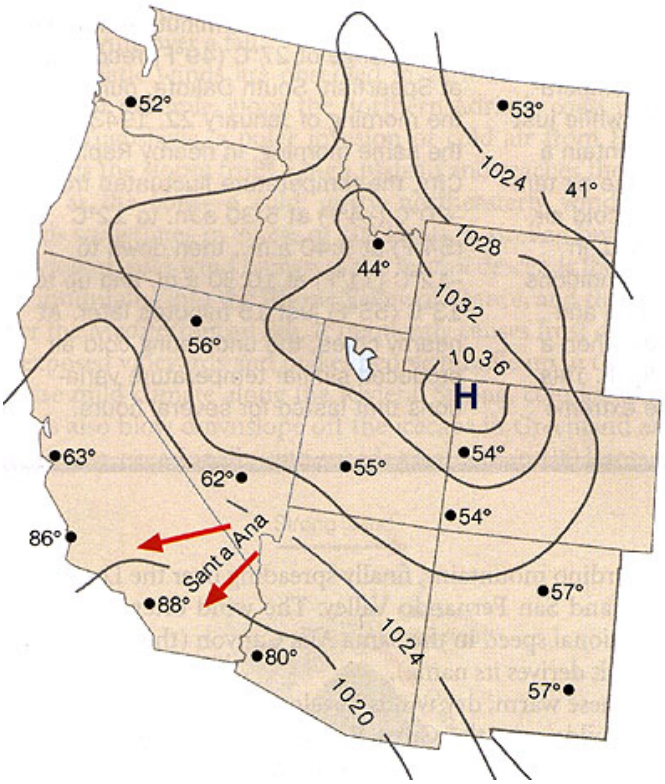
Santa Ana Winds are generally defined as warm, dry winds that blow from the east or northeast (offshore). These winds occur below the passes and canyons of the coastal ranges of Southern California and in the Los Angeles basin. Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon (the canyon from which it derives its name). Forecasters at the NWS in Oxnard and San Diego usually place speed minimums on these winds and reserve the use of "Santa Ana" for winds greater than 25 knots.

The complex topography of Southern California combined with various atmospheric conditions create numerous scenarios that may cause widespread or isolated Santa Ana events. Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra mountains and west of the Rocky mountains including most of Nevada and Utah). Clockwise circulation around the center of this high pressure area forces air downslope from the high plateau. The air warms as it descends toward the California coast at the rate of 5 degrees F per 1000 feet due to compressional heating. Thus, compressional heating provides the primary source of warming. The air is dry since it originated in the desert, and it dries out even more as it is heated.

Santa Ana winds commonly occur between October and February with December having the highest frequency of events. Summer events are rare. Wind speeds are typically north to east at 35 knots through and below passes and canyons with gusts to 50 knots. Stronger Santa Ana winds can have gusts greater than 60 knots over widespread areas and gusts greater than 100 knots in favored areas. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of a sea breeze. The sea breeze which typically blows onshore daily, can moderate the Santa Ana winds during the late morning and afternoon hours

The maps and photos below show the direction of the Santa Ana winds as they travel from the stable, high-pressure weather system called the Great Basin High through the canyons and towards the low pressure system off the Pacific. Riverside County is in the direct path of the ocean-bound Santa Ana winds.

Courtesy of NASA "Observatorium



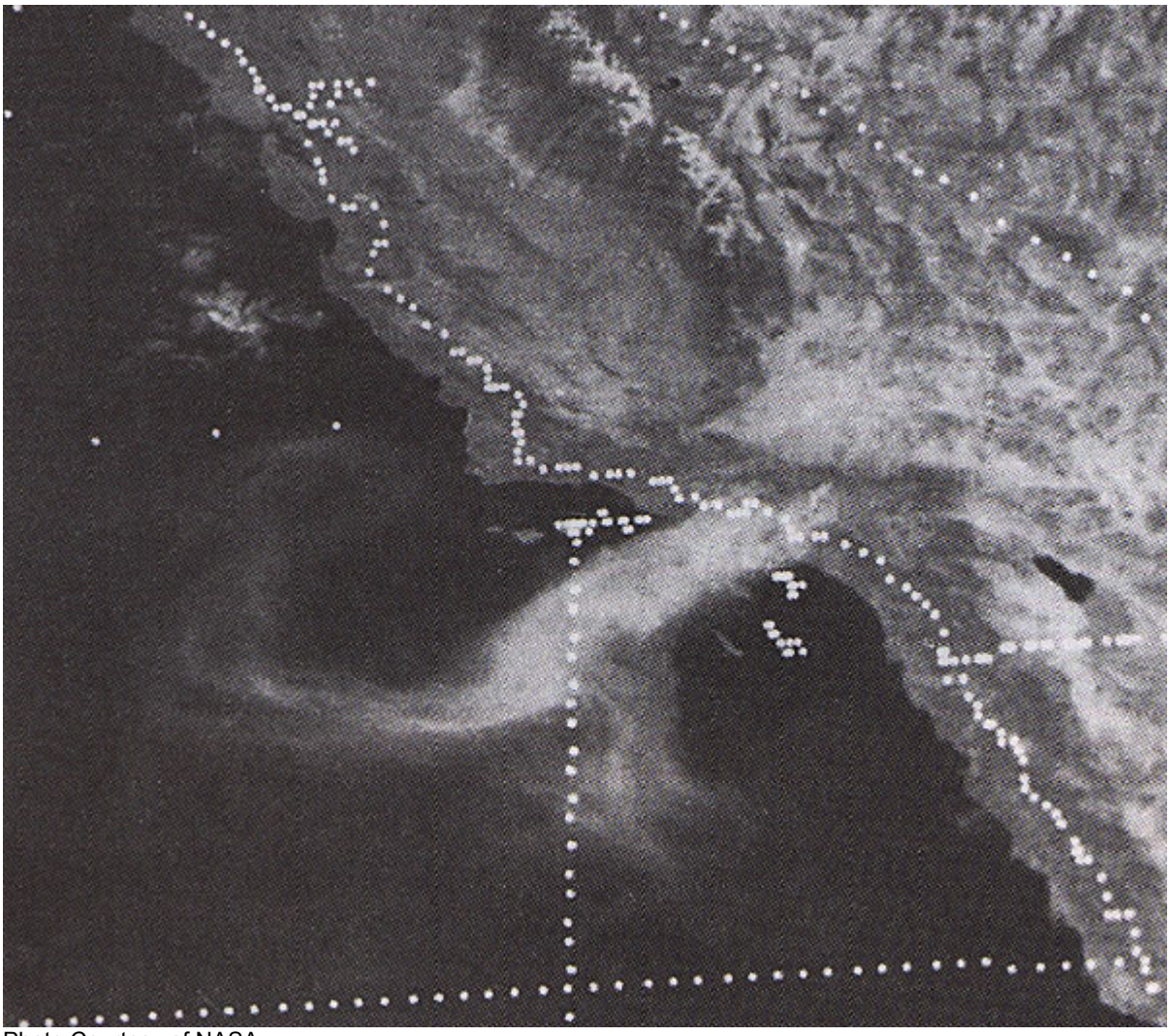


Photo Courtesy of NASA

Risk Assessment of Santa Ana Winds

The Santa Ana Winds pose several different types of threats.

1. By themselves, the winds pose a threat to the health of the people and to structures in the County.
   a. Health risks relate primarily to breathing problems caused by the blowing dust and plant pollen.
   b. Structural issues relating to the winds range from roofs being blown off to trees falling onto buildings.
2. The winds increase the threat and/or severity of fires in the urban areas
   a. Wind blown flames will spread more rapidly when pushed by high Santa Ana Winds.
3. Santa Ana Winds dry out brush and forest areas and increase the speed of a fire.
4. Santa Ana Winds cause power lines to arc, resulting in fires
5. Santa Ana Winds will either cause trees to fall on power lines or power lines to break, causing power outages.

Wind Erosion

In addition to the problems caused by the Santa Ana Winds, wind erosion is a serious environmental problem attracting global attention. Soil movement is initiated as a result of wind forces exerted against the surface of the ground. Dust particles in the air create major health problems. Atmospheric dust causes respiratory discomfort, may carry pathogens that cause eye infections and skin disorders, and reduces highway and air traffic visibility. Dust storms can cause additional problems. Buildings, fences, roads, crops, trees and shrubs can all be damaged by abrasive blowing soil.

Wind and wind-blown sand are an environmentally-limiting factor throughout much of Riverside County. Approximately 20 percent of the land area of Riverside County is vulnerable to "high" and "very high" wind erosion susceptibility. The Coachella Valley, the Santa Ana River Channel in northwestern Riverside County, and areas in and around the Cities of Hemet and San Jacinto are zones of high wind erosion susceptibility

Tornados and Microbursts

The history table demonstrates the high number of tornados and micro-bursts that have occurred in the County.

Tornados

Tornadoes are spawned when there is warm, moist air near the ground, cool air aloft, and winds that speed up and change direction. An obstruction, such as a house, in the path of the wind causes it to change direction. This change increases pressure on parts of the house, and the combination of increased pressures and fluctuating wind speeds creates stresses that frequently cause structural failures.

In order to measure the intensity and wind strength of a tornado, Dr. T. Theodore Fujita developed the Fujita Tornado Damage Scale. This scale compares the estimated wind velocity with the corresponding amount of suspected damage. The scale measures six classifications of tornadoes with increasing magnitude from an “F0” tornado to a “F6+” tornado.

The chart below depicts the Fujita Tornado Damage Scale:

Scale	Wind Estimate (mph)	Typical Damage
F0	< 73	**Light damage.** Some damage to chimneys and TV antennas; breaks twigs off trees; pushes over shallow-rooted trees.
F1	73-112	**Moderate damage.** Peels surface off roofs; windows broken; light trailer houses pushed or overturned; some trees uprooted or snapped; moving automobiles pushed off the road. 74 mph is the beginning of hurricane wind speed.
F2	113-157	**Considerable damage.** Roofs torn off frame houses leaving strong upright walls; weak buildings in rural areas demolished; trailer houses destroyed; large trees snapped or uprooted; railroad boxcars pushed over; light object missiles generated; cars blown off highway.
F3	158-206	**Severe damage.** Roofs and some walls torn off frame houses; some rural buildings completely demolished; trains overturned; steel-framed hangar-warehouse-type structures torn; cars lifted off the ground; most trees in a forest uprooted snapped, or leveled.
F4	207-260	**Devastating damage.** Whole frame houses leveled, leaving piles of debris; steel structures badly damaged; trees debarked by small flying debris; cars and trains thrown some distances or rolled considerable distances; large missiles generated.
F5	261-318	**Incredible damage.** Whole frame houses tossed off foundations; steel-reinforced concrete structures badly damaged; automobile-sized missiles generated; trees debarked; incredible phenomena can occur.
F6-F12	319 to sonic	**Inconceivable damage.** Should a tornado with the maximum wind speed in excess of F5 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc. will create serious secondary damage on structures.
Source: http://weather.latimes.com/tornadoFAQ.asp		

Microbursts

Unlike tornados, microbursts are strong, damaging winds that strike the ground and often give the impression a tornado has struck. They frequently occur during intense thunderstorms. The origin of a microburst is downward moving air from a thunderstorm's core. But unlike a tornado, they affect only a rather small area.

University of Chicago storm researcher Dr Ted Fujita first coined the term “downburst” to describe strong, downdraft winds flowing out of a thunderstorm cell that he believed were responsible for the crash of Eastern Airlines Flight 66 in June of 1975.

A downburst is a straight-direction surface wind in excess of 39 mph caused by a small-scale, strong downdraft from the base of convective thundershowers and thunderstorms. In later investigations into the phenomena, he defined two sub-categories of downbursts: the larger macrobursts and small microbursts.

Macrobursts are downbursts with winds up to 117 mph that spread across a path greater than 2.5 miles wide at the surface and which last from 5 to 30 minutes. The microburst, on the other hand is confined to an even smaller area, less than 2.5 miles in diameter from the initial point of downdraft impact. An intense microburst can result in damaging winds near 270 km/hr (170 mph) and often last for less than five minutes.

> "Downbursts of all sizes descend from the upper regions of severe thunderstorms when the air accelerates downward through either exceptionally strong evaporative cooling or by very heavy rain which drags dry air down with it. When the rapidly descending air strikes the ground, it spreads outward in all directions, like a fast-running faucet stream hitting the sink bottom.
>
> When the microburst wind hits an object on the ground such as a house, garage or tree, it can flatten the buildings and strip limbs and branches from the tree. After striking the ground, the powerful outward running gust can wreak further havoc along its path. Damage associated with a microburst is often mistaken for the work of a tornado, particularly directly under the microburst. However, damage patterns away from the impact area are characteristic of straight-line winds rather than the twisted pattern of tornado damage."

Tornados, like those that occur every year in the Midwest and Southeast parts of the United States, are a rare phenomenon in most of California, with most tornado-like activity coming from micro-bursts.

High Winds Mitigation Efforts

One of the strongest and most widespread existing mitigation strategies pertains to tree clearance. Currently, California State Law requires utility companies to maintain specific clearances – depending on the type of voltage running through the line – between electrical power lines and all vegetation.

The California Public Resource Code establishes tree pruning regulations:

4293: Power Line Clearance Required

4292: Power Line Hazard Reduction

4291: Reduction of Fire Hazards Around Buildings

4171: Public Nuisances

The California Public Utilities Commission • General Order 95: Rule 35

In addition to these laws, Riverside County has established additional mitigation efforts. These are:

1. Require studies that address the potential of this hazard on proposed development within "High" and "Very High" wind erosion hazard zones as shown on the Wind Erosion Susceptibility Map.
2. Include a disclosure about wind erosion susceptibility on property title.
3. Require buildings be designed to resist wind loads.
4. Educate builders about the wind environment and encourage them to design projects accordingly.

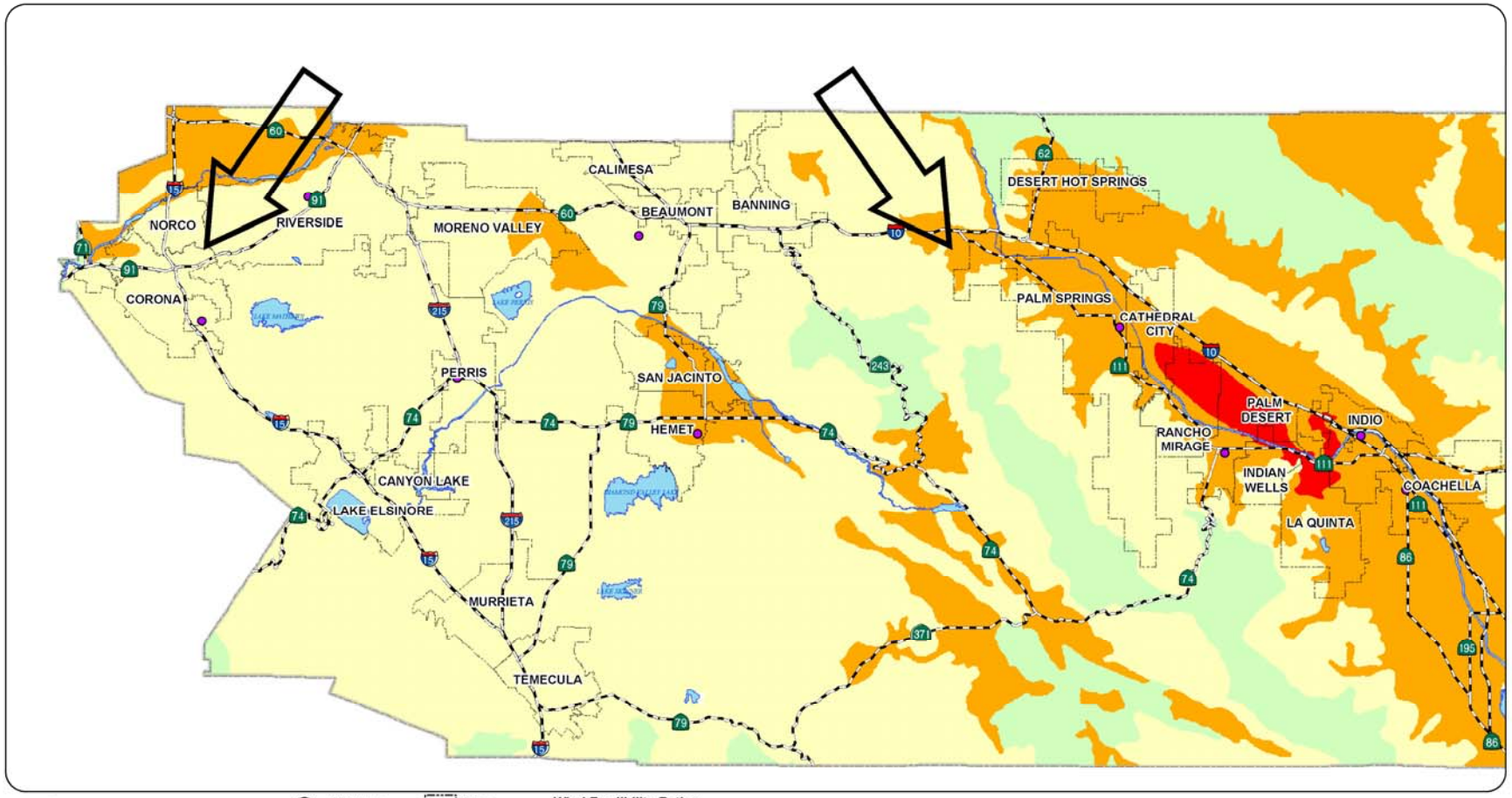
In addition to these laws, Riverside County has adopted the following mitigation strategies:

1. Require studies that address the potential of this hazard on proposed development within "High" and "Very High" wind erosion hazard zones as shown on the Wind Erosion Susceptibility Map.
2. Include a disclosure about wind erosion susceptibility on property title.
3. Require buildings to be designed to resist wind loads.
4. Educate builders about the wind environment and encourage them to design projects accordingly.
5. Create additional alerts levels with the National Weather Service.
6. Train additional Weather Spotters for use during high wind events.

The maps on the following two pages depict wind erosion risks for Western Riverside County and Eastern Riverside County, respectively.

Western Riverside County

Wind Erosion Risks

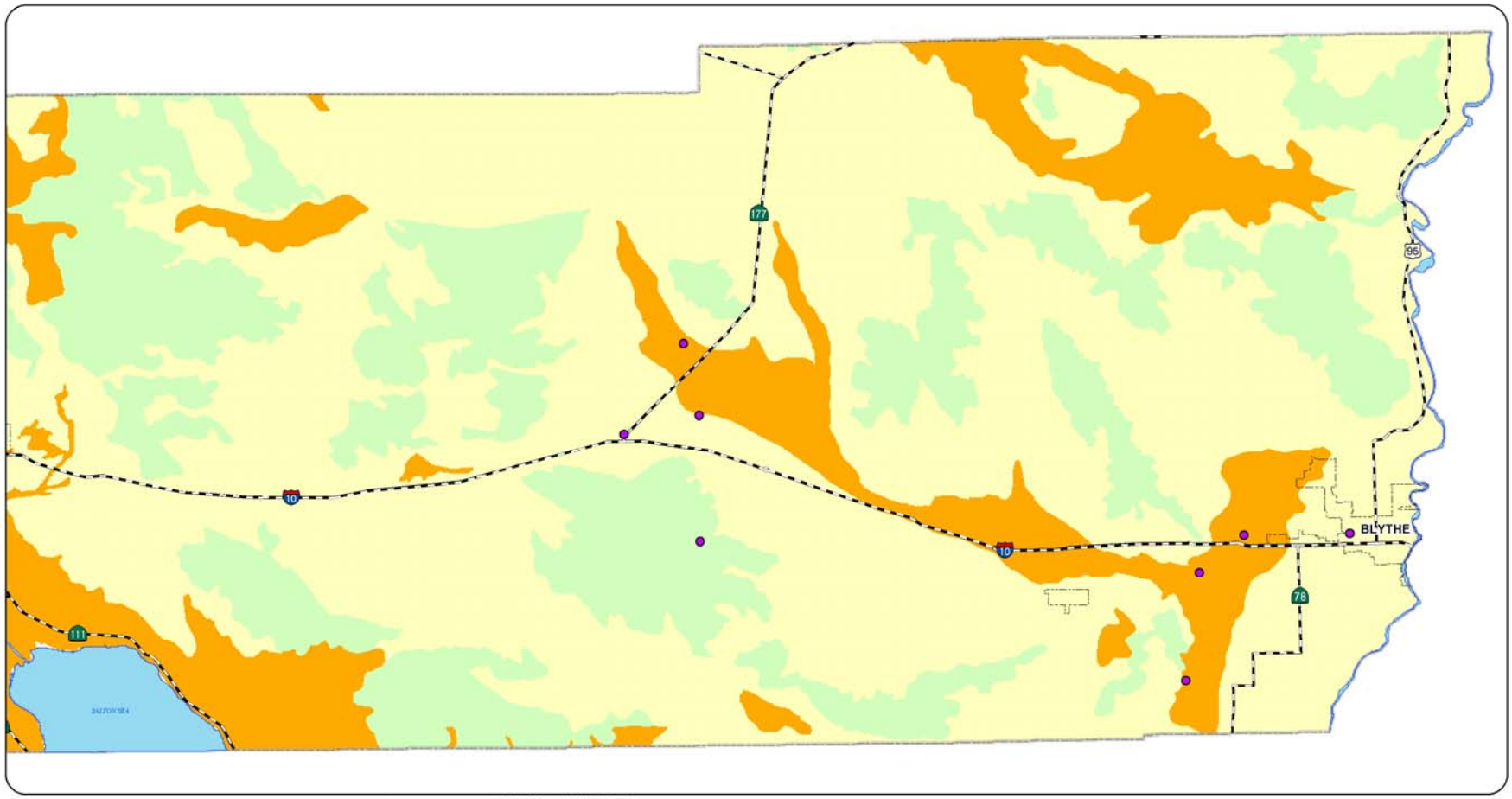


Created by: Janice Nollar
Source: County of Riverside, Earth Consultants International 2001

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Eastern Riverside County

Wind Erosion Risks



Weather Stations
Highways
Cities
Waterbodies
County Boundary

Wind Erodibility Rating

Very High
High
Moderate
Low

5 2.5 0 5 10 Miles

N

Created by: Janice Nollar
Source: County of Riverside, Earth Consultants International 2001

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

This map:\\GIS\Transfer\Nollar\special_projects\eoc\hazard_maps\wind_erosion_map2_east.mxd\was produced on 8/18/2004 at 10:24:03 AM

Hazard: Landslides

County Severity Rating : 2	County Probability Rating: 3

OA Jurisdictions Affected by Landslides

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Calimesa
- City of Canyon Lake
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Temecula
- Home Gardens County Water District
- Idyllwild Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

A landslide is a geologic hazard where the force of gravity combines with other factors to cause earth material to move or slide down an incline. Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly. Slopes with the greatest potential for sliding are between 34 degrees and 37 degrees. Although steep slopes are commonly present where landslides occur, it is not necessary for the slopes to be long.

Landslides, rockfalls, and debris flows occur continuously on all slopes; some processes act very slowly, while others occur very suddenly, often with disastrous results. As human populations expand over more of the land surface, these processes become an increasing concern.

There are four categories of active and dormant landslides. They include debris slides, translational/rotational slides, earth flows, and debris flows and torrent tracks. Debris slide amphitheater and slopes and inner gorges are not technically landslides, but features formed by landslides processes. In some places, complex land sliding causes irregular ground surfaces. Generally, on land slide maps, such areas are depicted as disrupted ground or areas of extreme, high, moderate, and low relative stability.

The geologic setting of southern California locally is conducive to slope failures and slope-failure deposits (landslides) that can be a hazard to human life and property. These hazards are created when geologic materials are displaced down a topographic slope under the influence of gravity. Factors that determine slope-failure occurrence include:

1. Slope angle
2. Geologic materials (substrate)
3. Climatic conditions
4. Earthquake shaking
5. Debris Flows

Sudden "mudslides" gushing down rain-sodden slopes and gullies are widely recognized by geologists as a hazard to human life and property. Most "mudslides" are localized in small gullies, threatening only those buildings in their direct path. They can burst out of the soil on almost any rain-saturated hill when rainfall is heavy enough. Often they occur without warning in localities where they have never been seen before.

There are predictable relationships between local geology and landslides, rockfalls and debris flows. Knowledge of these relationships can improve planning and reduce vulnerability. Slope stability is dependent on many factors and their interrelationships, including rock type, pore water pressure, slope steepness, and natural or man-made undercutting.

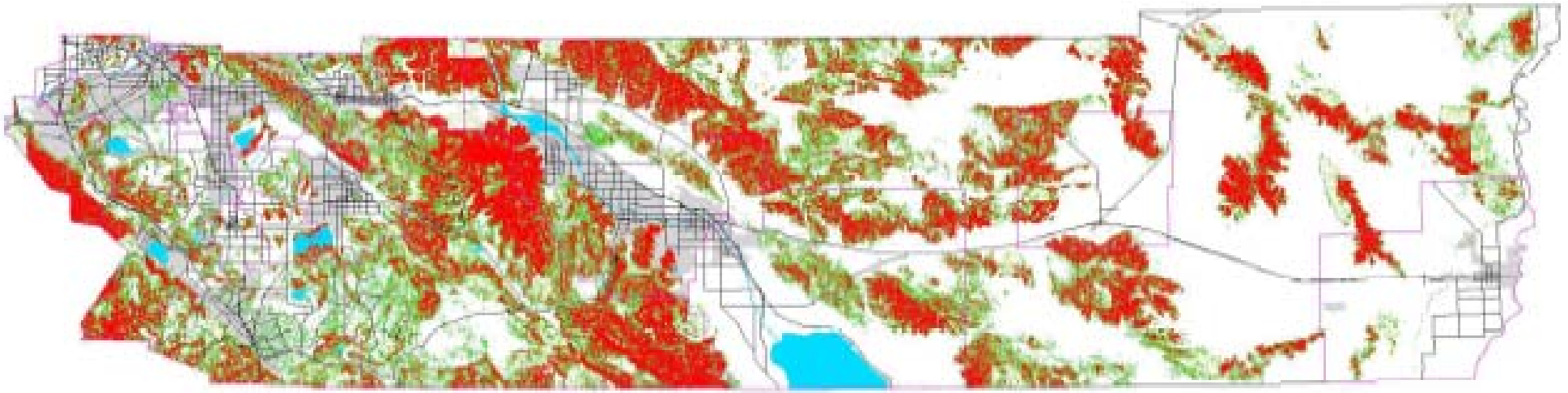
History

Riverside County has a history of landslides during seasons of high precipitation.

Landslide

Location	Date of Incident	Declaration	Intensity	Reported Damage	Number Injured	Structures Affected	Incident Description	Source
Lake Elsinore	3/1/1991	None	2 inches		0	4	Heavy Rainfall resulting in Mudslide affecting 4 homes	Co. Rpts.
Riverside County (Temecula - De Luz Canyon area)	2/6/1998	Federal		$12,629,191	0	125	3 Homes affected by Landslides in the DeLuz Canyon area	Co. Rpts.

* Estimates at time of incident NCDC: National Climatic Data Center



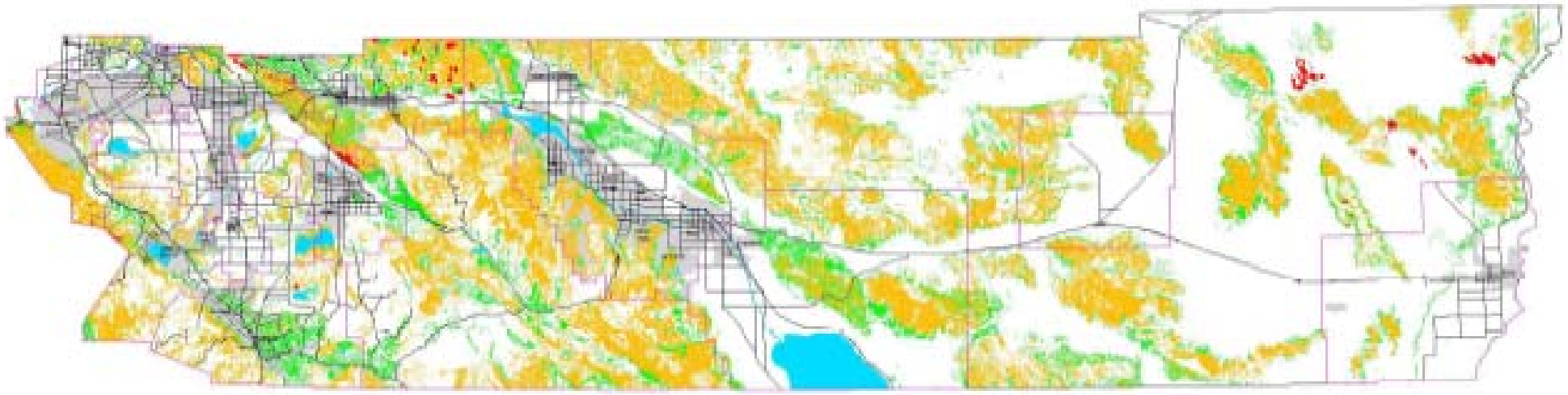
Slope Angle

- Less than 15%
- 15 - 25%
- 25 - 30%
- 30% and Greater

- Major Roads & Highways
- Area Plan Boundaries
- Cities

Figure 8-5

REGIONS UNDERLAIN BY STEEP SLOPES



Existing Landslides

High susceptibility to seismically induced landslides and rockfalls.

Low to locally moderate susceptibility to seismically induced landslides and rockfalls

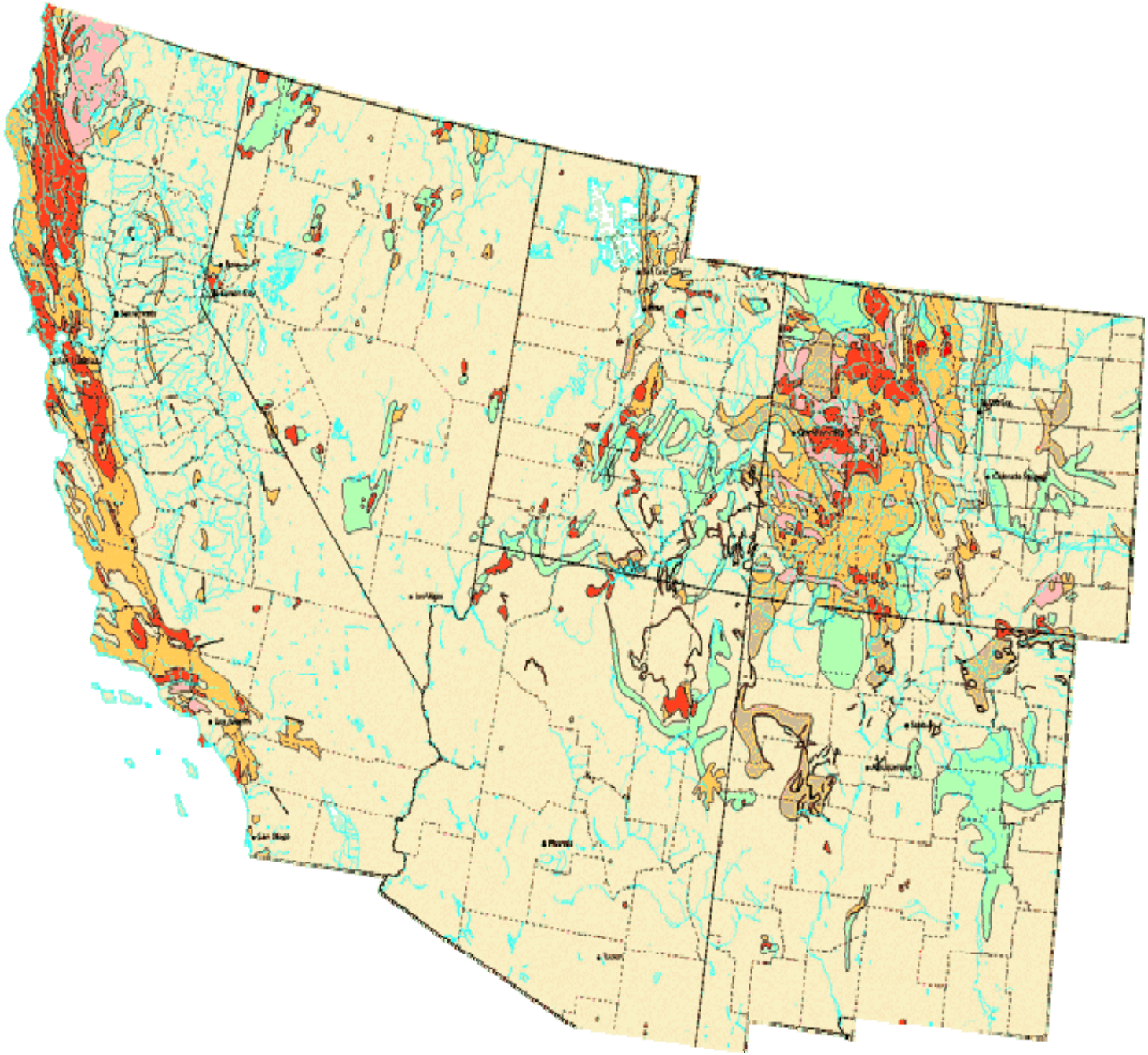
Major Roads & Highways

Area Plan Boundaries

Cities

Figure 5-4

EARTHQUAKE-INDUCED SLOPE INSTABILITY MAP



LANDSLIDE INCIDENCE

Low (less than 1.5% of area involved)
Moderate (1.5%-15% of area involved)

High (greater than 15% of area involved)

LANDSLIDE SUSCEPTIBILITY/INCIDENCE

Moderate susceptibility/low incidence
High susceptibility/low incidence

High susceptibility/moderate incidence

Susceptibility not indicated where same or lower than incidence. Susceptibility to landsliding was defined as the probable degree of response of [the areal] rocks and soils to natural or artificial cutting or loading of slopes, or to anomalously high precipitation. High, moderate, and low susceptibility are delimited by the same percentages used in classifying the incidence of landsliding. Some generalization was necessary at this scale, and several small areas of high incidence and susceptibility were slightly exaggerated.

Source - USGS

Risk Assessment

There is a continuing risk of landslides during seasons of high precipitation. In addition, earthquakes could also cause significant landslides. The County has a great deal of hilly and mountainous terrain increasing the likelihood of a landslide incident.

- **Effects on people and structures.** Landslides constitute a threat to property, road safety, and life. Small landslides would not pose a serious risk. However, there is a possibility that a severe landslide in a populated area could cause significant damage and risk to life.

- **Effects on infrastructure.** Landslides can cause disruptions in power supply pipelines, and County roads and highways.

- Effect on Critical Facilities. An initial review of known landslide locations and the location of critical facilities indicates that there does not appear to any facilities in close proximity to a LMZ.

- **Effects on agriculture.** Similar to the threats to people and structures, small landslides would not pose a serious risk. However, there is the possibility that a severe landslide could cause significant damage and risk of life to elements of the agricultural industry.

Risk Assessment Conclusion.

Landslides are a continuing risk in Riverside County, especially during seasons of high precipitation. History has shown also that many landslides occur in areas where landslides have not been predicted.

Relationship to Other Hazards – Cascading Effects

As noted, landslides can be the result of an earthquake or severe weather.

Mitigation Goals and Strategies

The County has created a Landslide Management Zone (LMZ) program that identifies areas of past or current landslide activity. The purpose of the program is to restrict usage of landslide prone areas. Although not graphically defined, the LMZ areas can be approximated by the above maps. As part of the LMZ program, areas that are considered to high landslide risk areas are placed into LMZ zones and those use for those areas becomes restricted. Most of the areas within LMZs of the County are designated for open space or rural development. LMZs identify regions susceptible to slope instability. This instability can include deep-seated landslides, rockfalls, soil slumps, and debris flows. Without the presence of extensive flood control devices, including large debris basins, the areas outlined by an LMZ may be subject to debris flow inundation. Most often, debris flow inundation results in roadways and improvements blocked by boulders.

1. For new development, the County Building and Safety Department enforces current building codes. Building codes establish specific site investigation requirements and define various standards by which hillside projects are assessed. Mitigation of existing and/or potential slope problems can be required when substantial improvements are proposed.
2. Require that stabilized landslides be provided with redundant drainage systems. Provisions for the maintenance of subdrains must be designed into the system.
3. Before issuance of building permits, require certification regarding the stability of the site against adverse effects of rain, earthquakes, and subsidence.
4. Require adequate mitigation of potential impacts from erosion, slope instability, or other hazardous slope conditions, or from loss of aesthetic resources for development occurring on slope and hillside areas.
5. During permit review, identify and encourage mitigation of onsite and offsite slope instability, debris flow, and erosion hazards on lots undergoing substantial improvements.
6. Require grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, as appropriate, in order to assure the adequate demonstration of a project's ability to mitigate the potential impacts of slope and erosion hazards and loss of native vegetation.
7. Support mitigation on existing public and private property located on unstable hillside areas, especially slopes with recurring failures where County property or public right-of-way is threatened from slope instability, or where considered appropriate and urgent by the County Engineer, Fire, or Sheriff Department.

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Hazard: Insect Infestation

County Severity Rating : 3	County Probability Rating: 4

OA Jurisdictions Affected by Insect Infestation

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Home Gardens County Water District
- Idyllwild Water District
- Lake Elsinore Unified School District
- Menifee Unified School District
- Moreno Valley Unified School District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

Insect infestation occurs when an undesirable type of insect inhabits an area in a manner that causes serious harm to: cash crops, livestock, or poultry; wild land trees, plants, or animals; or humans. Countless insects live on, in, and around plants, animals, and humans in all environments. Many are harmless, while others can cause fatal damage. Under some conditions, insects that have been present and relatively harmless can become hazardous. For example, severe drought conditions can weaken trees and make them more susceptible to destruction from insect attacks.

The major forms of insects are:

Chewing insects are defoliating insects. They generally strip plants of green matter such as leaves. Caterpillars and beetles make up the largest proportion of chewing insects. Under normal conditions, trees can usually bounce back from an attack of these defoliators, though repeat infestation will weaken a tree and can eventually kill it by starving it of energy.

Boring, or tunneling, insects cause damage by boring into the stem, roots, or twigs of a tree. Some lay eggs that then hatch and the larvae burrow more deeply into the wood, blocking off the water-conducting tissues of the tree. Boring insects generally feed on the vascular tissues of the tree. If the infestation is serious, the upper leaves are starved of nutrients and moisture, and the tree can die. Signs of borer infestation include entry/exit holes in the bark, small mounds of sawdust at the base, and sections of the crown wilting and dying.

Sucking insects do their damage by sucking out the liquid from leaves and twigs. Many sucking insects are relatively immobile, living on the outside of a plant and forming a hard protective outer coating while they feed on the plant's juices. Quite often they will excrete a sweet, sticky substance known as honeydew which contains unprocessed plant material. Honeydew can cause sooty mold to form on leaves and can become a nuisance. Signs of infestation include scaly formations on branches, dieback of leaves, and honeydew production.

In conjunction with the above outlined problems, insects can carry and spread disease to plants, animals, and people.

History

Riverside County has recently suffered from a Bark Beetle infestation. On March 7, 2003, Governor Gray Davis proclaimed a State of Emergency in Riverside, San Bernardino, and San Diego Counties where hundreds of thousands of trees were dead and dying after being weakened by drought and attacked by an infestation of bark beetles. Trees on more than 150,000 acres died and an estimated 75,000 residents were threatened by catastrophic wildfire, injury, and property damage from falling trees.

Parts of Riverside County (Moreno Valley, Indio, Rancho Mirage, Palm Desert, Bermuda Dunes, and Palm Springs) are under quarantine by state and federal officials to stop the spread of Red Imported Fire Ants. The quarantine limits the movement of plants and soil, and requires commercial nursery growers to take steps to ensure their products are free of Red Imported Fire Ants. It is believed that the infestations in Southern California may stem from the shipment of infested nursery stock from the southeastern states. Fruit orchard infestations in the agricultural regions of California's San Joaquin Valley have been traced back to colonies that hitchhiked on beehives shipped to California from Texas.

Africanized Honey Bees entered California in 1994, near Blythe. Until recently, they remained principally in Imperial County. In the last few years, they have spread to most of Southern California south of the San Gabriel mountains (i.e., Imperial, San Diego, Orange, Los Angeles, Riverside, and San Bernardino Counties), and have most recently been found in Kern County and Ventura County. The following table describes recent insect-related incidents.

In 1993-94 and 1990, Med-fly infestations damaged fruit Countywide. In 1991, a white fly infestation damaged melons, squash, and cucumbers Countywide. In 1999-2000, an insect-spread disease caused over $16 million damage to wine grapes in the west County area.

Risk Assessment

Riverside County has a demonstrated vulnerability to insect infestation. The climate makes it possible for insects to reproduce with little natural hindrance to their proliferation.

- **Effects on people and housing.** In the case of the Bark Beetle, the fire hazard it creates can cost loss of homes and life as demonstrated in the fall fires of 2003.

- **Effects on agriculture, and commercial and industrial structures.** If a given insect is particularly hazardous to forests, crops, or property, it can cost the County millions of dollars in lost revenue and eradication and replacement.

Risk Assessment Conclusion.

Insect infestation is an ongoing threat to agriculture and public health in Riverside County. The effects on people and property can be disastrous and costly.

Relationship to Other Hazards – Cascading Effects

The recent Bark Beetle infestation is a classic example of cascading effects. The insect killed hundreds of thousands of trees, increasing the wildfire hazard, which resulted in the unfortunate devastation of the fall fires of 2003.

Hazard Mitigation Goals and Strategies

This area of the Plan will be updated as part of the Plan's 2006 Maintenance Program

The County and two independent vector control special districts have aggressive programs utilizing:

- Sentinel flocks,
- Insect traps, and
- GIS mapping.

Hazard: Dam Failure

County Severity Rating : 3	County Probability Rating: 2

OA Jurisdictions Affected by Dam Failure

- Alvord Unified School District
- Cathedral City
- City of Blythe
- City of Canyon Lake
- City of Corona
- City of Hemet
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Palm Springs
- City of Perris
- City of Riverside
- City of San Jacinto
- City of Temecula
- Eastern Municipal Water District
- Hemet Valley Medical Center
- Home Gardens County Water District
- Inland Valley Medical Center
- Idyllwild Water District
- Kaiser Hospital, Riverside
- Lake Elsinore Unified School District
- Lee Lake Water District
- Menifee Unified School District
- Menifee Valley Community Hospital
- Moreno Valley Unified School District
- Murrieta County Water District
- Parkview Community Hospital
- Rancho California Water District
- Rancho Springs Medical Center
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Regional Medical Center
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Jacinto Unified School District
- Soboba Band of Luiseno Indians
- Western Municipal Water District

Hazard Definition

A dam failure is the partial or complete collapse of an impoundment, with the associated downstream flooding. Flooding of the area below the dam may occur as the result of structural failure of the dam, overtopping, or a seiche. Dam failures are caused by natural and manmade conditions. The list of causes includes earthquake, erosion of the face or foundation, improper sitting, structural/design flaws, and prolonged rainfall and flooding. The primary danger associated with a dam failure is the swift, unpredictable flooding of those areas immediately downstream of the dam.

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There are three general types of dams: earth and rock fill, concrete arch or hydraulic fill, and concrete gravity. Each of these types of dams has different failure characteristics. The earth/rock fill dam will fail gradually due to erosion of the breach; a flood wave will build gradually to a peak and then decline until the reservoir is empty. A concrete arch or hydraulic fill dam will fail almost instantaneously; with a very rapid build-up to a peak and then a gradual decline. A concrete gravity dam will fail somewhere in between instantaneous and gradual, with corresponding build-up of flood wave.

History

Historically, Riverside County has not experienced any significant dam failure incidents, although there are several major dams in the County of both the earthen and steel reinforced concrete type.

Dam Inventory

Descriptions of the dams, their inundation impact on the County, and a delineation of response efforts are outlined in the Dam Inundation Impact Plan, maintained by Riverside County OES. The following two maps depict dam failure inundation zones in Western Riverside County. The first map includes locations of hospitals. The second map includes an overlay of Special Districts.

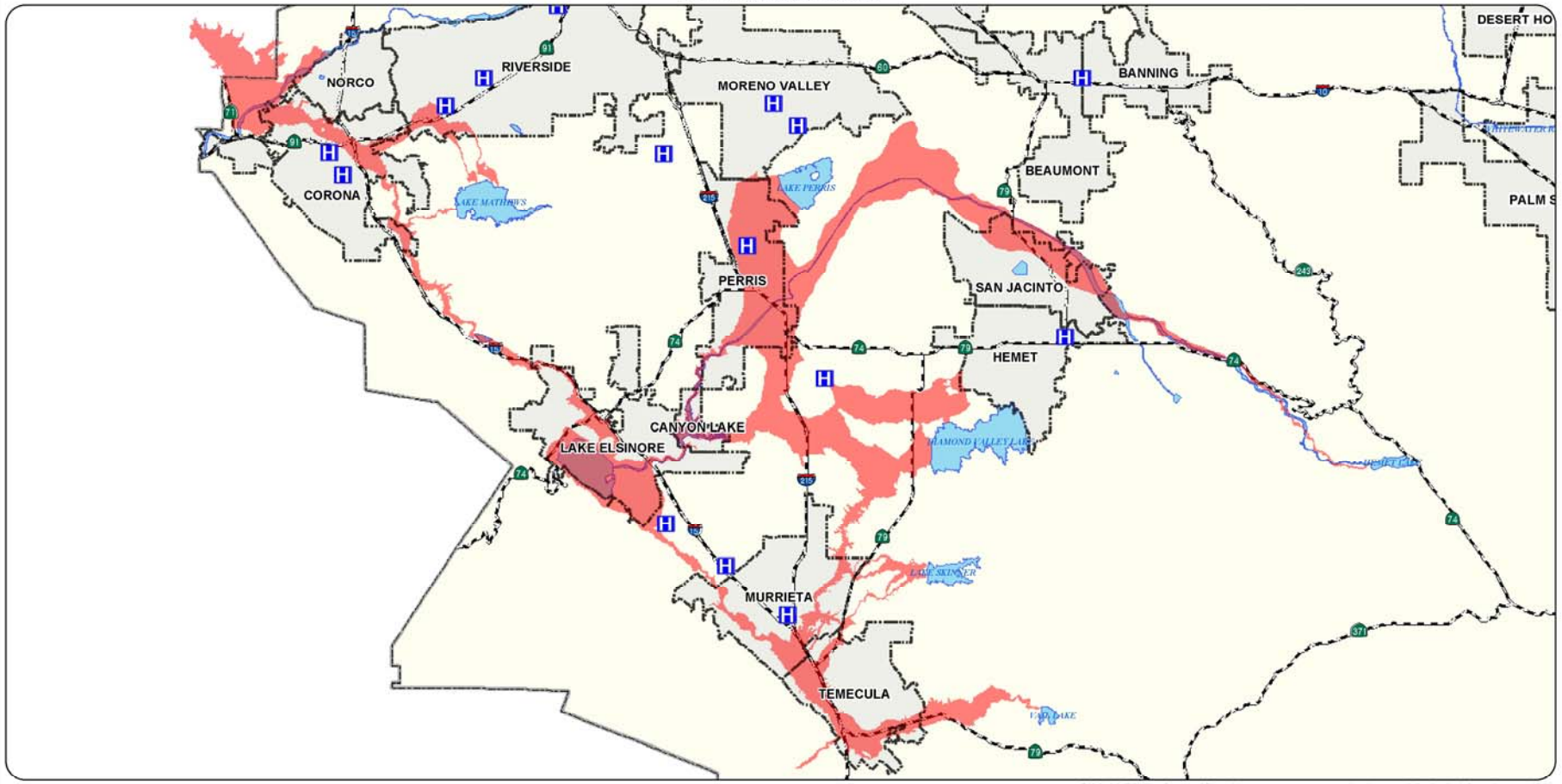
Dam	River	Nearest City	Height (feet)	Storage (acre-feet)	Year Built	Drainage Area (sq. miles)	Hazard Rating by Local Jurisdiction
Declez Detention	San Sevaine Creek	Glen Avon Heights	30	480	1984	10.7	High
Dunn Ranch	Hamilton Creek	Anza	44	126	1987	0.2	Significant
Eastside	Diamond Valley Creek	Winchester	284	800,000	2001	13	High
East Side Detention Dike No. 1	Whitewater River	Thermal	42	21,000	1949	Not reported	Low
East Side Detention Dike No. 2	Whitewater River	Thermal	48	18,000	1949	Not reported	Low
Foster	Lily Creek	Idyllwild	38	56	1945	0.85	Low
Goodhart Canyon Detention Basin	Goodhart Canyon	Winchester	15	1038	Note reported	3.8	High
H.J. Mills Reclam	Off-stream	Not reported	48	98	Not reported	0.03	Significant
Henry J. Mills #2	Off-stream	Riverside	34	92	1966	0.1	Significant
Jurupa Basin	Jurupa Wash	Ennis	22	291	1983	1.69	Significant
Lake Hemet	San Jacinto River	Valle Vista	135	140,000	1895	67	High
Lakeview	San Jacinto River	Lakeview	37	990	1994	7.6	High

Dam	River	Nearest City	Height (feet)	Storage (acre-feet)	Year Built	Drainage Area (sq. miles)	Hazard Rating by Local Jurisdiction
Lee Lake	Temescal Creek	Corona	47	2,800	1919	53	Significant
Mabel Canyon	Mabey Creek	Corona	46	111	1974	1.5	High
Mary Street	Alessandro Wash	Casa Blanca	40	570	1981	6.7	High
Matthews	Cajalco Creek	Corona	264	182,000	1918	40	High
Metz Road	San Jacinto River	Perris	12	154	1981	1	Significant
Oak Street	Oak Street Creek	Corona	36	400	1979	6.02	High
Perris Lake	Bernasconi Pass	Perris	130	131,500	1973	10	High
Pigeon Pass	Pigeon Pass	Moreno Valley	36	900	1958	8.71	High
Prado	Santa Ana River	Chino and Corona	106	295,581	1941	2,233	High
Quail Valley	San Jacinto River	Lake Elsinore	37	178	1959	1.6	Significant
Railroad Canyon	San Jacinto River	Lake Elsinore	94	11,500	1928	664	High
Sunnymead Rance	Reche Canyon	Moreno Valley	41	540	1985	2	High
Tahchevah	Tahchevah Creek	Palm Springs	42	650	1964	3.2	High
Tahquitz Creek Debris	Tahquitz Creek	Agua Calienta	32	75	1991	18	High
West Side Detention Dike No. 2	Whitewater River	La Quinta	37	630	1968	0	Low
West Side Detention Dike No. 3	Whitewater River	La Quinta	22	1,300	1970	Not reported	Low
West Side Detention Dike No. 4	Whitewater River	La Quinta	48	4,900	1968	Not reported	Low
Wide Canyon	West Side Canyon	Fun Valley	84	Not reported	1968	33.5	Significant

Should any of the major dams break, the inundation could be widespread.

Western Riverside County

Dam Inundation Risks



Hospitals
Highways
Inundation Areas
Cities
Waterbodies
County Boundary

5 2.5 0 5 10 Miles

N

Created By: Janice Nollar
Source: County of Riverside, State of California

DISCLAIMER: The County of Riverside assumes no warranty or legal responsibility for the information contained on this map. Data and information represented on this map is subject to change and may not be complete or appropriate for all purposes. County GIS and other sources should be queried for the most current information. Do not copy or resell this map.

Horizontal accuracy: Parcel data is of mapping grade (quality) only and does not represent trustworthy locations or legal boundaries. User assumes all risk of use of this product.

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

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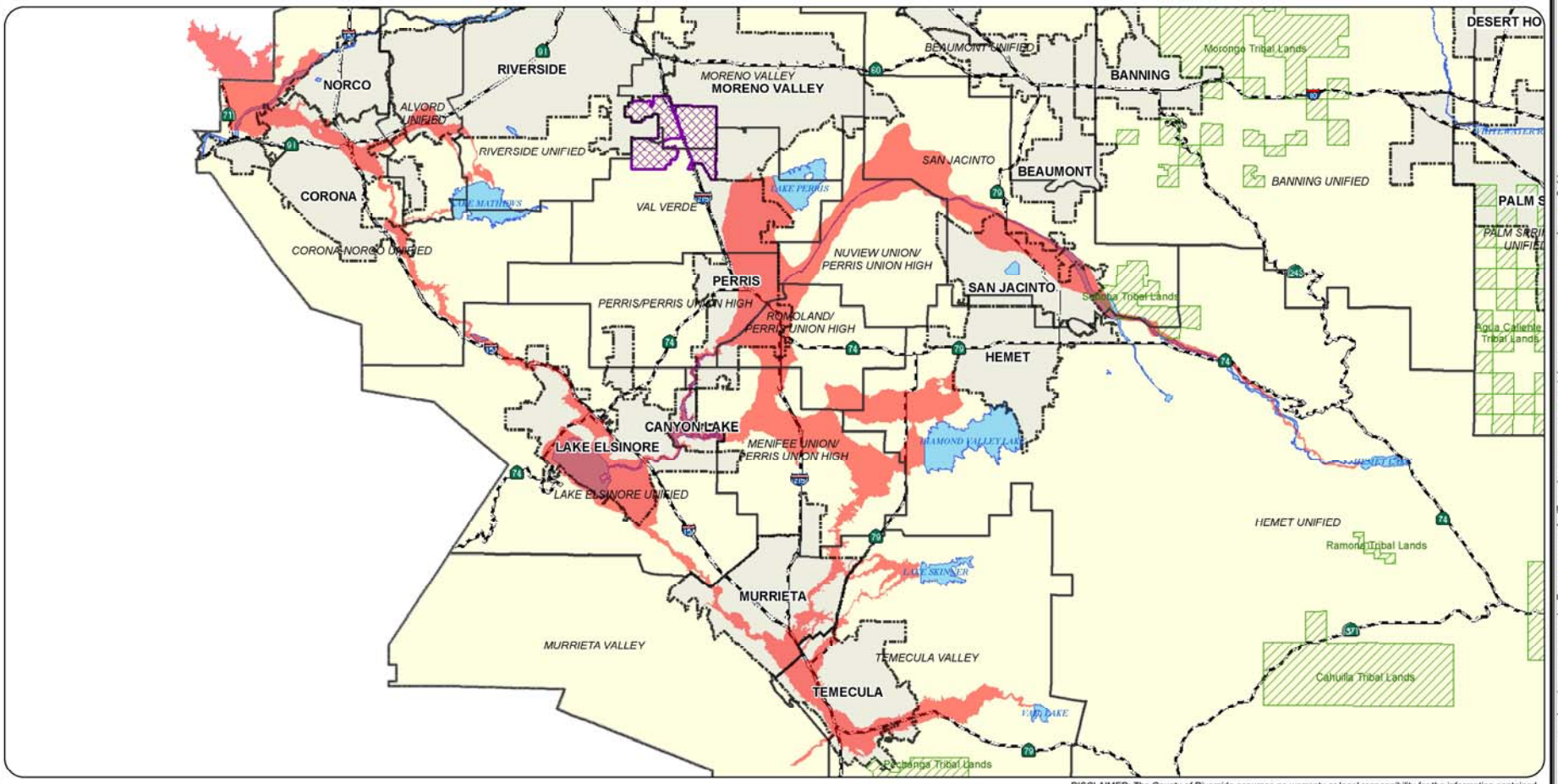
Western Riverside County

Dam Inundation Risks



Created By: Janice Nollar
Source: County of Riverside, State of California

Highways
Inundation Areas
March Air Reserve Base
Tribal Lands
School District Boundaries
Cities
Waterbodies
County Boundary

5 2.5 0 5 10 Miles

N

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Coordinate system
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Geographic: GCS_North_American_1983

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Risk Assessment

The County of Riverside is subject to potential flooding from several local dams, reservoirs, streams, rivers, and washes. These include but are not limited to, Lake Elsinore, the Colorado River, and the San Jacinto River. Seasonal flooding with failure of run-off storage reservoirs, canals, and levees could seriously compound the situation, particularly in or near urban population centers. From the time of complete failure to inundation could be as little as 5-to-10 minutes.

Portions of Riverside County along the Colorado River corridor could suffer from catastrophic failure of dams that are located far outside the borders of Riverside County. These dams include Palo Verde Diversion Dam, Headgate Rock Dam, Parker Dam, Davis Dam, and Hoover Dam. If there were a catastrophic dam failure, it is estimated that it would take a minimum of 23 hours before the flood waters reach the City of Blythe.

With major disruptions in power and communications systems, warning may not be received from dam or reservoir sites in time to initiate an organized evacuation or broadcast warnings via emergency radio stations. If a credible prediction is initiated, then preparation for a damaging earthquake could begin and residents and business owners within dam inundation areas could be directed to assembly areas to wait for official word regarding safe re-entry. This method of direction and control could substantially reduce potential loss of life, if enough warning were available.

- **Effects on people and housing.** The effects on people and housing can be significant. Loss of life and loss of property are very real risks. The shelter requirements for displaced persons can be enormous.

- **Effects on commercial and industrial structures.** Similarly, commercial and industrial structures face risks running the gamut from significant damage to total loss.

- **Effects on infrastructure.** Dam failure may be a direct or indirect cause of power outages. These outages can be extensive in geographic area and numbers of persons affected.

- **Effects on Critical Facilities.** As with the threat of flooding, there are numerous critical facilities within the inundation zones of the dams. In many cases, the facilities were built before the creation of some of the dams (Diamond Valley as an example) and became vulnerable since that time. Relocation efforts for some facilities are being studied and a restriction on the building on these types of facilities has been developed by the County.

- **Effects on agriculture.** Effects on agriculture can be catastrophic, both for crops and for animals. Loss of property is a real risk, as well.

Risk Assessment Conclusion.

Although dam failure incidents have not historically been a problem in Riverside County, the County's location with respect to earthquake fault lines presents the very real danger of dam failure due to quakes. If this were to occur, the effects could be catastrophic. Also, as noted above, seasonal flooding with failure of run-off storage reservoirs, canals, and levees could seriously compound the risks of dam failure and additional flooding.

Relationship to Other Hazards – Cascading Effects

Dam failure obviously causes downstream flooding. It may also lead to power failures and downed power lines. The secondary effects of dam failure can include the disruption of the local and state economies by damage to buildings and roads, the severance of communications, the disruption of supply and delivery mechanisms, additional welfare, and emergency aid to the recovering economy.

Dam failure may be caused by other hazards, including earthquakes and seasonal flooding.

Hazard Mitigation Goals and Strategies

Several methods have been used to improve the seismic stability of dams in California. Multiple arch dams are being stiffened, and embankment dams are being buttressed. Reservoir storage restrictions are being used to improve dam safety.

During the development of the Safety Element of the General Plan, a review of records maintained at the California OES provided potential failure inundation maps for 23 dams affecting Riverside County. These maps were compiled into the GIS digital coverage of potential dam inundation zones for Riverside County. These maps are intended to be used by state and local officials for the development and approval of dam failure emergency procedures as described in Section 8589.5 of the California Government code. The maps are also used to provide information needed to make natural hazard disclosure statements required by legislation (AB 1195 Chapter 65, June 9, 1998; Natural Hazard Disclosure Statement).

The Riverside County General Plan, adopted in October 2003, combines the mitigation efforts for floods and dams together, to insure that the same standards are used to protect property and lives for both types of events.

A specific mitigation strategy listed in the General Plan identifies the need to adopt an inundation alert system with readiness levels corresponding to official forecasts by the State Office of Emergency Services, regarding earthquake prediction, flooding, potential for dam failures and other disasters. This recommendation has been written has a Mitigation Proposal and can be found in the County Department Mitigation Section of Appendix D.

Hazard: Hazardous Materials Incidents

County Severity Rating: 3	County Probability Rating: 3

OA Jurisdictions Affected by Hazardous Materials Incidents

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Elsinore Valley Municipal Water District
- Idyllwild Fire Protection District
- Idyllwild Water District
- Lake Elsinore Unified School District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District

- Western Municipal Water District

Hazard Definition

Hazardous materials (Hazmat), consist of substances that by their nature, lack of containment, and reactivity, have the capability for inflicting harm. Hazmat poses a threat to health and the environment when improperly managed. Hazmat can be toxic, corrosive, flammable, explosive, reactive, an irritant, or a strong sensitizer. Hazmat substances also include certain infectious agents, radiological materials, oxiders, oil, used oil, petroleum products, and industrial solid waste substances.

Hazardous materials can pose a threat where they are manufactured, stored, transported or used. They are used in almost every manufacturing operation and by retailers, service industries, and homeowners.

Hazardous material incidents are one of the most common technological threats to public health and the environment. Incidents may occur as the result of natural disasters, human error, and/or accident.

Hazmat incidents typically take three forms:

1. Fixed facility incidents
    a. It is reasonably possible to identify and prepare for a fixed site incident, because laws require those facilities to notify state and local authorities about what is being used or produced there.
2. Transportation incidents
    a. Transportation incidents are more difficult to prepare for because it is impossible to know what material(s) could be involved until an accident actually happens.
3. Pipeline incidents
    a. Pipelines carry natural gas and petroleum. Breakages in pipelines carry differing amounts of danger, depending on where and how the break occurs, and what is in the pipe.

History

Many forms of hazardous materials are present in both the rural and urban areas of Riverside County. They are present in permanent storage locations, roadway and railway transport mediums, long-distance pipelines, and at various industrial and agricultural application sites. The County's location, with its rail and highway transportation routes, and various industries, has a growing potential for serious hazardous materials incidents. Interstates 10 and 215, and State Highways 60 and 91 are all heavily traveled by trucks. Those trucks carry a wide variety of hazardous materials including gasoline, rocket fuels, pesticides, and radioactive materials.

The railroad lines traveling throughout the County also carry some extremely hazardous cargoes. Fortunately, the railroads have a good safety record with regard to the transportation of hazardous materials.

Traffic on railroads is not as prevalent as on truck routes in Riverside County, but poses a much greater problem when an accident is involved due to the volumes of hazardous materials on board.

Although there is a great deal of air traffic along the airways above Riverside County, with the exception of March Air Reserve Base, there is relatively little airport activity. However, the potential for a hazardous materials incident still exists, especially with respect to military operations.

There are many pipeline distribution systems that traverse the County. These are discussed separately later in this LHMP.

The following table describes a number of relatively recent Hazmat incidents.

Location	Date	Incident Description
Beaumont	4/23/2003	Railcar fire. Leaked white sand. Had to be checked by Hazmat.
Palm Springs Court Bldg.	3/24/2003	Noxious fumes released from mixed chemicals. Building evacuated.
Cajalco	2/12/2003	500 gallon propane tank rolled down a hill and vented. Residents evacuated.
Edgemont - School	1/24/2003	Natural gas leak. School dismissed.
Thermal	8/23/2002	Crop duster crash. Power lines downed. Pesticides released.
Moreno Valley	8/18/2002	Cleaning crew at apartments mixed cleaning agents and was overcome by fumes. 3 apartments evacuated.
Palm Desert	4/25/2002	Truck leak - 55 gallon drum of hydrogen peroxide. Reacted with asphalt.
Corona	10/11/2001	Waste oil barrels illegally dumped.
Indio - Restaurant	10/10/2001	CO2 chemical from defective storage. 27 people were treated and 4 were hospitalized. Building evacuated.
Hwy 215 at Nuevo Road	8/20/2001	Methyl Ethyl Keytone spill. 11 vehicle accident.
City of Riverside -Van Buren/Indiana Area	12/15/2000	Semi truck wreck causing large oil spill that caused closing of road. Oil also leaked into flood basin.
Riverside City - Arlington Ave.	8/24/2000	Double tanker fuel accident, 5,800 gallons. Tanker breached with fire. 12 homes evacuated, affecting about 25-30 residents. Road closed.
Palm Springs	7/5/1999	Train derailment, head on collision. Spill of 10,000 gallons of diesel oil into San Gorgonio River.
Riverside	2/19/1994	“Gloria Ramirez incident” – noxious fumes in emergency room resulted in some health care professionals becoming ill and fainting

The administering agencies within Riverside County are responsible for the control of fixed hazardous materials facilities.

Risk Assessment

The amount of hazardous materials transported over rail and roadways on a daily basis is unknown, but estimated to be steadily increasing as our economy grows. There is the potential for a hazardous materials incident almost anywhere on the numerous highways and roads that criss-cross Riverside County. The greatest concern focuses on the 10, 15, 60, 91, and 215 freeways. The most vulnerable areas along these routes are considered to be the on/off ramps and interchanges.

A major concern with the trucking industry is the safe operation of their trucks. With the deregulation of the trucking industry, spot checks of trucks in many states, including California, have shown that 25 percent or greater of trucks currently in service are not in safe enough condition to be operated on public highways.

Many high-tech industries are moving into the County. Many plants exist today, with more construction forecast. To support high-tech industries, the County is likely to realize a large increase in the transportation of highly toxic and corrosive materials into and out of the County. With increased use of hazardous materials, there is increased need for safe hazardous waste management and disposal. With many hazardous waste disposal sites closing, there will be increased transportation of hazardous materials.

Illegal dumping and clandestine drug labs are also a hazardous materials problem. Although not exclusive to Riverside County, the County is a target for these activities due to its accessibility in the outlying areas and the open living conditions in the mountain and desert areas.

No Class I landfills are operated in Riverside County. Eight Class III landfills are active in Riverside County. All accept only non-hazardous solid wastes and are located in unincorporated areas. Five of these landfills are operated by the Riverside County Waste Management Department, while one (El Sobrante) is privately owned and operated. The El Sobrante and Blythe landfills are the only facilities that currently accept waste from outside of Riverside County.

According to the EPA, the five largest generators of production-related hazardous waste materials in Riverside County produce over 15 million pounds of these materials, including lead compounds, sulfuric and phosphoric acids, and xylene. There hazardous waste generators include food and beverage processors as well as battery, semi-conductor, and metal container manufacturers. Although hazardous waster generators are scattered throughout Riverside County, most of the large producers of these materials are located in the western portion of the County. Of the five largest generators, two are located in the City of Corona. The other three are located in the Riverside, Temecula, and the community of Mira Loma.

Nearly all of Riverside County residents have some type of hazardous material in their homes. Examples include motor oil, paints, cleaners, aerosols, and pesticides. Household hazardous materials pose serious health issues for people who improperly use or dispose of these materials. Adverse environmental impacts can occur when household hazardous materials are disposed of in unlined sanitary landfills, where these materials may leach through the soil and contaminate groundwater.

Medical facilities, including clinics, hospitals, professional offices, blood and plasma centers, and medical research facilities generate a wide variety of hazardous substances. These substances may include contaminated medical equipment or supplies, infectious biological matter, prescription medicines, and radioactive materials used in medical procedures. The disposal of medical waste is achieved by on-site autoclaving of red-bagged waste (any medical waste that could possibly transmit a pathogen) and subsequently transported to a Class III landfill. The Riverside County Department of Environmental Health Services has regulatory control over the disposal of medical and biological waste.

- **Effects on people and housing.** As the historical events in Riverside County show, people may be evacuated when a Hazmat incident occurs. Relative to some of the other natural hazards assessed earlier in this LHMP, the numbers of people affected by Hazmat incidents are usually less.

- **Effects on commercial and industrial structures.** There may be economic consequences due to Hazmat incidents, but the damage is generally limited to clean-up of facilities and grounds, or simply interruption of business due to evacuation.

- **Effects on infrastructure.** Hazmat incidents involving transportation may result in downed power lines. Also, Hazmat materials may impact waterways and drainage systems, and incidents can lead to the evacuation of schools, business districts, and residential areas.

- **Effects on agriculture.** As noted previously, there is a long history of agricultural production in Riverside County. Agricultural activities typically include the storage and periodic application of pesticides, herbicides, and fertilizers, as well as the storage and use of toxic fuels and solvents. The infiltration of these substances may leach into local groundwater supplies, presenting an elevated risk of groundwater contamination.

Risk Assessment Conclusion

Although the point of hazard in a Hazmat incident can have serious property damage and even loss of life, Hazmat accidents do not generally affect extremely large areas. Hazmat incidents present a real danger and are highly unpredictable in terms determining when or where they will occur, but they generally do not pose a serious threat to the ability of Riverside County to respond. Reasonable preparation by law enforcement, the fire department, and the medical community enables the County to deal with the majority of likely events. Many emergency workers prepare for Hazmat events as part of their ongoing training. Agencies and facilities are also routinely equipped to deal with most events that might occur.

Relationship to Other Hazards – Cascading Effects

Besides the immediate effect of a hazardous materials incident at the scene of the emergency, there are ancillary effects as well. For instance, there may be impacts on waterways and drainage systems, and the evacuation of schools, business districts, and residential areas.

Hazard Mitigation Goals and Strategies

The County of Riverside Department of Environmental Health contains a Hazardous Materials Management Division, which has several methods of collecting household hazardous waste. There is a Mobile Household Waste facility that travels throughout the County and collects hazardous waste at multiple locations.

The Department of Environmental Health also maintains antifreeze, battery, oil, and latex paint (ABOP) collection sites. There are three sites within Riverside County in the cities of Riverside, Palm Springs, and Murrieta.

In addition to Federal and State policies and regulations for handling of hazardous waste, Riverside County has two local ordinances in this area:

1. Ordinance No. 615.3 – Implemented for the purpose of monitoring establishments where hazardous waste is generated, stored, handled, disposed, treated, or recycled. Regulates the issuance of permits and the activities of establishments where hazardous waste is generated.

2. Ordinance No. 718.1 – Implements a medical waste management program in accordance with the Medical Waste Management Act, as found in the California Health and Safety Code, Division 14, Part 14. Establishes requirements for the management of medical waste and makes provisions for the enforcement of the requirements.

The Riverside County General Plan, adopted in October 2003, includes the following recommendations:

1. Enforce the policies and siting criteria and implement the programs identified in the County of Riverside Hazardous Waste Management plan, which includes the following:
   a. Comply with federal and state laws pertaining to the management of hazardous wastes and materials.
   b. Ensure active public participation in hazardous waste and hazardous materials management decisions in Riverside County.
   c. Coordinate hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority (SCHWMA).
   d. Encourage and promote the programs, practices, and recommendations contained in the County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.

Hazard: Transportation Emergencies

County Severity Rating: 2	County Probability Rating: 4

OA Jurisdictions Affected by Transportation Emergencies

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Elsinore Valley Municipal Water District
- Idyllwild Fire Protection District
- Lake Elsinore Unified School District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

Transportation hazards are incidents involving air, rail, or highway transport of goods or passenger travel resulting in property damage, death, or serious injury. The incidents can be caused by transportation of hazardous materials, earthquake, hazardous weather, or other hazardous conditions affecting the uninterrupted flow of transportation and/or public safety.

Five major transportation systems operate within Riverside County. These systems are:

1. Highways
2. Railroads
3. Air traffic
4. High pressure petroleum and gas lines
5. Aqueducts.

Pipelines and aqueducts are treated separately in the next section of this LHMP.

History

Highways. The traffic density on the freeway and highway systems in the western part of the County is of particular concern. The population and economic growth in this area has caused increased demand on these networks.

Although the seasons do not have a large impact on Riverside County, there is the threat of poor visibility due to winter fog. Adding to this problem is the fact that one out of every ten trucks on the freeway carries some sort of hazardous materials. (In addition, California Highway Patrol statistics show that 20 – 25 percent of them are usually driven in an unsafe mechanical condition.)

Rail Lines. Major rail transport lines through Riverside County include Union Pacific and the Burlington Northern Santa Fe (BNSF) Railway Companies. Rails, cars, supporting bridges, overpasses, and electrically-operated switching mechanisms are susceptible to damage.

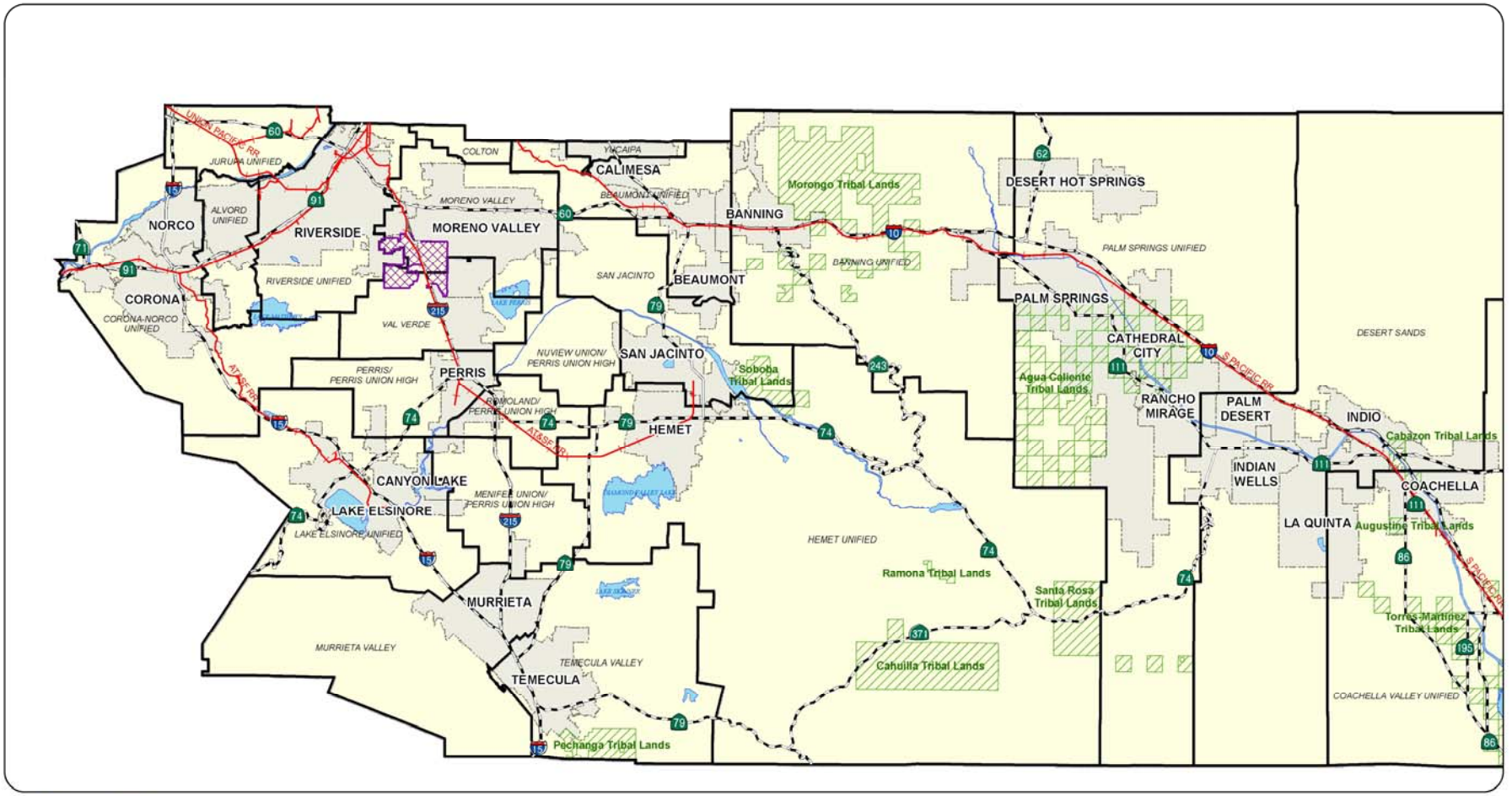
Union Pacific and the BNSF Railway Companies lines enter the Coachella Valley from Imperial County along the eastern shore of the Salton Sea.

Major population centers affected by railroad transportation are vulnerable to the impact of a wide variety of hazardous materials transported by these carriers. Additionally, there are lines running east and west that carry significant tonnage daily. Some of these lines are in remote areas, but that does not lessen the overall seriousness of their impact.

The following two maps depict major highways and railways in Western Riverside County and Eastern Riverside County, respectively.

Western Riverside County

Highways and Railways Risks



Highways
Railway
School District Boundaries
March Air Reserve Base
Tribal Lands
Cities
Waterbodies
County Boundary

5 2.5 0 5 10 Miles

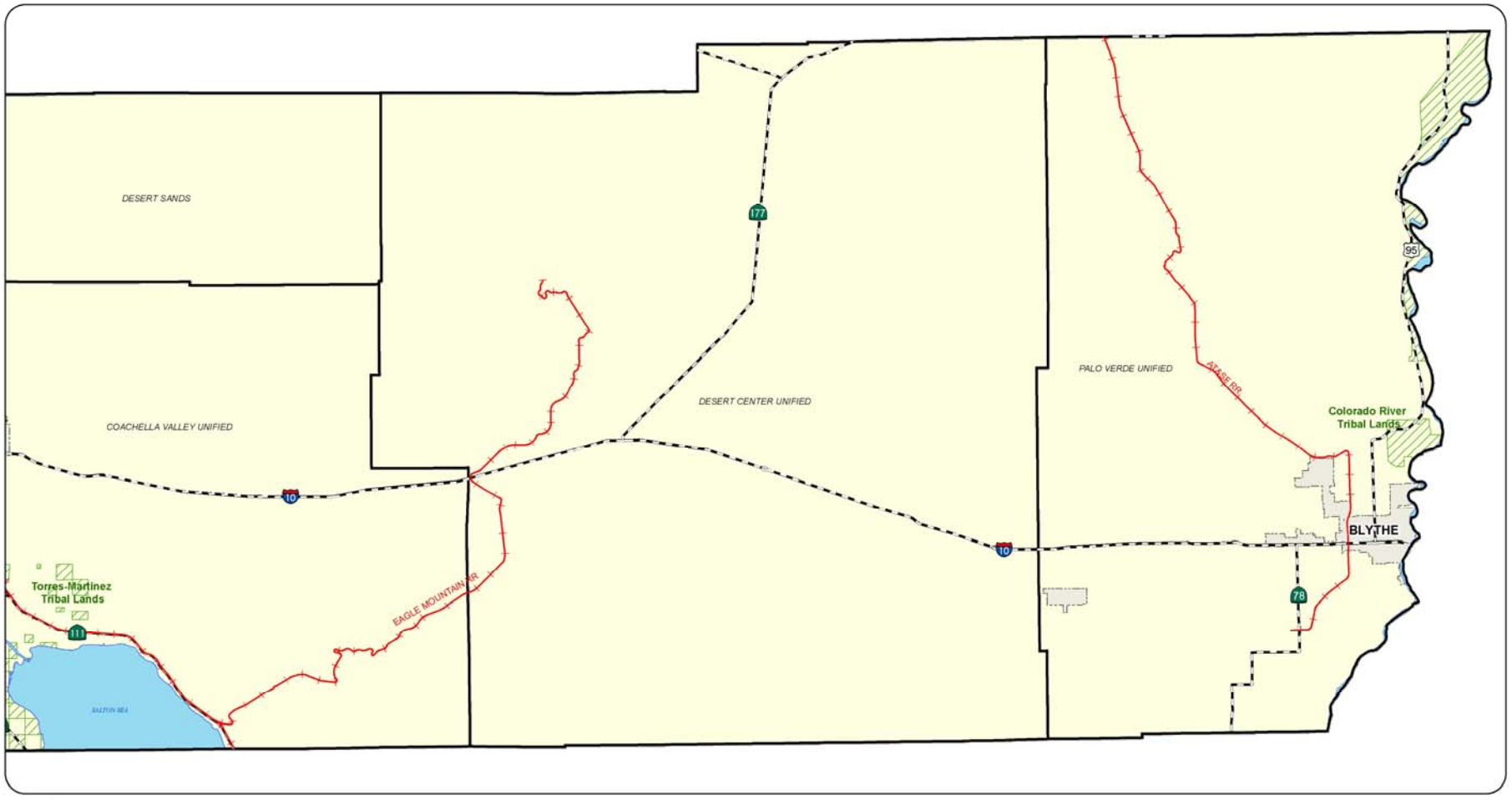
N

Created by: Janice Nollar
Source: County of Riverside

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Eastern Riverside County

Highways and Railways Risks



Created by: Janice Nollar
Source: County of Riverside

Highways
Railway
School District Boundaries
Tribal Lands
Cities
Waterbodies
County Boundary

5 2.5 0 5 10 Miles

N

Coordinate system
Projected: NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Geographic: GCS_North_American_1983

Airlines / airports. The western part of Riverside County has some of the busiest air traffic areas in the United States. Commercial, as well as military traffic, is very heavy. The number of near misses reported by pilots underscores the increasing possibility of a mid-air collision over the County.

There are two major airports in Riverside County: March Air Reserve Base and Palm Springs International. There are also numerous smaller municipal and commercial airports, and private air strips,

- Banning Airport
- Bermuda Dunes Airport
- Blythe Airport
- Chiriaco Summit Airport
- Corona Municipal Airport
- Desert Center Airport
- Flabob Airport
- French Valley Airport
- Hemet City Airport
- Lake Elsinore Airport
- Perris Valley Airport
- Rancho California Airport
- Riverside Municipal Airport
- Thermal Airport

In addition, there are four major out-of-county airports operating in the vicinity of Riverside County with significant flight-paths over the County:

1. John Wayne Airport (Orange County)
2. Long Beach Airport (Los Angeles County)
3. Los Angeles International (LAX) Airport
4. Ontario Airport (San Bernardino County)

The history of transportation emergencies in Riverside County includes a wide range of incidents as shown in the table below. Note that many of the Hazmat incidents enumerated in the preceding section may be viewed as transportation emergencies as well.

Location	Date of Incident	Incident Type	Incident Description
Beaumont, San Timeteo Road	9/7/2003	Train - Collision with other train	Train derailment, diesel fuel leak. 2 homes evacuated, 4 displaced residents.
Beaumont	4/23/2003	Train - Cargo	Railcar fire.
Mira Loma, Jurupa, Rubidoux, Pedley, Sky Country	1/6/2003	Highway - Semi	Semi-truck overturn. Road closures, downed trees and power lines. Power outages affecting 10,000.
Thermal	8/23/2002	Airplane - crop-duster	Crop duster crash. Power lines down. Pesticides released.
Palm Desert	4/25/2002	Highway - Spill	Truck leak - 55 gallon drum of hydrogen peroxide.
North Bound 215 - 4th Street	10/24/2001	Highway - Automobile	Fog related vehicle accident. 32 vehicles, 50 passengers
Hwy 215 at Nuevo Road	8/20/2001	Highway Incident - Automobile	Methyl Ethyl Keytone spill. 11 vehicle accident.
City of Riverside - Van Buren/Indiana Area	12/15/2000	Highway Incident - Semi	Semi truck wreck causing large oil spill that caused closing of road. Oil also leaked into flood basin.
Riverside City - Arlington Ave.	8/24/2000	Highway - Spill	Double tanker fuel accident, 5,800 gallons. Tanker breached with fire. 12 homes evacuated, estimated 25-30 residents
Cathedral City	10/22/1999	Train - Passenger & Freight collision	Passenger train collided with freight train. 234 crew and passengers injured. 16 railcars damaged.
Riverside County - Hector Mine	10/16/1999	Rail line	Earthquake, pipeline break, track damage, fallen items in stores, power outage
Palm Springs	7/5/1999	Train - Head on Collision	Train derailment, head on collision. Spill of 10,000 gallons of diesel oil into San Gorgonio River.

Risk Assessment

The possibility for a transportation hazard to occur is ongoing. There have been railway incidents in the recent past, although they have not been numerous and have not caused extensive damage. Semi-trucking incidents are not uncommon, and could result in a hazardous spill at any time, although notable events have not occurred in recent history. There has not been a serious airline accident in the area in the recent past.

- **Effects on people and housing.** As the historical events in Riverside County show, people may be evacuated when a transportation emergency occurs. Relative to some of the other natural hazards assessed earlier in this LHMP, the numbers of people affected by transportation emergencies are usually less.

- **Effects on commercial and industrial structures.** There may be economic consequences due to transportation emergencies, but the damage is generally limited to clean-up of facilities and grounds, or simply interruption of business due to evacuation.

- **Effects on infrastructure.** Transportation emergencies may result in downed power lines. Also, Hazmat materials released in a transportation emergency may impact waterways and drainage systems, and incidents can lead to the evacuation of schools, business districts, and residential areas.

- **Effects on agriculture.** Transportation is essential to the agricultural industry. For all elements of agriculture other than those that are dairy-related, any incident that affects transportation for more than three days is “major.” For the dairy segment of the agricultural industry, any incident that affects the ability to transport product by more than 12 hours is considered “major.”

Risk Assessment Conclusion.

In general, transportation hazards are not cataclysmic in terms of widespread property damage and loss of life. Existing emergency operations should be equipped to handle almost of any transportation hazard that may occur.

However, because Riverside County has an agricultural production value of over $1 billion, any transportation emergency that affects the ability for agriculture to conduct its routine business (importing supplies and exporting production) can have severe economic consequences for the County.

Relationship to Other Hazards – Cascading Effects

Cascading effects of transportation emergencies are generally limited to those of Hazmat incidents as described above.

Hazard Mitigation Goals and Strategies

Highways, railroads, airports, pipelines, and aqueducts are considered elements of Riverside County's critical infrastructure. There are a number of policies within the Safety Element of the General Plan aimed at strengthening the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to encourage structural and nonstructural design and construction for critical infrastructure. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated.

Hazard: Pipeline / Aqueduct Incidents

County Severity Rating: 2	County Probability Rating: 3

OA Jurisdictions Affected by Pipeline / Aqueduct Incidents

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Elsinore Valley Municipal Water District
- Home Gardens County Water District
- Idyllwild Fire Protection District
- Idyllwild Water District
- Lee Lake Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District

- West Valley Water District
- Western Municipal Water District

Hazard Definition

There are many pipeline distribution systems that transit Riverside County, including systems for water, natural gas, and petroleum products.

Major water conveyance systems consist of the Colorado River Aqueduct operated by Metropolitan Water District (MWD) of Southern California, the California Aqueduct operated by the State Department of Water Resources (DWR), and water distribution lines operated by MWD.

A major pipeline carrying natural gas parallels Interstate 10 and Highway 60 throughout the County. This pipeline brings gas from the southwestern states into Southern California.

Petroleum products are stored and distributed at many major areas throughout the County. Of particular interest are the aviation fuel tanks and pipelines located at March Air Reserve Base. Although under the control of the U.S. Government, their potential for impact on the surrounding area is of interest to the County.

History

Recent emergency incidents in Riverside County include:

Location	Date	Incident Description
Pedley	10/31/2002	Gas line rupture. 131 structures evacuated. Mobile home park evacuated. 150 people displaced.
Moreno Valley	8/29/2002	Broken pipe at waste treatment plant. 300,000 gal sewage spill.
Rubidoux Area	10/30/2000	Gas line was damaged by residential homeowner. 70 people evacuated.
City of Riverside -Van Buren/Montgomery	8/29/2000	Water line break. Flooded homes, displaced 7 families. Hail, heavy rain. Mudslide.
Riverside County - Hector Mine	10/16/1999	Earthquake, pipeline break, track damage, fallen items in stores, power outage
Cherry Valley	7/11/1999	Flood: 2 Reservoirs lost, pipeline break, water system destroyed, water damage to structures.

On a daily basis, minor incidents occur which affect a single structure.

Risk Assessment

A rupture of a main line with a major release could have serious effects in terms of flooding and property damage. A gas line rupture could explode causing serious property damage and loss of life.

- **Effects on people and housing.** The consequences to people and housing of flooding or explosion could be quite severe.

- **Effects on commercial and industrial structures.** Similarly, the effects on commercial and industrial structures from flooding or explosion could be severe.

- **Effects on agriculture.** In the same way, the effects on agriculture from flooding or explosion could be severe.

Risk Assessment Conclusion.

Pipelines are vulnerable to rupture if for no other reason than the possibility of an earthquake causing significant breakage. The degree of damage county-wide for a given rupture would be minimal, even though there might be significant loss of life and property in the immediate area of the incident, depending on what kind of pipe ruptures and where the rupture occurs.

Relationship to Other Hazards – Cascading Effects

Pipeline / aqueduct incidents may lead to flooding. Incidents with natural gas or petroleum product pipelines may lead to explosion and fire.

Hazard Mitigation Goals and Strategies

As noted in the previous section on Transportation Emergencies, pipelines and aqueducts are considered elements of Riverside County's critical infrastructure. There are a number of policies within the Safety Element of the General Plan aimed at strengthening the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to encourage structural and nonstructural design and construction for critical infrastructure. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated.

Hazard: Blackout

County Severity Rating: 3	County Probability Rating: 4

OA Jurisdictions Affected by Blackout

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
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- Idyllwild Fire Protection District
- Idyllwild Water District
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- Lee Lake Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency

- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

A blackout is a total loss of power and light. A blackout is caused by an interruption or loss of electrical service due to disruption of power generation or transmission caused by an accident, sabotage, natural hazard, equipment failure, or fuel shortage. Interruptions that are more common are caused by power grid failure, fire, or severe weather. In Riverside County, it is possible that power outage could be caused by a severe earthquake. These interruptions can last anywhere from a few seconds to several days or weeks.

History

Recent blackout incidents in Riverside County are described in the table below:

Location	Date	Incident Description
Riverside County	1/14/2003	Power lines down with 936,569 people affected, trees felled, homes damaged, fire triggered from downed lines,
Mira Loma, Jurupa, Rubidoux, Pedley, Sky Country	1/6/2003	High wind caused road closures, downed trees and power lines. Semi-truck overturns. Power outages affecting 10,000. Fire.
Moreno Valley	7/22/2002	51 home blackout. Transformer fire. Illegal dumping of used motor oil into the transformer vault.
Riverside County	2/9/2002	High wind. Damage throughout county. Roof damage, structure fires, wildfires started but were contained before 15 acre point. Power outages from wind.
Eastern Coachella Valley	7/3/2001	Power failure. Several thousand people affected.
Desert Cities	8/27/2000	Thunderstorm and wildfires caused power interruption. 2,800 customers without power.
Blythe	8/23/2000	Power outage from storms. Provided shelter for 24 people.
Hector Mine Earthquake	10/16/1999	Minor damage to buildings, power interruption, communication interruption, gas line break causing leak.
Beaumont	2/17/1999	60mph winds damaged roofs, downed trees and power lines, and created a dense dust storm. Plume of dust penetrated homes and covered all surfaces and filled closets and cupboards. Yards had 3" to 6" of silt. 1128 homes damaged. 27 vehicles.
Greater Jurupa Area	1/6/1996	Property damage, power disruption, road damage.
Riverside County	10/28/1993	Variety of fires. 129 structures destroyed. Power outages. 6 injuries.

Risk Assessment

The possibility of catastrophic damage to property or loss of life due directly to power failure is slight. An individual could lose their life if they come into contact with a downed power line. Although the risk of power outage is high, the direct damage potential is low.

On the other hand, blackouts or interrupted service often occur during electrical storms and high winds. Wildfires also cause blackouts in the Riverside County area. There is a very real possibility of a widespread blackout due to earthquake.

- **Effects on people and housing.** Impacts due directly to power failure are slight.
- **Effects on commercial and industrial structures.** Impacts due directly to power failure are slight.
- **Effects on infrastructure.** Impacts to the ability of infrastructure in the area of failure to support emergency response may be significant, although not permanent.
- **Effect on Critical Facilities.** An inventory of all major critical facilities showed that they all have back-up power capabilities.
- **Effects on agriculture.** Impacts due directly to power failure are slight.

Risk Assessment Conclusion

The County needs to be prepared to restore power should there be a failure due to downed lines caused by another hazardous condition.

Relationship to Other Hazards – Cascading Effects

As noted, other hazards such as earthquake, wildfire, electrical storms, and high winds may be causes of blackouts.

Hazard Mitigation Goals and Strategies

Both Southern California Edison and Anza Electricity have mitigation plans.

Hazard: Toxic Pollution

County Severity Rating: 3	County Probability Rating: 4

OA Jurisdictions Affected by Toxic Pollution

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Hemet
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Murrieta
- City of Norco
- City of Perris
- City of Rancho Mirage
- City of Riverside
- Idyllwild Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

People are exposed to toxic pollutants in many ways that can pose health risks:

- Breathing contaminated air
- Eating contaminated food products, such as fish from contaminated waters; meat, milk, or eggs from animals that fed on contaminated plants; and fruits and vegetables grown in contaminated soil
- Drinking water contaminated by toxic pollutants
- Ingesting contaminated soil. Young children are especially vulnerable because they often ingest soil from their hands or from objects they place in their mouths
- Touching (making skin contact with) contaminated soil, dust, or water (for example, during recreational use of contaminated water bodies)

History

Los Angeles and Riverside Counties have often been sited as the most polluted environments in the United States. The California Wellness Foundation writes that development in the Riverside County area has exacerbated local toxic pollution problems. They site health problems due to pollution in the area, as well.

Riverside County has been named as the #1 sprawl area in the United States. This unprecedented growth and development with its focus on making the area a major distribution center with warehouses and cargo ports places an overwhelming additional burden on the already polluted air. The massive housing tracts emerging throughout the area stresses the ability to make available water quality that is safe and healthful to current residents, as well as new residents.

Air Quality. The combination of geographical features and high levels of pollutants produced in the region have resulted in the Environmental Protection Agency (EPA) designating the air basins in Riverside County as non-attainment areas. This means that due to the high level of pollutants in the region, the area is not expected to meet National Ambient Air Quality Standards in the near future.

The World Health Organization (WHO) identifies the Inland Counties as having the 4th worst particulate pollution in the world – only after Jarkarta, Indonesia; Calcutta, India; and Bangkok, Thailand. The Riverside and San Bernardino areas have the highest levels of particulate pollution in the nation.

Water Quality. Riverside County incorporates four major watershed areas in which river systems, numerous lakes and reservoirs, and natural drainage areas are located. The County's supply of water is limited by its arid climate; agricultural practices; projected population growth, and its associated demand and development; and the dependence on low quality imported water. Further, the availability of imported surface water has been reduced due to changing regulations, despite an ever-increasing water demand. In some areas within Riverside County, contamination from natural or manufactured sources has reduced groundwater quality such that its use requires treatment.

Water quality problems that have occurred in Riverside County have related to:

- inadequate subsurface sewage disposal,
- waste disposal management of the Santa Ana River,
- agriculturally-related problems such as citricultural runoff in the western County and increasing salinity of the desert groundwater basins,
- sediment buildup of water bodies from construction-related erosion,
- lake water quality problems, and
- pollution due to urban stormwater system runoff

More than 7 million Californians drink water contaminated with perchlorate (a major component of Rocket Fuel) placing millions of children at risk of developmental, metabolic, immune system damage--and even cancer--with exposures at very low levels. Locally, more than 53 drinking water wells have been closed due to contamination from perchlorate with three major plumes affecting Glen Avon, Mira Loma, and Pedley.

Risk Assessment

Despite significant success in reducing overall pollution levels, air pollution continues to be an important public health problem in Riverside County. For the fourth year in a row (2003), the metropolitan Los Angeles area, *which includes Riverside County*, was designated as the smoggiest area in the country by the American Lung Association. Although the number of days Riverside County experienced unhealthy levels of ozone pollution has improved, from 142 days between 1996 and 1998 to 78 days between 1999 and 2001, officials with the American Lung Association say the "slight improvements" seen recently may be weather related. By next year, when numbers from 2002's studies become available, officials say they expect the number of days with unhealthy air pollution to be higher again due to last year's warm summer. The pollutants are also expected to increase due to large influxes of commuting residents.

Mira Loma, Glen Avon and Rubidoux in Riverside County sit in the region's dirtiest pocket of particulate pollution. The communities get hit by pollution from dairies, which emit ammonia compounds, as well as from vehicle exhaust. In recent years, the warehouse industry has grown substantially in the Mira Loma area, causing unhealthful increases in diesel fuel emissions. In 2000, researchers with USC's medical school blamed the particulate pollution for stunting the lung development of Mira Loma children.

With the anticipated growth in Riverside County, water supply, water quality, and adequate water facilities will continue to be critical issues.

- **Effects on people and housing.** The quality of the air that people breathe and water that they drink directly affects their health, environment, economy and quality of life. An overabundance of pollutants in air or water can cause mild to severe health effects, including increased hospitalization and emergency room visits, respiratory illnesses, increased risk of developing cancer, decreased breathing capacity, lung inflammation, difficulty in exercising, and even a reduction in life-span.

- **Effects on commercial and industrial structures.** Pollutants may cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

- **Effects on agriculture.** The County's agricultural industries include cattle, poultry, and crops. Each of these industries can cause significant soil and water contamination through fecal matter and pesticides.
  In addition, just as people are affected by air and water pollution, so too are plants and animals. Animals must breathe the same air and, for the most part, drink the same water, and are subject to the same types of negative health effects as humans. Certain plants and trees may absorb air or water pollutants that can stunt their development or cause premature death.

  Moreover, the agricultural industry is dependent on an adequate water supply. Although many crops are not as water-dependent as animals are, some ground and vine crops have a very short life-span without an adequate water supply. Short-term water supplies can be provided to animals through the use of water trucks, for example; however, these means will not suffice to support large crops.

Risk Assessment Conclusion

Air and water pollution are significant hazards for the County. Soil contamination is a risk, as well.

While there are risks to humans, animals, and plants as noted above, there are also numerous impacts to the economy including lost work days due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs.

Relationship to Other Hazards – Cascading Effects

Cascading effects of toxic pollution are limited.

Hazard Mitigation Goals and Strategies

Air Quality. The following provides background on plans required by legislation:

The Federal Clean Air Act (1977 Amendments) requires that designated agencies in any region of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. In response, the Governor of California designated agencies to develop these plans.

For the South Coast Air Basin and the Salton Sea Air Basin, the agencies designated to develop regional air quality plans are the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG). T he two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and have revised it several times subsequently, as earlier attainment forecasts were shown to be overly optimistic.

The latest AQMP, approved in 1997, was designed to meet both federal and state air quality planning guidelines. Strategies for controlling air pollutant emissions in the AQMP are grouped into three "tiers," based on their anticipated timing for implementation. Tier 1 consists of the implementation of best available current technology and management practices that can be adopted within five years. Tier II is based on anticipated advancement in current technology and vigorous regulatory action, while Tier III controls consist of implementation measures which first require the development of new technologies.

Equivalent regional air quality plans were created for the Mojave Desert Air Basin by the Mojave Desert Air Quality Management Basin (MDAQMD) in conjunction with SCAG. In 1998, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA requires regional emissions to be reduced by 5% per year, averaged over a 3-year period, until attainment can be demonstrated. Each region that did not meet a national or state air quality standard was required to prepare a plan which demonstrated how the 5% reductions were to be achieved.

The MDAQMD adopted its Air Quality Attainment Plan in 1995 to meet state ozone standards and the Attainment Demonstration Plan in 1996 to meet federal ozone standards. While the Mojave Desert Air Basin is classified by the state as a non-attainment area for PM10 (coarse particles larger than 2.5 but smaller than 10 micrometers), state law does not require an air quality plan to meet this standard, and as such, no plan has been adopted.

The Air Quality Element of the General Plan and the Air Quality section of the General Plan Draft Program Environmental Impact Report enumerate many policies aimed at improving air quality.

Water Quality. Water Quality Control Boards for Regions 7, 8, and 9 provide state-level water quality policy for the County. Further, the National Pollutant Discharge Elimination system mandates Best Management Practices in order to effectively minimize the adverse effects of pollution and protect water quality. The Multipurpose Open Space Element of the General Plan enumerates water quality policies aimed at:

- Encouraging innovative and creative techniques for wastewater treatment, including the use of local water treatment plants,
- Encouraging wastewater treatment innovations in rural areas, and
- Minimizing pollutant discharge into storm drainage systems, natural drainage, and aquifers.

Hazard: Nuclear Incidents

County Severity Rating: 4	County Probability Rating: 2

OA Jurisdictions Affected by Nuclear Incidents

- Alvord Unified School District
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
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- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

There are three general situations that could affect Riverside County, namely:

- A situation involving nuclear weapons, which is discussed in the Terrorism section of this LHMP;
- A situation involving the transportation of nuclear materials; and
- An incident involving the San Onofre Nuclear Generating Station (SONGS).

As will be discussed in the Terrorism section of this LHMP, the possibility exists that a terrorist organization might acquire the capability of creating a small nuclear detonation. A single nuclear detonation in the United States would likely produce fallout affecting an area many times greater than that of the blast itself. There is also the possibility that a terrorist will construct a "dirty bomb", a bomb that is used to distribute nuclear contaminated materials. It would have less of an effect than a "traditional" nuclear bomb, but the terror effect on the population would be great.

A nuclear incident could be initiated by a transportation emergency, either accidental or intentional. See the Transportation Emergencies section of this LHMP.

SONGS is located on the Pacific Coast in northwestern San Diego County, approximately 4 miles southeast of the City of San Clemente. Surrounding San Onofre is a Basic Emergency Planning Zone, approximately 10 miles in radius within which certain precautionary actions must be taken and specific precautionary plans must be prepared. This zone does not include any portion of Riverside County. Beyond this zone is a Public Education Zone (PEZ) approximately 20 miles in radius in a northeasterly direction that does include the extreme southwestern tip of Riverside County. Within this area, residents are provided a public education program concerning the related hazards and protective actions that might result from an accident at SONGS. Beyond this zone is an area that could be affected by radioactive fallout being deposited in such a manner as to detrimentally affect the human food chain, which includes all of Riverside County. This area is identified as the Ingestion Pathway Zone. Specifically, the primary threat is that of radioactive iodine 131 being deposited upon fodder consumed by dairy cows and subsequently appearing in the milk at the public marketplace.

History

Fortunately, Riverside County has not yet experienced a nuclear accident.

Risk Assessment

Transportation of nuclear and/or irradiated materials is of growing concern. A severe transportation incident could require the evacuation of a large number of people, major rerouting of traffic systems, and an expensive decontamination process for the area involved. Ancillary problems associated with such an incident are discussed in the sections of this LHMP dealing with Hazardous Materials and with Transportation Incidents.

A detailed discussion of radiation hazards and their effects on humans along with a description of the operation of a nuclear power generating facility and the hazards posed thereby are contained in the State of California Nuclear Power Plant Emergency Response Plan and in other documents.

The State Nuclear Power Plant Emergency Response Plan assigns to the County of Riverside responsibility for certain actions to protect the public and the environment within Riverside County from the effects of an accident. The plan also lists the support and assistance available from various State and Federal organizations.

- **Effects on people and housing.** Depending on levels of radiation exposure, the effects could range from minimal to devastating.

- **Effects on commercial and industrial structures.** Depending on levels of radiation exposure, the effects could range from minimal to devastating.

- **Effects on infrastructure.** Depending on levels of radiation exposure, the effects could range from minimal to devastating.

- **Effects on agriculture.** Depending on levels of radiation exposure, the effects could range from minimal to devastating.

Risk Assessment Conclusion

The County is far enough away from nuclear power plants that cataclysmic exposure is not likely. Hills and mountains between the County and the nearest plant (San Onofre) could further mitigate the effects of an accident. There is the possibility of Riverside County being used as a major evacuation route from a nuclear plant accident. This would tax the County's response resources. The radiation from an accident would, of course, negatively affect the area.

Relationship to Other Hazards – Cascading Effects

Cascading effects of a nuclear incident could include contaminated water, air, and soil.

Hazard Mitigation Goals and Strategies

The Nuclear Regulator Commission (NRC) regulates the operation of nuclear power plants in the Unites States. The NRC is responsible for ensuring that the nuclear power plants in California are safe from hazards such as earthquakes and fires, as well as hazards from hostile sources such as terrorism. FEMA evaluates the ability of local and state governments to protect the public in the event of a nuclear power plant emergency.

State and local governments having jurisdiction within ten miles of an operating nuclear power plant must plan, train, and conduct emergency exercises annually in accordance with federal regulations. Detailed emergency plans are maintained by each affected agency.

Riverside County is part of the SONGS plan, primarily for evacuation.

Due to strict regulation of nuclear power plants in the United States, significant nuclear power incidents that can cause harm to the public have low probability of occurrence, and none have occurred in California.

Since 9/11, numerous anti-terrorism programs and policies have been put into effect in Riverside County by law enforcement, fire, public health, and other departments.

As noted in the Transportation Emergencies section of this LHMP, highways, railroads, and airports are considered elements of Riverside County's critical infrastructure. There are a number of policies within the Safety Element of the General Plan aimed at strengthening the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to encourage structural and nonstructural design and construction for critical infrastructure. These policies will help reduce the potential for a nuclear incident as a result of a transportation incident.

Hazard: Civil Unrest

County Severity Rating: 2	County Probability Rating: 2

OA Jurisdictions Affected by Civil Unrest

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Lake Elsinore Unified School District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

Civil Unrest is any incident intended to disrupt community affairs and threaten the public safety. Civil Unrest includes riots, mob violence, and any demonstration resulting in police intervention and arrests. Civil Unrest is generally associated with controversial political, judicial, and/or economic issues and events.

History

Riverside County is not a place where there have been a lot of historic civil disturbance events of noticeable magnitude. There are locations within Riverside County where large public gatherings take place. These locations have the potential for unstable conditions, possibly affecting the ability of a jurisdiction in the County to provide sufficient law enforcement and fire protective services.

Risk Assessment

During a Civil Unrest incident that affects Riverside County, there are certain critical facilities within the County that may be more at risk than others. These critical facilities include venues for musical concerts and sporting events, facilities where legal and illegal demonstrations are held, and any other facilities with events that attract large numbers of people. All of these situations create significant traffic congestion and the potential for disruptive behavior.

- **Effects on people and housing.** The effects of a Civil Unrest are varied and usually based upon the type, severity, scope, and duration of the disturbance. Effects may include illegal assemblies, injuries, and even loss of life.

- **Effects on commercial and industrial structures.** Effects may include traffic congestion or gridlock, illegal assemblies, disruption of utility service, and property damage.

- **Effects on infrastructure.** Effects may include traffic congestion or gridlock, disruption of utility service, and property damage.

- **Effects on agriculture.** Effects may include traffic congestion or gridlock, disruption of utility service, and property damage.

Risk Assessment Conclusion.

The overall risk of civil unrest in Riverside County is low.

Relationship to Other Hazards – Cascading Effects

Civil Unrest may lead to fire, destruction of property, disruption of power, injury to persons, and even loss of life.

Hazard: Jails and Prisons Incidents

County Severity Rating: 1	County Probability Rating: 2

OA Jurisdictions Affected by Jails and Prisons Incidents

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of Lake Elsinore
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Lake Elsinore Unified School District
- Menifee Unified School District
- Moreno Valley Unified School District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District

Hazard Definition

There are numerous State of California Correctional Institutions and County correctional facilities in Riverside County. Law enforcement is tasked with maintaining order in the facilities and preventing inmates from escaping into the community.

Chuckawalla Valley State Prison in Blythe provides long-term housing and services for male felons classified as medium and low-medium custody inmates.

The California Rehabilitation Center (CRC) in Norco is a medium Level II correctional facility and is the only adult facility that accommodates both male and female inmates (in separate facilities). The CRC inmate population consists of felon commitments as well as Civil Addicts.

The California Institution for Woman (CIW) in Chino accommodates all custody levels of female inmates and functions as a reception/processing center for incoming female inmates. In addition to its large general population, CIW houses inmates with special needs such as pregnancy, psychiatric care, methadone, and medical problems such as HIV infection.

The California Institution for Men in Chino consists of four separate facilities under the administration of one warden. Located three miles south of the city of Chino, the facilities provide housing for minimum through medium custody inmates. The reception centers receive and process newly committed male felons from several southern California counties. The California Youth Authority operates a facility in Chino. While all of these facilities are in the County of San Bernardino, their close proximity to Riverside County and the City of Corona necessitate their inclusion here as facilities of concern to Riverside County.

Ironwood State Prison in Blythe provides services for minimum and medium custody inmates through academic education, vocational instruction, and support services. The prison also has the Institutional Hearing Program (IHP) which prepares inmates who are illegal immigrants for release to United States Immigration and Naturalization Service custody and the return to their native country.

In addition, there are four County jail facilities, namely:

- Robert Pressley Detention Center
- Blythe Jail
- Indio Jail
- Southwest County Jail (Murrieta)

History

Historically, the threat to society has been low. Law enforcement has demonstrated an overall capability to maintain the incarcerated population in a manner that does not pose an immediate threat to the general population.

Risk Assessment

It is important that law enforcement remain in a state of readiness for any incidents that could precipitate a threatening situation.

Riots within the facilities generally do not pose a direct threat to the public on the outside. Occasionally an inmate has escaped correctional facilities. The danger involved in their escape is predicated on the escapee's criminal characteristics.

A prison ward incident at Riverside County Regional Medical Center could have a severe impact on health care delivery at the facility during and immediately after the incident. The degree of disruption would, of course, depend on the extent of the incident.

- **Effects on people and housing.** Relatively speaking, the risks are minimal.
- **Effects on commercial and industrial structures.** The risks are minimal.
- **Effects on infrastructure.** The risks are minimal.
- **Effects on agriculture.** The risks are minimal.

Risk Assessment Conclusion.

Relatively speaking, the risks of jail and prison incidents are low. It is important that law enforcement remain in a state of readiness for any incidents that could precipitate a threatening situation.

Relationship to Other Hazards – Cascading Effects

Risks are minimal.

Hazard: Terrorism

County Severity Rating: 4	County Probability Rating: 2

OA Jurisdictions Affected by Terrorism

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley
- City of Murrieta
- City of Norco
- City of Palm Desert
- City of Palm Springs
- City of Perris
- City of Rancho Mirage
- City of Riverside
- City of Temecula
- Home Gardens County Water District
- Idyllwild Water District
- Lake Elsinore Unified School District
- Lee Lake Water District
- Menifee Unified School District
- Moreno Valley Unified School District
- Murrieta County Water District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- San Jacinto Unified School District
- Valley Sanitation District

- Western Municipal Water District

Hazard Definition

Terrorism is the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion or ransom. Terrorists often use threats to create fear among the public, to try to convince citizens that their government is powerless to prevent terrorism, and to get immediate publicity for their causes.

Terrorist acts or and acts of war may cause casualties, extensive property damage, fires, flooding, and other ensuing hazards.

Terrorism takes many forms, including:

- Chemical
- Biological
- Radiological
- Nuclear
- Explosive
- Cyber-terrorism

Chemical. Chemical weapons have been used primarily to terrorize an unprotected civilian population and not as a weapon of war. This is because of fear of retaliation and the likelihood that the agent would contaminate the battlefield for a long period of time.

Some analysts suggest that the possibility of a chemical attack would appear far more likely than either the use of nuclear or biological materials, largely due to the easy availability of many of the necessary precursor substances needed to construct chemical weapons. Additionally, the rudimentary technical knowledge needed to build a working chemical device is taught in every college level chemistry course in the world.

Some chemical agents are odorless and tasteless and are difficult to detect. They can have an immediate effect (a few seconds to a few minutes) or a delayed effect (several hours to several days).

Biological. Biological weapons are defined as any infectious agent such as a bacteria or virus used to produce illness or death in people, animals, or plants. This definition is often expanded to include biologically-derived toxins and poisons. Biological agents can be dispersed as aerosols or airborne particles. Terrorists may use biological agents to contaminate food or water because the agents are extremely difficult to detect.

Radiological. A radioactive material is a material made up of unstable atoms which give off excess energy in the form of radiation through the process of radioactive decay.

Radiation cannot be detected by human senses. Wherever radioactive materials are used, transported, or stored there is a potential for a radiological accident to occur. Some of their most common uses include use:

- By doctors to detect and treat serious diseases.
- By educational institutions and companies for research.
- By the military to power large ships and submarines.
- By companies in the manufacture of products.
- As a critical base material to help produce the commercial electrical power that is generated by a nuclear power plant.
- As one of the critical components in nuclear weapons, which are relied upon to help deter the threat of war.

Nuclear. The possibility exists that a terrorist organization might acquire the capability of creating a small nuclear detonation. A single nuclear detonation in the United States would likely produce fallout affecting an area many times greater than that of the blast itself. There is also the possibility that a terrorist will construct a “dirty bomb”, a bomb that is used to distribute nuclear contaminated materials. It would have less of an effect than a “traditional” nuclear bomb, but the terror effect on the population would be great.

Explosive. The possibility exists that a terrorist may attack with conventional explosives, particular in a public setting. Innumerable incidents have occurred around the world involving car bombs, truck bombs, and bombs attached directly to terrorist individuals.

Cyber-terrorism. Cyber-terrorism is the use of computer network tools to shut down critical government infrastructures such as energy, transportation, and government operations, or to coerce or intimidate a government or civilian population. The premise of cyber terrorism is that as nations and critical infrastructure became more dependent on computer networks for their operation, new vulnerabilities are created. A hostile nation or group could exploit these vulnerabilities to penetrate a poorly secured computer network and disrupt or even shut down critical public or business operations.

The goal of cyber terrorism is believed to be aimed at hurting the economy of a region or country, and to amplify the effects of a traditional physical terrorist attack by causing additional confusion and panic.

History

Fortunately, Riverside County has no history of incidents of chemical, biological, radiological, nuclear, or explosive terrorism.

The County has been impacted – as has the rest of the world – by recent computer viruses and worms.

Risk Assessment

Chemical. A terrorist would not have to build a complicated chemical release device. During favorable weather conditions, an already existing chemical plant could be sabotaged or bombed releasing a toxic cloud to drift into a populated area. The result could be just as dangerous as having placed a smaller chemical device in a more confined space. This type of incident would cause the maximum amount of fear, trepidation, and potential panic among the civilian population, and thus achieve a major terrorist objective.

Biological. The agents are cheap, easy to make, and simple to conceal. Even small amounts, if effectively deployed, could cause massive injuries and overwhelm emergency rooms. The production of biological weapons can be carried out virtually anywhere — in simple laboratories, on a farm, or even in a home.

However, experts say it remains very difficult to transform a deadly virus or bacterium into a weapon that can be effectively dispersed. A bomb carrying a biological agent would likely destroy the germ as it explodes. Dispersing the agents with aerosols is challenging because biomaterials are often wet and can clog sprayers. Most agree that, while a biological attack could be devastating in theory, in reality, the logistical challenges of developing effective agents and then dispersing them make it less likely a terrorist could carry out a successful widespread assault.

Radiological/Nuclear. Under extreme circumstances an accident or intentional explosion involving radiological materials can cause very serious problems. Consequences may include death, severe health risks to the public, damage to the environment, and extraordinary loss of, or damage to, property.

Explosive. While generally more limited in the extent of the damage inflicted, explosive terrorist attacks may have consequences including death and damage to property.

Cyber-terrorism. Recent incidents illustrate the County's vulnerability to cyber-terrorism.

- **Effects on people and housing.** Depending on levels of contamination and exposure, effects could range from minimal to devastating.
- **Effects on commercial and industrial structures.** Depending on levels of contamination and exposure, effects could range from minimal to devastating.
- **Effects on infrastructure.** Nuclear, radiological, and cyber-terrorism can have profound effects on infrastructure.
- **Effects on agriculture.** Depending on levels of contamination and exposure, effects could range from minimal to devastating.

5. Riverside County Multi-Jurisdictional Action Plan

Mitigation Action Plan Requirements Cross-Reference Table

Element	Requirement	Riverside County LHMP Response
Implementation of Mitigation Actions - A	Mitigation Strategy Includes How Actions are Prioritized	Pages 172 – 173
Implementation of Mitigation Actions - B	Mitigation Strategy Addresses How Actions will be Implemented and Administered	Page 173
Implementation of Mitigation Actions - C	Prioritization Process Includes an Emphasis on the Use of a Cost-Benefit Review	Pages 172 – 173 Part II by Jurisdiction
Multi-Jurisdictional Mitigation Actions	At Least One Identifiable Action Item for Each Jurisdiction Requesting FEMA Approval of the Plan	• Page 173 • Appendix D - Mitigation and Strategies for County Departments • Part II by Jurisdiction

The process used to prioritize mitigation strategies involved lengthy discussions with various jurisdictional stakeholders, followed by citizen and community review. The end result is a hazard mitigation action plan with a prioritized list of strategies that Riverside County and the other participating jurisdictions expect to carryout during the next five years.

The County and each Submitting Jurisdiction utilized a Cost - Benefit process to determine the potential cost and benefit to their strategy.

Prioritizing Strategies

The process used by the County to prioritize goals and their respective objectives consisted on an extensive evaluation of the hazards and their threat by the RCIP planning group and the RCIP consultants. The initial RCIP information was used by County OES to develop a prioritized list from the County Departments and the members of the LHMP working groups. Available resources and public input were also considered. The County next assessed each strategy listed under the prioritized list of goals, ranking them in a Low, Medium, or High category.

In assessing and evaluating each strategy, Riverside County and the Participating Jurisdictions considered the following factors:

1. The cost was justified
2. Financial resources were available; local or outside resources
3. Staff resources were adequate
4. Minimal impact on County department functions
5. Strategies mitigate risks for the riskiest hazard events
6. Strategies reflect the goals and objectives

Riverside County then prepared a draft action plan that listed goals followed by a prioritized list of strategies which included the principal contact and cooperating parties, the cost, and the time involved in carrying out the strategy. This step involved lengthy discussions with County departments and staff, and with staffs within participating jurisdictions.

Implementation

Each year the action plan will be revisited and the first year will be dropped as those activities are completed and another year will be added so that the action plan always reflects a five-year time frame and remains current. Strategies undertaken and completed will be evaluated as to their effectiveness. Those activities not completed during the first year will be re-evaluated and included in the first year of the new action plan if still appropriate.

Even though individual strategies have been assigned a principal contact to ensure implementation, overall responsibility, oversight, and general monitoring of the action plan has been assigned to County OES. County OES will provide periodic updates to the County Board of Supervisors.

This action plan serves as a guide to spending priorities but will be adjusted annually to reflect current needs and financial resources. Some strategies will require outside funding to implement. If outside funding is not available, then the strategy will be set aside until new sources of funding can be identified.

6. Plan Maintenance

Plan Maintenance Requirements Cross-Reference Table

Element	Requirement	Riverside County LHMP Response
Monitoring, Evaluating, and Updating the Plan – A	Description of the Method and Schedule for Monitoring Plan	Pages 203 - 205
Monitoring, Evaluating, and Updating the Plan – B	Description of the Method and Schedule for Evaluating the Plan	Pages 203 - 205
Monitoring, Evaluating, and Updating the Plan – C	Description of the Method and Schedule for Updating the Plan within the Five-Year Cycle	Pages
Incorporation into Existing Planning Mechanisms - A	Identification of Other Local Planning Mechanisms Available for Incorporating the Requirements of the Mitigation Plan	Page 203 - 205
Incorporation into Existing Planning Mechanisms - B	Identification of Process by Which Riverside County will Incorporate the Requirements of Other Plans, When Appropriate	Page 203 - 205
Continued Public Involvement – A	Explanation of How Continued Public Participation will Be Obtained	Page 203 - 205

County OES will continue to participate in the RCIP Planning process. This process is expanding daily and regularly involves public comment. There is a "Public Comment" link at the top of the front page of the RCIP Website, specifically designed for input from the community. A similar input link will be part of the County OES Website were the LHMP Plan will be posted. Links to the LHMP will be posted on other County Websites. Notices of meetings will be listed on this page so that members of the general public interested in disaster preparedness can attend local meetings.

All of the "Submitting Jurisdictions" have agreed to remain a part of the group that was organized to create the LHMP. They have agreed to participate in the planning meetings as well as to expand the use of input from the general public by having more meeting and expanding the groups involved in the planning process. County OES and their partners have made a strong commitment to expand the process of public involvement through the use of additional public meeting, website posting, and further involvement community groups such as CERT, Neighborhood Watch, etc.

Riverside County OES has developed a method to ensure that regular review and update of its Local Hazard Mitigation Plan (LHMP) occurs at least every two years. FEMA regulations require an update every five years. County OES has established a tentative activity list for the next two years bases on issued found during the development of the initial Plan. These activities include:

2005
Develop a hazard identification section for the LHMP addressing EMS and Public Health issues.

Continue to develop a "standard value" list for critical facilities.

Purchase the necessary computer and ArcView programs to support HAZUS MH and identify data from County GIS to add to the working database.

2005 - 2006
Creation of a "Know Your Hazards" page on the County OES website to better inform the public about the hazards in and around Riverside County.

2006
Develop a hazard identification section for the LHMP addressing the issues of insect infestation

Additionally, County OES will utilize the Operational Area Planning Committee to poll the agencies in the County to see if they want to continue to participate and if their elements of the plan are up-to-date.

Factors that will be considered in evaluating whether an LHMP update is required are:
- Relevance of LHMP goals and objectives to the evolving situation in Riverside County
- Consistency of LHMP goals and objectives with changes in State and Federal policy
- Relevance of LHMP goals and objectives to current and expected conditions.
- Additional data developed through the RCIP Planning process.

The risk assessment portion of the plan will be reviewed to determine if the information should be updated or modified. The parties responsible for the various implementation actions will report on:
- Status of their projects
- Implementation processes that worked well
- Any difficulties encountered
- How coordination efforts are proceeding
- Which strategies should be revised.

As new and revised mitigation strategies and goals are developed for hazard areas, those strategies, goals, and associated action plans will be included in LHMP revisions.

The Hazard Mitigation Plan Evaluation Committee members are responsible for the annual review and update of the plan. Although they represent the public to some extent, the public will be able to directly comment on and provide feedback about the plan in a manner similar to that used during the review of this initial plan.

Riverside County currently uses comprehensive land use planning, capital improvements planning, and building codes to guide and control development within the County. The hazard mitigation strategies of the Riverside County General Plan have been integrated into this LHMP. This LHMP will be provided to those responsible for the County's General Plan development mechanisms to insure that consistency is maintained. Whenever there are substantive changes to this LHMP, those involved in other relevant planning mechanisms in the OA will be included the review process.

Copies of the most up-to-date, approved plan will be kept on hand at County OES and the County Library. These copies of the plan will include the address and phone number of the County OES staff member responsible for tracking public comment. Between official revisions, County OES will maintain any substantive changes and pending updates.

APPENDIX A

Appendix A: Additional Participating Jurisdictions and Participants

This is a list of those jurisdictions who did not become "Submitting Jurisdictions" and a list of names of some of the people who participated in one or more of the working groups as a part of the development this LHMP.

Jurisdictions Participating As Members of the Various Workgroups:

- Banning Unified School District
- Burlington Northern and Santa Fe Railroad
- Cabazon Water District
- Cahuilla Band of Indians
- California Department of Food and Agriculture – Animal Health
- California Department of Transportation (Caltrans)
- California Highway Patrol (CHP)
- California State Parks
- Chiriaco Summit Water
- Coachella Valley Vector Control
- Corona/Norco Unified School District
- Corona Regional Medical Center
- Desert Sands Unified School District
- City of Redlands
- College of the Desert
- Desert Unified School District
- Eastern Municipal Water District
- Eisenhower Hospital
- Elsinore Water District
- Hemet Unified School District
- Idyllwild Water District
- Imperial Irrigation District
- Jurupa Community Service District
- Jurupa Unified School District
- Lake Elsinore Unified School District
- March Air Reserve Base
- Northwestern Vector Control
- Perris Union High School
- Pinyon Pines County Water District
- Riverside County Building and Safety
- Riverside County Dairymen's Association
- Riverside County Department of Health Services
- Riverside County Emergency Medical Services
- Riverside County Farm Bureau
- Riverside County Fire Department
- Riverside County Flood Control and Water Conservation District

- Riverside County Sheriff
- Riverside County Transportation and Land Management Agency
- Riverside County Valley-Wide Recreation and Parks District
- Riverside County Waste Management Department
- San Gorgonio Memorial Hospital
- San Onofre Nuclear Generating Station (SONGS)
- Santa Rosa Community Service District
- Southern California Edison (SCE)
- United States Department of Agriculture (USDA)
- University of California – Davis – UC Extension
- University of California at Riverside
- Val Verde Unified School District
- West Valley Water District

Participants representing the County and other jurisdictions:

Sam	Goeps	General Manager	Valley-Wide Recreation & Park District
Richard	Kimberlin	Program Manager	USDA Forest Service Pacific Southwest Research Station
Fredric	Lynch	Emergency Management Specialist	University of California Riverside
John	Chavez	Manager Environment Operations	Burlington Northern and Santa Fe Railway Company
Maureen	Bowling	Disaster Coordinator	Southwest Healthcare System
Linda	Bradley	Chief Operating Officer	Southwest Healthcare System
David	Nelson	Environmental Health & Safety T&D Environmental Services	Southern California Edison
Ed	Lisle	Tribal Safety Environmental/Public Health	Soboba Indian Reservation
Andrew	Masiel	Tribal Administrator	Soboba Band of Luiseno Indians
John	Rogers	General Manager	Santa Rosa Community Services District
Charles	Pilkington	Maintained Supervisor	San Jacinto USD
Peg	Noble	Administrative Assistant	San Gorgonio Pass Water Agency
Sam	Vieths	E.A. Coordinator	San Gorgonio Memorial Hospital
Don	Larkin	C.E.O.	San Gorgonio Memorial Hospital
Bobbi	Duffy	Executive Assistant	San Gorgonio Memorial Hospital
Kirk	Lewis	Assistant Superintendent, Operations	Riverside Unified School District
Joe	McCann	General Manager-Chief Engineer	Riverside County Waste Management Department
Fernando	Vizcarrce	Assistant Hospital Administrator	Riverside County Regional Medical Center
Cookie	Cunningham	ITO	Riverside County Regional Medical Center
Mike	Bowers	Hospital Safety Officer	Riverside County Regional Medical Center
Warren	Williams	General Manager-Chief Engineer	Riverside County Flood Control District
Steve	Stump	Chief of Regulatory Division	Riverside County Flood Control District
Ken	Consaul	Staff Analyst	Riverside County Flood Control District
Mark	Berg	Building Inspector supervisor	Riverside County Building and Safety
Larry	Hernandez	Program Development Specialist-Emergency Services	Riverside Co. Office of Education Children's Services Unit
Thomas	Huss	General Manager	Pinyon Pines County Water District
David	Heard	Safety & Security Director	Perris Union High School District
Keith	Grindle	Director of Plant Operations	Parkview Community Hospital
Michael	Matteson	President, Board of Directors	Murrieta County Water District
Richard	Clifford	Director of Maintenance & Operations	Mt. San Jacinto Community College District
Robert	Crank	Assistant Superintendent, Business Services	Moreno Valley, USD
John	Baldaray	Director, Warehouse/Emergency Operations	Moreno Valley, USD
Gary	Brockman	Director of Operations	Mission Springs Water District
Daniel	Wood	Assistant Superintendent	Menifee USD
Bruce	Shaw	Facilities Coordinator	Menifee USD
Robert	Lindquist	General Manager	Lake Hemet Municipal Water District
Geneva	Krog	Safety Coordinator	Lake Ellsinore Unified School District
Rick	Davis	Safety Manager	Kaiser Hospital
Robert	Iverson	Risk Manager	Jurupa USD
Denise	Waldie	Operations Assistant	Jurupa Community Services District
Richard	Feuerstein	Supervisor, Safety Services	Imperial Irrigation District
Richard	Beck	Assistant Superintendent, Business Services	Hemet Unified School District
Phil	Dorn	Safety/Risk Manager	Hemet Unified School District
Steven	Cordilla	Water Operation Manager	Ellsinore Water District
Michael	Bergman	Chief	Desert Sands Unified School District
Deborah	Miller	Safety Officer	Desert Regional Medical Center
Norman	Guith	Superintendent/ Principal	Desert Center Unified School District
Scott	Barber	Assistant Agency Director	County of Riverside/TLMA
Steve	Ellis	Supervisor, Student Services Division	Corona-Norco USD
Sidney	Ono	Administrative Director of Ancillary and Support Services	Corona Regional Medical Center
John	Calderone	Chief Executive Officer	Corona Regional Medical Center
Debra	Brown	Emergency Services, Emergency Preparedness	Corona Regional Medical Center
Steve	Renew	Director of Maintenance & Operations	College of the Desert
Grant	Yates	Assistant To City Manager	City of Temecula

Dave	Carlson	Fire Chief	City of Riverside Fire
Carmen	Nieves	ESC	City of Riverside
Patrick	Pratt	City Manager	City of Rancho Mirage
Joni	Almy	Executive Assistant/Deputy City Clerk	City of Rancho Mirage
Hector	Apodaca	City Manager	City of Perris
Blake	Goetz	Emergency Services Coordinator	City of Palm Springs
Gary	Rosenblum	Risk Manager	City of Palm Desert
Chuck	Skaggs	City Manager	City of Norco
Michael	Jennings	Battalion Chief	City of Murrieta
LeAnn	Coletta	Program Manager	City of Moreno Valley
Richard	Watenpaugh	City Manager	City of Lake Ellsinore
John	Hardcastle	Community Safety Manager	City of La Quinta
Sandra	Householder	Management Analyst	City of Indio
Steve	Temple	City Manager	City of Hemet
Joe	Glenn	ESC	City of Hemet
Roy	Hill	Director of Public Safety	City of Desert Hot Springs
Curtis	Showalter	Public Works Manager	City of Corona
George	Torres	Emergency Services Coordinator	City of Coachella
Steven	Sowles	Fire Chief	City of Cathedral City
Delbert	Powers	City Manager	City of Canyon Lake
Harry	Jensen	City Manager	City of Calimesa
Mitchell	White	ESC	City of Beaumont
Ted	Yarbrough	Banning Fire Services	City of Banning
Randy	Anstine	City Manager	City of Banning
Mike	Bair	Captain	CHP Riverside
Margit F.	Rusche	Board President	Chiriaco Summit Water District
Mike	Hatfield	Fire Marshall	Cathedral City Fire Department
Bassam	Karaan	Transportation Engineer	CalTrans
William	Dall	SPS III	California State Parks
Jonell	John	Environmental Coordinator	Cahuilla Band of Indians
Kenneth	Wallis	General Manager	Cabazon Water District
Bob	Grady	Chief	Blythe Police
Frank	Passarella	Superintendent of Schools	Beaumont Unified School District
Elias	Jouen	Chief Business Official	Banning Unified School District
Lisa	Rutherford	Director	Banning Public Library
Paul	Jessup	Assistant Superintendent Business Services	Alvord Unified School District
Ed	Gallard	Risk Manager	Alvord Unified School District
Robert	Mann	Public Information Officer	Coachella Valley Mosquito & Vector Control
Ron	Dye		Riverside County Sheriff
Mathew	Hickman		Riverside County Waste Management
Rex	Sharp	General Manager	Valley Sanitary District
Marcy	Chastain		County Parks District
Steve	Hickam	Safety Representative	Riverside County Waste Management Department
Richard	Greener	Director of Safety	Valley Health System
Wayne	Spencer	General Manager	Murrieta Water District
Harry	Pappo	Facility Manager	Sherman Indian High School
Frankie	Clifton		Beaumont Unified School District
Tony	Burgett	Construction Manager	Western MWD
Robert	Cornell	Director of Maintenance Operation and Transportation	San Jacinto School District
Mark	Drzemiecki	Director of Security	US Navy
Bernice	Bigelow	Resource Planning/Emergency Manager	Cleveland National Forest
Walter	Carter	Recreation/Emergency Manager	City of Perris
Mary	Petite	Cost Recovery/ Mitigation Manager	City of Redlands
Sung	Ma		Waste Management Dept
Karl	Kolodzik	Fire Chief	Morongo Fire Department

Bob	Lindstrom	Human Recourse Manager	Coachella Valley Recreation
Mark	Bernas	Manager	Riverside County Transportation Department
Bill	Eaton		Alvord USD
Angelia	Carey	Environmental Specialist	Soboba Band Of Luiseno Indians
Lynn	Rowe	Disaster Prep Analyst	Corona Fire
Kirk	Lewis	Assistant of Support-Operations	Riverside Unified School District
Michael	Bazan	Director of Safety Services	Val Verde Unified School District
Marcy	Burks	Readiness Flight Chief	March Air Reserve Base
Joseph	Glenn	ESC	Hemet
Rick.	Davis	Safety Manager	Kaiser
Bob	Prez	Supervisor Field, OP5	Corona Norco USD
Rick	Garciara	Emergency Planner	San Onofre Nuclear Generating Station
Keith	Knotek	Commander	San Jacinto PD

RISK ASSESSMENT SCORING

Severity - How bad will the event affect your jurisdiction

0. Does not apply to your jurisdiction
1. Negligible Damage and Impact (Total of 1 point) - This means there will be: (1)
    - ◊ Injuries and/or illnesses are treatable with first aid
    - ◊ Minor quality of life lost
    - ◊ Shutdown of critical facilities and services for 24 hours or less
    - ◊ No more than 1 percent of property is severely damaged.
2. Limited Damage and Impact (Total of 2 points) - This means there will be:
    - ◊ Injuries and/or illnesses do not result in permanent disability
    - ◊ Complete shutdown of critical facilities for more than 1 week
    - ◊ More than 10 percent of property is severely damaged
3. Critical Damage and Impact (Total of 3 points) - This means there will be:
    - ◊ Injuries and/or illnesses resulting in permanent disability
    - ◊ Complete shutdown of critical facilities for at least two weeks
    - ◊ More than 25 percent of property is severely damaged
4. Catastrophic Damage and Impact (Total of 4 points) - This means there will be:
    - ◊ Multiple deaths
    - ◊ Complete shutdown of critical facilities for 30 days or more
    - ◊ More than 50 percent of property is severely damaged

Probability - What are the chances of the event happening in the time listed?

0. Does not apply to your jurisdiction
1. Unlikely (Total of 1 points):
    - ◊ The possibility of the event happening is less than 1 percent in the next **100** years
2. Possible (Total of 2 points):
    - ◊ The possibility of the event happening is between 1 and 10 percent within the **next year**, OR
    - ◊ There is at least 1 chance of occurrence within the next **100** years
3. Likely (Total of 3 points):
    - ◊ The possibility of the event happening is between 10 and 100 percent within the **next year**, OR
    - ◊ There is at least 1 chance of occurrence within the next **10** years
4. Highly Likely (Total of 4 points):
    - ◊ The possibility of the event happening is very high (near 100 percent) in the next year.

Ranking

Rank all 19 of the hazards (from 1 to 19) based on what you feel is the overall greatest hazard to your jurisdiction. 1 being the event that is the greatest threat to your jurisdiction.

Notification Letter of Interest

June 2, 2004

West Valley Water District
Attn: Mitch Curtis
855 W. Baseline
P.O. Box 920
Rialto, CA 92337

Dear Mr. Curits:

On July 1, 2003, the Riverside County Fire Department's Office of Emergency Services conducted an initial Hazard Mitigation Planning meeting to discuss a multi-jurisdictional approach to writing a Hazard Mitigation Plan, as required by the Disaster Mitigation Act of 2000 (DMA 2000).

After much discussion, it was determined that the multi-jurisdictional approach would be beneficial to most everyone. For those that were able to attend, we hope you found the information to be relevant. We appreciate your interest in participating and want to remind you that we need a written letter expressing acceptance or rejection of the multi-jurisdictional approach by August 4, 2003. For those who were unable to attend the meeting, we would like to share with you a brief summary of the proceedings.

The Disaster Mitigation Act of 2000 (DMA 2000) states under §201.6, for disasters declared after November 1, 2004, a local government must have a mitigation plan approved pursuant to the section in order to receive Hazard Mitigation Grant Program project grants. This plan would better assist communities and jurisdictions in assessing their risks and vulnerabilities and identifying activities to strengthen the community in order to become less susceptible to disasters. Utilizing a multi-jurisdictional approach, we can evaluate hazards and risks on a broader scale, allowing jurisdictions with limited resources and/or funding the opportunity to accomplish this task in a more efficient way. Without a plan, the community is ineligible to apply for pre-disaster or post-disaster mitigation funds.

Enclosed you will find a form letter that may be used to assist you in writing your jurisdiction's reply which is due by August 11, 2003.

Planning serves as the essential foundation to saving lives and protecting property. Thank you for your commitment to that foundation.

If you have additional questions or need further assistance, please contact either Phillip Bardos at (909) 955-4730 or Philip McCormick at (909) 955-4720.

Sincerely,

TOM TISDALE
County Fire Chief

By: Bonnie S. Reed
Emergency Services Program Supervisor
Emergency Services Division
Office of Emergency Services

P.O. Box 1412
Riverside, CA 92502-1412
(909) 955-4700

BSR:PB:jh
Enclosure

Multi-jurisdictional
Hazard Mitigation Plan
Participation Form

Date: _____

Name of City / Agency: _____

Please check one of the boxes below:

☐ Yes, we wish to participate in the Multi-jurisdictional Hazard Mitigation Plan.

☐ No, we do not wish to participate in the Multi-jurisdictional Hazard Mitigation Plan.

Print Name & Title: _____

Signature: _____

Contact Number: _____

Appendix B:

Resources Used for Research

Appendix B: Resources Used for Research

RIVERSIDE COUNTY INTEGRATED PROJECT PLAN AND INFORMATION
http://www.rcip.org/

FEMA REFERENCES:

EOP Planning Guidance
http://www.fema.gov/onp/introstate.shtm

Planning resource center
http://www.fema.gov/fima/planresource.shtm

Mitigation Planning
http://www.fema.gov/fima/planhowto.shtm

Hazard identification and assessing potential risk and loss
http://www.fema.gov/fima/planning_toc3.shtm

Guide for All-Hazard Emergency Operations Planning
http://www.fema.gov/rrr/gaheop.shtm

FEMA/HAZUS resource page
http://www.fema.gov/hazus/dl_hzmd.shtm

FEMA Hazard site.
http://www.fema.gov/hazards/

HAZARD ASSESSMENT WEBSITES

GIS-based hazard mapping and loss estimation for Riverside County
http://geology.fullerton.edu/Faculty/wlaton/images/eeriloss.pdf

Recent hazard maps for Riverside County
http://geology.fullerton.edu/Faculty/wlaton/images/Laton.pdf

Tutorial on how to identify hazards, perform an analysis.
http://www.csc.noaa.gov/products/nchaz/htm/introc.htm

Hazard Mapping Tool:
http://www.esri.com/hazards/makemap
Hazardous materials analysis/assessment methods:

How to assess chemical hazards:
http://www.nfpa.org/PDF/Sup7.pdf?src=nfpa

Emergency Response/Hazard page for community communication
http://www.scec.org/outreach/education/internships/00/raymond/raymondreport.pdf

Herbicides:
http://dnr.metrokc.gov/wlr/lands/weeds/herbicid.htm

Onondaga County, New York: Seismic hazard assessment example
http://www.nysm.nysed.gov/gis/geo_semo97.html

Oregon: Tsunami hazard
http://www.pmel.noaa.gov/its2001/Separate_Papers/R-03_Priest.pdf

Windstorm Resource Directory

State Resources
California Division of Forestry & Fire Protection
1416 9th Street
PO Box 944246
Sacramento California 94244-2460
916-653-5123
http://www.fire.ca.gov/php/index.php

Federal Resources and Programs
National Weather Service
Los Angeles/Oxnard Weather Forecast Office
520 North Elevar Street
Oxnard, CA 93030
Forecast and weather info: 805-988-6610
Administrative issues: 805-988-6615
E-mail: Webmaster.LOX@noaa.gov
http://weather.noaa.gov/

Additional Resources

International Society of Arboriculture.
P.O. Box 3129
Champaign, IL 61826-3129
Phone: 217.355.9411
Fax: 217.355.9516
Web: www.isa-arbor.com
E-mail: isa@isa-arbor.com

Publications
WINDSTORMS: Protect Your Family and Property from the Hazards of Violent Windstorms
http://emd.wa.gov/5-prep/trng/pubed/Windstrm.pdf

Preparing Your Home for Severe Windstorms is available from
http://www.chubb.com/personal/html/helpful_tips_home_windstorm.html

Appendix C: Agriculture

Agricultural Hazards

As part of the Hazard Assessment for Agriculture, the Riverside County Agriculture Commissioner held a public meeting on July 15, 2004, to identify specific hazards and mitigation efforts relating to agriculture. Attendees included representatives from:

- University of California - Davis - UC Extension
- Riverside County Farm Bureau
- CDFA - Animal Health
- Area feed suppliers
- Local dairies and cattle ranches
- Local vector control agencies
- Local tree fruit and nut industries

The attendees conducted an identification of the various risks associated with agriculture in Riverside County, developed potential mitigation strategies related to agriculture, and identified the potential probability and severity of those hazards. In reviewing the hazards, the direct results of an earthquake or wildland fire were rated very low. The associated effects of an earthquake were rated high.

OVERVIEW OF AGRICULTURE IN RIVERSIDE COUNTY

Agriculture in Riverside County must be considered from two standpoints, namely, both as a product producer/exporter and a major economic provider to the County of Riverside. In 2002, the County ranked in the top eleven leading agricultural counties in the state, with an agricultural production value of $1.06 billion. Major agricultural industries include milk, nursery products, citrus and avocado, grapes, eggs, and dates.

The County is easily divided into two general agriculture regions (Coachella Valley/Desert and West Riverside County), with the San Bernardino National Forest acting as a natural dividing line.

Coachella Valley/Desert (CV)

Agriculture is the second largest industry in the Coachella Valley and is primarily crop-related. Over 66% of Riverside County's crop production is grown in the Coachella Valley. In addition to crop production, many supporting industries, such as packing and distribution, are located in the desert area. Coachella Valley produces 95% of all dates grown in the United States and the annual fruit crop exceeds 40 million pounds. The Valley's list of agriculture related products include:

- Ground crops (strawberries, lettuce, etc.)
- Plant Nurseries
- Turf/Sod Producers

- Citrus crops
- Fish Hatcheries (for domestic and international distribution)
- Vine crops

West Riverside County (WR)

Agriculture in the West Riverside County region is an ever-changing industry. With the large increase in housing in this area of the County over the past few years, there has been a reduction of several agriculture-related industries. This reduction is primarily in the poultry and dairy industries. The West Riverside list of agriculture related products include:

- Dairy Cattle
- Plant Nurseries
- Beef cattle and swine ranches
- Citrus crops
- Vine Crops

USDA statistics for Riverside County Agriculture for 2002 show the following:

Payroll	$16 million
Farms	3,186
Farm Acreage	572,036
Crop Value Production	$ 600 million +
Livestock, poultry value including production	$347 million +
Dairy cows	90,359
Sheep and Lambs	45,985
20 week old and older layers	5,437,142

Top Five Agricultural Products 2002		
1.	Milk	$227.8 million
2.	Nursery Products	$183.1 million
3.	Table Grapes	$103.8 million
4.	Eggs	$60.5 million
5.	Hay	$50.8 million

Agriculture-related disasters in Riverside County

Year	Disaster	Crop or animal	Known Damage amount	Region
1979-80	Wind	Avocado and Citrus Crops	$40,000.00	
1979-80	Rain/Floods (El Nino)	Olive Trees (4,200)	$319,494.00	WR.
1979-80	Rain/Floods	Sugar beets, Barley & Alfalfa	$182,711.00	WR.
1979-80	Rain/Floods	Potato Crop	$2,000,000.00	WR.
1979-80	Rain/Floods	Dairy and Livestock	$211,900.00	WR.
1982-1983	Rain/Floods (El Nino)	All agriculture		Countywide
*1990 **	*Insect Infestation-Med-fly*	*Fruit*		*Countywide*
1990-91	Freezing temperatures	Citrus, avocados, vegetables.	$15,450,000.00	Countywide
1990-91	Drought			WR
1991	Insect Infestation-white fly	Melons, squash, cucumbers,		WR
1992-93	Rain/Flood			
1993-94	Insect Infestation-Med-fly	Fruit		WR
1996	Plant disease-Karnel Blunt	Wheat		WR/Blythe
1997-98	Rain/Flood (El Nino)	Wheat	$167,000.00	WR
1997-98	Rain/Flood (El Nino)	Livestock & Dairy	$4,100,000.00	WR
1999	Freezing temperatures	Citrus	$1,630,000.00	Countywide
*1999-2002 **	*Inpect spread disease (Pierces Disease)*	*Wine Grapes*	*$16,000,000.00*	*WR*
*2001-July **	*Rain/Floods-Desert Storm*	*Misc. land & irrigation damage*	*~ $1,000,000.00*	*CV*
2002-2003	Drought	Dairy farms, dryland crops, etc		Countywide
2002	High Winds/Freeze	Avocado & Citrus Crops	$8,586,000.00	WR
2002-03	Animal Disease-END	Poultry 300,000 birds in So. Calif.		WR
2003-04	Wildfire	Nursery, various crops		WR

*.*Denotes a locally declared disaster*

IDENTIFIED HAZARDS AND HAZARD RANKING

For assessment, mitigation, and rating purposes, the assessment group divided agriculture in Riverside County into two major groups: Animals and Crops. The attached worksheet shows how the different specific hazards were rated for impact severity and the probability of the hazards occurring in the County. The table identifies the two agricultural regions of the County as well as the separation of crops and animals.

WATER-RELATED HAZARDS

For both groups, water-related hazards ranked the highest. Although many crops are not as water-dependent as animals are, some ground and vine crops have a very short lifespan without an adequate supply. Short-term water supplies can be provided to animals through the use of water trucks; however water trucks cannot support large crop areas with an adequate level of water.

Water-related issues included:

1. Local water supply (wells, holding ponds, etc.) contamination occurring either naturally or from manmade causes, and
2. Loss of water supply due to pipeline or aqueduct damage from an earthquake.

HAZMAT INCIDENTS – ON-PROPERTY AND OFF-PROPERTY

The definition for an On-Property Hazmat incident relates to improper use of chemicals, crop-dusting accidents or errors, accidental chemical spills into the ground, and other similar incidents. Off-Property Hazmat events relate to the typical transportation Hazmat incident. Both groups (animal-related and crop-related) were very concerned about the impact of an On-Property event. There was a higher level of concern about the impact of an Off-Property event for animals than for crops. Both groups rated the probability of either type of event occurring as low.

TRANSPORTATION EVENTS

Transportation events were listed as either short-term (less than 3 days) or long-term (over 3 days) and included:

1. Railroad accidents interrupting the delivery of products into the County;
2. Railroad accidents interrupting the movement of products out of the County;
3. A railroad or trucking strike; and
4. A disruption in transportation lines due to an earthquake, flood, fire, or other event.

Both groups viewed the 3-day point as critical from both an economic and operational standpoint, with the crop group indicating that the 3-day window could be reduced based on whether or not it was picking season.

Animals

Most beef and dairy ranches, chicken ranches, swine farms, and other agricultural animal facilities usually only have a 2-to-3 day supply of feed on-site. Most of the large feed providers in the County do not have more than a 3-to-5 day supply. Restocking of feed supplies is done primarily by rail to the feed providers and then by truck to the local ranches.

In addition to providing feed for the animals, the impact on the dairy farms would be immense. The time factor for the dairy farms would be almost immediate. Not being able to move milk to the milkhouse was a major concern. Dairy cows have to be milked and without the ability to transport the milk off property, that milk has to be disposed of in some way so as not to contaminate the soil or create a positive host for insects. This issue is being discussed by CDFA and local dairy producers on a statewide level.

Crops

Although many crops are time sensitive and there is a limited amount of storage space in local packinghouses, transportation issues vary based on the time of year and crop season.

INSECT INFESTATION AND DISEASE TO CROPS AND VINES

There is an ever-changing potential for damage to local crops and vines from disease and insect infestation. The County has been attacked by a wide variety of pests, insects, and diseases, and because of the diversity of the types of crops in the County, maintaining a pro-active approach has been difficult. Studies and history show that should there be a disease outbreak or contamination of crops/vines, the economic impact would be enormous. Recent events in other states have shown the potential for bans on importation of cattle/dairy products from affected states.

One of the primary concerns of the producers in the County is the illegal or uninspected importation of plants into this region. The majority of insect, pest, and disease issues in the County can be attributed to this problem.

The table below shows the primary crop-related insect infestations in the County over the past fifteen years:

NAME
AFRICANIZED HONEY BEE
BARK BEETLE
CITRUS LEAFMINER
GLASSY-WINGED SHARPSHOOTER
GYPSY MOTH
HONEY BEE TRACHEAL MITE
JAPANESE BEETLE
LESSER SNOW SCALE
MAGNOLIA WHITE SCALE
MEDITERRANEAN FRUIT FLY
ORIENTAL FRUIT FLY
PIERCE'S DISEASE
RED IMPORTED FIRE ANT
STING NEMATODE
TROPICAL PALM SCALE
VARROA MITE/HONEY BEE

ANIMAL DISEASES

There have not been recent incidents of catastrophic outbreaks of disease in the cattle/dairy industry. This is due in part to excellent precluding efforts on behalf of the cattle industry. Studies and history show that if there is an outbreak of cattle/dairy-related disease, the economic impact would be enormous. Recent events in other states have shown the potential for bans on importation of cattle/dairy products from affected states. In a short period of time, the inability to export products from the County would have wide-ranging economic effects.

The poultry industry is particularly vulnerable to the spread of disease because many fowl are kept in residential back yards and are therefore hard to monitor. Diseases can be spread by mosquitoes and/or ranch service operations that often serve more than one farm, increasing the odds of infection being spread. Recent outbreaks of the Exotic New Castle Disease in the poultry industry have resulted in the necessary depopulation of almost 100% of the chickens in the County. This disease required the quarantine of a large area of Southern California, including all of Riverside County. The economic loss to the ranchers and County as a whole has not been determined fully.

Diseases of primary concern to the area are:

- Avian Influenza
- Exotic Newcastle Disease
- Fowl Pox
- Mad Cow Disease
- Hoof-and-Mouth Disease

OTHER HAZARDS OF CONCERN

Loss of Electrical Power

The loss of electrical power is becoming more of a concern to all areas of agriculture. Depending on the season, the loss of electrical supply to a poultry ranch can be devastating within 2-to-4 hours because of the inability to keep the chickens cool. The loss of electrical power for over a 12 hour period can be devastating to a diary rancher who can not milk dairy cows.

Terrorism

One of the primary mitigation efforts that will be initiated by the County Office of Emergency Services and the Agriculture Commissioner's Office is an increased awareness program for the agricultural industry in the County on terrorism.

Appendix D: County Departments

Appendix D: County Departments
Proposed Mitigation Action and Strategy Proposal Prioritization List

The projects in this appendix were developed and prioritized by the different County Departments and then a final prioritization was made.. These proposals are a few of the proposals identified by each County Department and were selected for inclusion in the Plan because of their high priority rating among all of the County proposals. These proposals have been prioritized as follows:

1. Riverside County Office of Emergency Services - County Wide Alert and Notification System
2. Transportation and Land Management - Lucerita Ave.
3. Riverside County Flood Control And Water Conservation District - Perris Valley Master Drainage Plan
4. Riverside County Waste Management Department - Flood and Drainage Proposal

Riverside County
Flood Control and Water Conservation District

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
Contact: MEKBIB DEGAGA
Phone: 951-955-1265

MITIGATION STRATEGY INFORMATION

Proposal Name:

PERRIS VALLEY MASTER DRAINAGE PLAN

Proposal Location:

WITHIN AND AROUND THE CITY OF PERRIS

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Flooding affects the City of Perris disrupting traffic and threatening human life. Although loss of life due to this area's frequent flooding is not known, there is a potential for loss of life and has been severe property and infrastructure damage.

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

Narrative:	Various parts of the area in and around the City of Perris are subject to flooding. Perris Valley Channel, which is an interim facility, conveys storm runoff from most of the Cities of Perris and Moreno Valley. About 70 square miles is tributary to Perris Valley channel at Ramona Expressway and is about 6 miles long. Additionally various locations including the intersection of Perris Blvd and Ramona Expressway are subject to ponding water from storm water. To reduce this flooding hazard, Riverside County Flood Control District has prepared a Master Drainage Plan for the Perris Valley Area that identifies the drainage hazards and the solutions to these hazards. The plan proposes the construction of flood control facilities in stages and over many years.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
X	Local jurisdiction Special Fund (road tax, assessment fees, etc.) Area Drainage Plan Fee.
	Non-FEMA Hazard Mitigation Funds
	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

Riverside County
Office of Emergency Services

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Riverside County Office of Emergency Services
Contact: Philip Bardos
Phone: 951-955-4730

MITIGATION STRATEGY INFORMATION

Proposal Name:

County Wide Alert and Notification System

Proposal Location:

County of Riverside Emergency Operations Center

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation
X	Alert and Warning

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History — List any previous disaster related events (dates, costs, etc)

One of the most obvious problems raised by the recent Southern California fires was the difficulty in notifying the public and emergency workers of information relating to the emergency. Although all of the counties impacted by the fires had access to the local Emergency Alert System (EAS), the high volume of alerts being placed by the five counties overtaxed the system. The system works on a "first come, first announcement basis". Although all of the counties were careful to make only the highest of priority alerts, due to the large number of notifications being broadcast, some important evacuation alerts were delayed. In addition, some of the information being broadcast by local news media was incorrect. People in local communities were confused about where the fires were, what areas had been evacuated and whether they should stay in their homes or leave. The design of the EAS is based on a "wide area" notification concept that is not a problem in isolated incidents. It was in the recent situation, that the issuance of timely alerts became a problem. One of the most confusing things for the public was when one of the local media stations combined the names of two fires (our "Mountain Fire" and San Bernardino's "Old Fire") and began talking about the "Old Mountain Fire". These issues not only caused confusion and concern for the public but also greatly increased 9-1-1 activity as the public tried to find out what was happening in their area. Some additional problems identified through the recent utilization of the EAS pertain to agencies requesting staff to return to work, general emergency school closures, and the ever-changing status of shelters. With the number of alert requests by agencies for their employees to return to work or stay at home, notifications became intermingled with other requests and truly lost there effectiveness. The same was true for school closure notifications and shelters being opened or closed. Although the EAS is not the only method used for these types of notifications, it is the primary method used within the State. This event highlights the problems with public and internal agency notifications and is a reflection of the everyday issues that arise whenever there is a major event in the County.

Narrative: Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

The County of Riverside will purchase an alert and notification telephone system to be used in various emergencies to call people in the impacted area. The telephone message will provide the public with important information about the event as well as action to be taken during and after the emergency. Information input will be provided by various County departments with control points being available at the primary dispatch centers, the County's EOCs, and via the internet.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

YES — Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits?
(i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

Riverside County
Transportation and Land Management Agency – Transportation Department

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	Transportation and Land Management Agency-Transportation Department
Contact:	Mark Bernas
Phone:	(951) 955-6718

MITIGATION STRATEGY INFORMATION

Proposal Name:

Lucretia Ave Roadway Mitigation

Proposal Location:

Lucretia Ave in Mira Loma (Thomas Brother's Page 683, H-7).

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

The Proposal Area is Lucretia Ave in Mira Loma (Thomas Brother's Page 683, H-7). Lucretia currently goes over Day Creek wash. We currently have 3 - six foot diameter culverts to handle the flows down the wash that eventually dumps into the Santa Ana River. These culverts handle small flows but if we get a substantial amount of rainfall, the culverts get blown out with the road as well. This happened in the winter of 1999-2000 and 2003-2004. Homes in the area have been damaged from both water and mud flow. The last water flow in this area flooded 6 homes, requiring the residents to seek temporary shelter until the water level reseeded.

Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

Our solution is to construct a concrete box culvert with at least four cells to handle the necessary flows. The problem is funding and we estimate this Proposal's cost at approximately $500,000. If the box was in place, the road wouldn't wash out.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

X	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

HAZARD MITIGATION STRATEGY ANALYSIS
OPTIONAL COST-BENEFIT ANALYSIS WORKSHEET

Jurisdiction:	Transportation and Land Management Agency-Transportation
Contact:	Mark Bernas
Phone:	(951) 955-6718
Proposal Name:	Lucretia Ave in Mira Loma
Proposal Location:	Lucretia Ave in Mira Loma (Thomas Brother's Page 683, H-7).

Estimated Proposal Costs
List the total cost of the mitigation Proposal. Although these are estimated costs, some care should be taken to ensure the values are as accurate and comprehensive as possible.

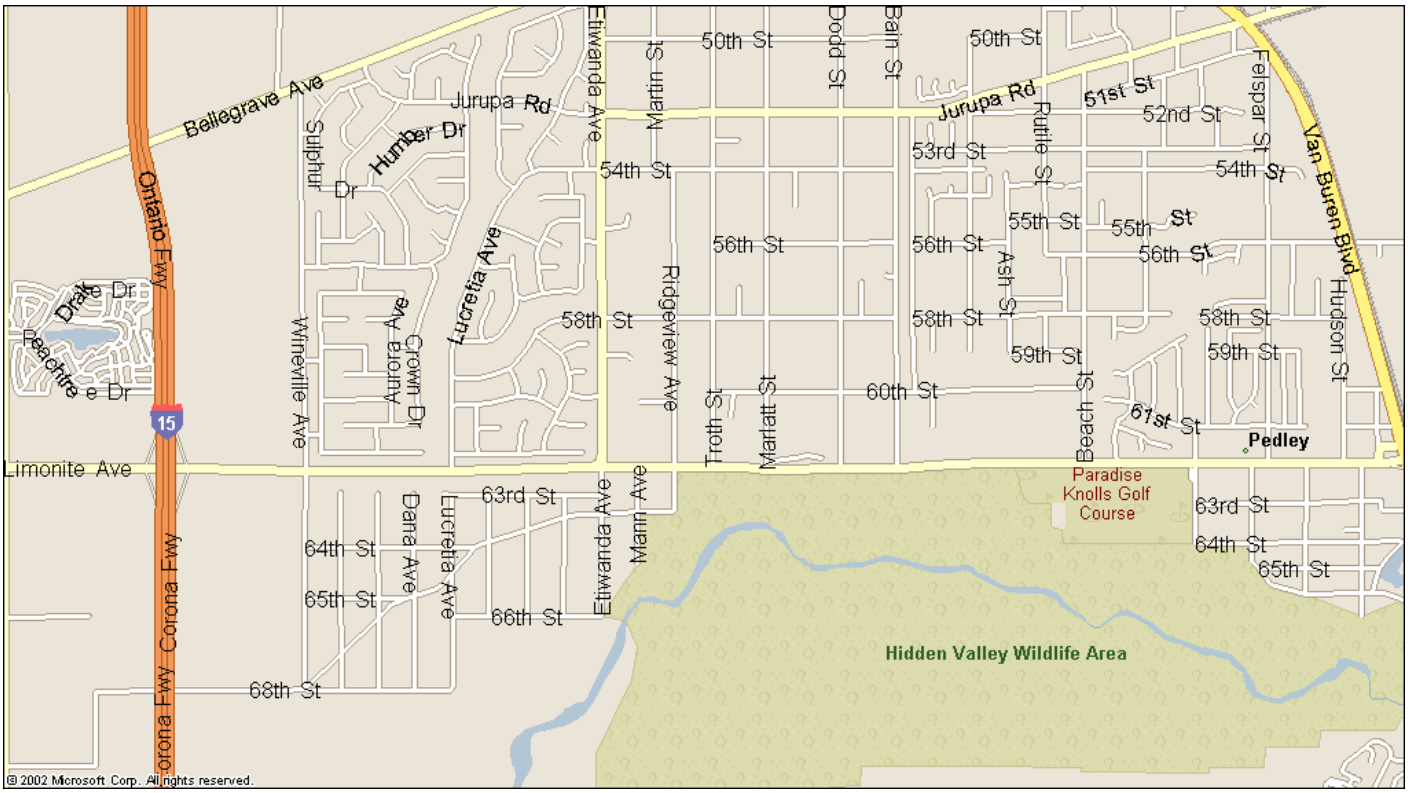
Benefit/Loss Costs - *The cost of the event should it happen.*
These costs are determined by projecting the potential damage and losses as a result of the event and include:

1. Direct Losses - Losses linked directly to a hazard event including response costs and all damages.

2. Indirect Losses - All losses other than direct losses and can include potential economic losses due to the closure of a damaged facilities, as well as non financial losses such as loss of historical resources, pain, and suffering.

LOSS/BENEFITS FACTORS

PROPOSAL COSTS		(List potential losses)	NUMBERS	COST
Labor		1. Structures		
Materials	50,0000.00	a. Destroyed	1.00	100,000
Land Acquisition		b. Damaged	4.00	200,000
Contract Services		2. Lives		
Other Costs (Please List):		a. Injured	4.00	62,400
		b. Deceased		
		3. Agriculture		
		a. Animals Injured		
		b. Animals Deceased		
		c. Crops Destroyed		
		4. Infrastructure		
		a. Destroyed		
		b. Damaged		
		5. Economic Loss		
		6. Response Costs		
		7. Other Losses or Costs (Please List)		
		Notes: 4 serious injuries @ $15,600		
		Damage to a glof course in the flood area est. @ $10,000		10,000
Total Proposal Cost:	500000	Total Projected Loss:	5	372,400


Bellegrave Ave
Jurupa Rd
Ontario Fwy
Sulphur Dr
Humber Dr
Etiwanda Ave
Martin St
50th St
Dodd St
Bain St
50th St
Jurupa Rd
51st St
52nd St
Felspar St
Van Buren Blvd
Rutile St
53rd St
54th St
54th St
55th St
55th St
56th St
56th St
56th St
Ash St
Drake Dr
Peachtree Dr
Wineville Ave
Aurora Ave
Crown Dr
Lucretia Ave
58th St
Ridgeview Ave
58th St
58th St
59th St
59th St
Hudson St
Troth St
Marlatt St
60th St
Beach St
61st St
Pedley
15
Limonite Ave
Paradise Knolls Golf Course
63rd St
63rd St
64th St
64th St
65th St
65th St
Dana Ave
Lucretia Ave
Etiwanda Ave
Mann Ave
66th St
Hidden Valley Wildlife Area
68th St
Corona Fwy
Corona Fwy
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Riverside County
Waste Management Department

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Riverside County Waste Management Department
Contact: Hans Kernkamp, General Manager - Chief Engineer
Phone: (951) 486-3203

MITIGATION STRATEGY INFORMATION

Project Name:

Solid Waste Disposal Facilities Operation Continuity Planning

Project Location:

All Solid Waste Disposal Facilities in Riverside County

Project Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Project/Event History

List any previous disaster related events (dates, costs, etc)

Solid waste disposal facilities in Riverside County include eight active sanitary landfills, seven active transfer stations (plus one under construction), various materials recovery and drop-off centers, numerous inactive landfills, plus Department headquarters. These facilities are located throughout the County and are essential to solid waste disposal management within the County and for its cities. As many of these facilities are located in Southern California desert areas, some are in flood zones, some are in hilly brush-covered terrain and all are in active earthquake zone regions, all are potentially susceptable to damage from earthquakes, wildfires, flooding and flash flooding. A severe occurrence of these types of natural disasters could cause extensive physical damage, or operational impairment, to these facilities, which could in turn cause disruption of the essential daily solid waste processing and disposal services to the County, its cities and residents. A severe occurrence of one of these natural disasters could also create an environmental and/or public health hazard because damage caused to any active or inactive sanitary landfills could result in the uncovering, shifting or relocation of buried and degraded solid waste that could then come in contact with ground or surface water or the atmosphere. Though no major damage has yet to occur, several minor landslide events have occurred at County landfills during the Department's history of operation which are attributable to earthquake events. A flash flood did occur about ten years ago at the Edom Hill Landfill in Cathedral City which washed out the access road into the landfill, resulting in forced closure of the landfill for six months and extended disruption of solid waste disposal service in the Western Coachella Valley. Another occurred at the same landfill facility recently in August, 2004, which resulted in forced closure of the landfill for one day. Wildfires have forced the closure of the Lamb Canyon Landfill in Beaumont and the Badlands Landfill in Moreno Valley for one to two days in the past. A severe occurrence of one of these types of natural disasters could also result in a regionwide power outage, or damage to or rupture of water retention, storage and distribution facilities creating a flood event that could impact any of these facilities, including the Department's headquarters. On a larger scale, a severe occurrence of one of these natural disasters could cause regionwide destruction of buildings and infrastructure components, that could in turn generate a surge of debris influx into the active landifills during post disaster cleanup that could potentially overwhelm the capacity of the solid waste disposal system. On a lesser scale, an earthquake or flood impacting the Department's headquarters facility could damage or destroy critical engineering and administrative computer support systems, which are essential to the daily operation and management of the Countywide solid waste disposal system, resulting in loss of hardware and/or data that could impair the Department's ability to maintain continuity of operation following a disaster. Major post disaster disruption of the Countywide solid waste disposal system could have far reaching impact on the region's post disaster recovery efforts.

Narrative: Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In order to ensure continuity of operation of the Countywide solid waste disosal system in the wake of a natural disaster caused by an earthquake, flood, flash flood or wildfire, the proposed mitigation strategy has multiple components. One is to analyze, and improve as needed, surface water control measures on active and inactive landfill sites and transfer stations and along landfill and transfer station site access roads (water and sediment retention basins, culverts, drainage systems, etc.) subject to 100 to 500 year rainstorms, flooding and flash flooding. Another is to perform geotechnical studies at active and inactive landfills, and improve as needed, landfill surface terrain to ensure its ability to withstand seismic influences in an earthquake. Improvements may include such action such as installing soil buttresses over active earthquake faults that cross through landfill sites. Another is to analyze, and improve as needed, all landfill access roads, with emphasis on those having bridge components, to ensure those roads and bridges can withstand damage from earthquakes and 100 to 500 years rainstorms and resultant floods and flash floods. Such improvements may require coordination of efforts, and joint feasibility studies, between the Department, local city jurisdictions, the County Flood Control District and Transportation Department and contract transfer station operators. Another is to expand the Department's hazardous materials inspection program (including personnel, tools, equipment, material processing facilities, public education resources, etc.) to reduce the frequency and magnitude of incidents involving the dumping of hazardous materials at active landfill sites. Another is to ensure that critical engineering and administration computer support systems, software and data at the Department's headquarter facility are adequately protected against physical damage from flood, fire, sprinkler leakage or water intrusion and are capable of continuity of operation following a disaster resulting in a regionwide or local power outage. This could include upgrading or modifing physical fire protection systems in the main computer room at the headquarters facility, installing emergency power generation equipment at the headquarters facility, utilization of protected off-site repositories for storage of original, customized and updated software programs and backup and/or archived data media and entering into predisaster agreements and strategies with vendors to ensure rapid replacement of duplicate computer system hardware should a disaster damage or destroy the original computer hardware.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

PART II

SUBMITTING JURISDICTIONS

Part II - Submitting Jurisdictions

Cities

1	City of Banning
2	City of Beaumont
3	City of Blythe
4	City of Calimesa
5	City of Canyon Lake
6	City of Cathedral City
7	City of Coachella
8	City of Corona
9	City of Desert Hot Springs
10	City of Hemet
11	City of Indian Wells
12	City of Indio
13	City of Lake Elsinore
14	City of La Quinta
15	City of Moreno Valley
16	City of Murrieta
17	City of Norco
18	City of Palm Desert
19	City of Palm Springs
20	City of Perris
21	City of Rancho Mirage
22	City of Riverside
23	City of San Jacinto
24	City of Temecula

Other Jurisdictions

25	Soboba Band of Luiseno Indians

Hospitals

26	Desert Regional Medical Center
27	Hemet Valley Medical Center
28	Inland Valley Medical Center
29	JFK Memorial Hospital
30	Kaiser Hospital
31	Menifee Valley Medical Center
32	Moreno Valley Community Hospital
33	Parkview Community Hospital
34	Rancho Springs Medical Center
35	Riverside Community Hospital

Schools

36	Alvord Unified School District
37	Beaumont Unified School District
38	Lake Elsinore Unified School District
39	Moreno Valley Unified School District
40	Menifee Unified School District
41	Riverside Unified School District
42	San Jacinto Unified School District
43	Riverside Co. Office of Education, Children & Family Services

Special Districts

44	Idyllwild Fire Protection District
45	Elsinore Valley Municipal Water District
46	Home Gardens County Water District
47	Lee Lake Water District
48	Mission Springs Water District
49	Murrieta County Water District
50	Rancho California Water District
51	San Gorgonio Pass Water District
52	Valley Sanitary District
53	Western Municipal Water District

Part II Evaluation Requirements Cross Reference Table for Local Submitting Jurisdictions

Category of Requirement	Federal Emergency Management Agency (FEMA) / California Office of Emergency Services (OES) Evaluation Requirement & Statutory Authority	Submitting Local Jurisdiction Response Section Location
Prerequisite for Multi-Jurisdictional Plan	Adoption by Local Governing Body for Each Jurisdiction	Part II, Local Resolution placed at the front of each jurisdictions submittals
Risk Assessment	Identifying Hazards: §201.6(c)(2)(i)	Part II, Hazard Identification Questionnaire and Specific Hazards Summary
	Profiling Hazards: §201.6(c)(2)(i)	Part II, Hazard Identification Questionnaire and Specific Hazards Summary
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part II, Vulnerability Worksheet
	Assessing Vulnerability: Structures: §201.6(c)(2)(ii)(A)	Part II, Hazard Identification Questionnaire and Specific Hazards Summary Section, and Vulnerability Worksheet
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part II, Summarized HAZUS Results
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(c)	Part II, Development Trends Questionnaire
Mitigation Strategy	Local Hazard Mitigation Goals: §201.6(c)(3)(i)	Part II, Mitigation Goals Worksheet
	Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	Part II, Mitigation Goals Worksheet
	Implementation of Mitigation Actions: §201.6(c)(3)(iii)	Part II, Proposed Mitigation Action and Strategy Proposal
Plan Maintenance Process	Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	Part I Pages 203 - 205 Part II - Development Trends Questionnaire
	Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)	Part I Pages 203 - 205 Part II - Development Trends Questionnaire
	Continued Public Involvement: §201.6(c)(4)(iii)	Part I Page 203 - 205 Part II - Development Trends Questionnaire
		Part I Page 203 - 205 Part II - Development Trends Questionnaire

EXPLANATION OF PART II DOCUMENTS

Reference Table For Local Jurisdictions Submissions	This spreadsheet lists all of the Non-County jurisdictions that are submitting a set of documents as part of the County Multi-Jurisdictional Plan. The spreadsheet identifies the documents completed by each jurisdiction as a quick snapshot of the work completed by each of the Submitting Jurisdictions.
Jurisdictional Information	The first page of each jurisdiction's submittal is an information page about that jurisdiction. The information on this page identifies: 4. The jurisdiction and the contact person 5. The jurisdiction's service area size and population 6. If the have an EOP Plan and a Safety Element of their General Plan This information will be used by County OES to help determine what activities need to occur as part of this plans maintenance process as well as which jurisdictions need to have EOP plans written and/or updated.
Hazard Identification Questionnaire	This questionnaire was answered by each Submitting Jurisdiction to help identify the hazards within their service area. The list was developed from the first round of meetings with the various working groups and from the hazards listed in the County's General Plan Update. Each hazard is discussed in detail in Part I of the plan. The information was used as the basis for each jurisdiction to evaluate its capabilities, determine its needs, and develop goals and strategies. The information identifies: 7. What hazards can be identified within or adjacent to the service area of the jurisdiction. 8. Which of those hazards have had reoccurring events. 9. What specific hazards and risks are considered by the jurisdiction to be a threat specifically to the jurisdiction? These locations were identified by name and location for inclusion in the Specific Hazard Summary Table. 10. Specific types of facilities owned and operated by the jurisdiction. 11. Locations damaged from prior disasters or hazard causing events. 12. Information about the jurisdiction's EOC
Specific Hazards Summary Table	This table identifies the information (name, owner, location, etc.) about the specific hazards identified in the Hazard Questionnaire. The Summary Table lists the basic information of the hazards identified by the jurisdiction in the Hazard Identification Question as a potential threat. These specific hazards were used in the development of response plans, maps, and other analysis data.
Jurisdiction's Critical Facility Evaluation	Riverside County OES, acting as the Operational Area, in cooperation with all local jurisdictions, developed a computer based Emergency Response Database for the County of Riverside. This database was created so emergency planners could use the database as a planning tool to develop response plans, evaluate their jurisdiction's capabilities, determine its needs, and develop goals and strategies. The program is also used during events to assist in-field units and planners in the EOCs. The database functions similar to HAZUS in that it contains a list of major hazards and risks, all identified critical facilities in the County, and a topographical overlay of the County. Unlike HAZUS, the database does not contain any dollar values. This is a proposed upgrade in the future. The database is built in ArcView and a copy of ArcView and the database was provided to the jurisdictions in the County. The database is updated by the jurisdictions on a yearly basis through County OES and maintained by County GIS. Many of the HAZUS, RCIP, and other maps in the Plan were created with the use of this database.

What is HAZUS?	HAZUS (Hazards U.S.) is a GIS-based software used for estimating earthquake losses based on current scientific and engineering knowledge. It was developed under a cooperative agreement by the National Institute of Building Sciences (NIBS) with funding from the Federal Emergency Management Agency (FEMA). This earthquake loss estimation tool is currently in use by communities throughout the United States and provides a planning guide for jurisdictions of the potential physical and economical impact of an earthquake that has occurred in their area.
Summarized HAZUS Results	Earthquake risks for each city and several unincorporated areas of the County were developed in terms of the vulnerability of the population and infrastructure and costs associated with physical and economic damages or destruction. Earthquake scenarios were used based on the major earthquake faults in the County of Riverside. Risk assessments were developed only for the cities and county unincorporated areas because of the broad overlay of the special district's boundaries and the specific data available from the cities. Several of the HAZUS and GIS maps contained in Part I of the plan depict potential impact of various hazards throughout the County on the cities, unincorporated areas, and the various submitting special districts.
Local Jurisdiction Vulnerability Worksheet	This table is a listing of the primary hazards identified by the working groups. Each jurisdiction was asked to evaluate the potential for an event to occur in their jurisdiction by hazard. They were also asked to evaluate the potential impact of that event by hazard on their jurisdiction. The impact potential was determined based on:: 1. Economic loss and recovery 2. Physical loss to structures (residential, commercial, and critical facilities) 3. The loss or damage to the jurisdictions infrastructure 4. Their ability to continue with normal daily governmental activities 5. Their ability to quickly recover from the event and return to normal daily activities 6. The loss of life and potential injuries from the event. The jurisdictions were asked to rate the potential and severity using a scale of between 0 and 4 (4 being the most severe). The jurisdictions were also asked to rank the listed hazards as they relate to their jurisdiction from 1 to 19 (1 being the highest overall threat to their jurisdiction). With the assistance of the RCIP Plan and County Departments, Riverside County OES conducted an extensive evaluation of the severity and probability potential for the county as a whole. The hazards were also ranked for the County. Those numbers and rankings were provided to the jurisdictions as a comparison guide. A separate table was created to address the hazards relating to agriculture and was assessed by the agriculture working group. This table can be found in the Agriculture Appendix of Part I of the Plan.
Local Jurisdiction Mitigation Strategies and Goals	This table is a listing of the various mitigation strategies, goals, and objectives developed by the working groups. The jurisdictions were also given the opportunity to list additional strategies, goals, and objectives specific to either their jurisdiction or their workgroup (i.e. the hospitals, agriculture, etc.). Once this list was compiled, each jurisdiction was asked to prioritize the strategies, goals, and objectives based upon the hazards identified in their jurisdiction. These were prioritized as High, Medium, Low, or N/A.

Local Jurisdiction Proposed Mitigation Action And Strategy Proposal	Each jurisdiction was required to develop a Mitigation Strategy Proposal based on one of the following: 4. The strategy, goal, or objective rating "High Priority" on the Local Jurisdiction Mitigation Strategies and Goals 5. A specifically identified strategy, goal, or objective that was developed as part of one of the working groups planning sessions such as the hospitals or agriculture 6. A specifically identified strategy, goal, or objective that was developed as part of one of the jurisdiction's internal working group planning sessions. In some cases, the strategy, goal, or objective was one that the jurisdiction or working group felt was very realistic and of value. As part of this process, each Submitting Jurisdiction was required to perform a cost-benefit analysis. They were required to answer the question at the bottom of the Proposal page that asks if they had conducted a Cost-Benefit Analysis of some type. This analysis was conducted either by completing the Cost-Benefit Form attached to the Proposal or by some other approved method. Many of the jurisdictions used the cost-effective analysis approach outlined in the FEMA publication, *Cost and Benefits of Natural Hazards Mitigation.* This cost-benefit analysis was not restricted to one of the natural hazards. In some cases, the jurisdiction or working group identified a proposal that highlighted a life-safety issue over a standard hazard proposal. This was done when there was either historical data or other sources of information indicating that the life-safety issue needed to be emphasized or brought to the public's attention. As part of the planning process, presentations on the different methods of cost-benefit analysis were given to the different working groups. The resources used for these presentations are listed in Appendix B of Part I, Resource List.
Development Trends Questionnaire	This questionnaire identifies a comparison of specific land use issues between 2004 and 2010. The questionnaire also identifies the specific threat potential to the jurisdiction in relationship to residential and commercial structures along with critical facilities. This threat potential is focused on structural loss rather than dollar-value loss as it relates to the three main natural hazards – earthquakes, floods, and wildland fires. The determination of dollar-value loss relating to commercial and critical facilities was found to be very limited and a difficult task to establish. This issue will be addressed in future updates of the Plan. The questionnaire also requires the jurisdiction to identify the process it will use to maintain their portion of the Plan. They we given the option of continuing to work with the County or develop their portion as an independent document in the future. County OES will use this data for future HAZUS and Emergency Response Database activities.
Crosswalk Review	This is a State OES and FEMA document used to evaluate the contents of the entire plan and each jurisdiction's submittal of information. It should be noted that there have page number pages in Part I since the jurisdiction's completed their crosswalks.

Part II Reference Table for Local Jurisdictions Submissions

	Submitting Jurisdictions Updated - 2/1/05	Hazard Identification and Summary Worksheets	Vulnerability Worksheet	Mitigation Goals	Proposed Mitigation Action and Strategy Proposal	HAZUS Data	Development Trends Questionnaire	Crosswalk	Adoption Resolution
Cities									
1	City of Banning	X	X	X	X	X	X	X	x
2	City of Beaumont	X	X	X	X	X	X	X	X
3	City of Blythe	X	X	X	X	X	X	X	X
4	City of Calimesa	X	X	X	X	X	X	X	X
5	City of Canyon Lake	X	X	X	X	X	X	X	X
6	City of Cathedral City	X	X	X	X	X	X	X	X
7	City of Coachella	X	X	X	X	X	X	X	X
8	City of Corona	X	X	X	X	X	X	X	X
9	City of Desert Hot Springs	X	X	X	X	X	X	X	X
10	City of Hemet	X	X	X	X	X	X	X	X
11	City of Indian Wells	X	X	X	X	X	X	X	X
12	City of Indio	X	X	X	X	X	X	X	X
13	City of Lake Elsinore	X	X	X	X	X	X	X	X
14	City of La Quinta	X	X	X	X	X	X	X	X
15	City of Moreno Valley	X	X	X	X	X	X	X	X
16	City of Murrieta	X	X	X	X	X	X	X	X
17	City of Norco	X		X	X	X	X	X	X
18	City of Palm Desert	X	X	X	X	X	X	X	X
19	City of Palm Springs	X	X	X	X	X	X	X	X
20	City of Perris	X	X	X	X	X	X	X	X
21	City of Rancho Mirage	X	X	X	X	X	X	I	X
22	City of Riverside	X	X	X	X	X	X	X	X
23	City of San Jacinto	X	X	X	X	X	X	X	X
24	City of Temecula	X	X	X	X	X	X	X	X

Submitting Jurisdictions		Hazard Identification and Summary Worksheets	Vulnerability Worksheet	Mitigation Goals	Proposed Mitigation Action and Strategy Proposal	HAZUS Data	Development Trends Questionnaire	Crosswalk	Adoption Resolution
Other Jurisdictions									
25	Soboba Band of Luiseno Indians	X	X	X	X	X	N/A	X	X	
Hospitals									
26	DESERT REGIONAL MEDICAL CENTER	X	X	X	X	X	N/A	X	X	X
27	HEMET VALLEY MEDICAL CENTER	X	X	X	X	X	N/A	X	X	
28	INLAND VALLEY MEDICAL CENTER	X	X	X	X	X	N/A	X	X	
29	JFK MEMORIAL HOSPITAL	X	X	X	X	X	N/A	X	X	X
30	KAISER HOSPITAL	X	X	X	X	X	N/A	X	X	X
31	MENIFEE VALLEY MEDICAL CENTER	X	X	X	X	X	N/A		X	
32	MORENO VALLEY COMMUNITY HOSPITAL	X	X	X	X	X	N/A	X	X	
33	PARKVIEW HOSPITAL	X	X	X	X	X	N/A	X	X	X
34	RANCHO SPRINGS MEDICAL CENTER	X	X	X	X	X	N/A	X	X	
35	RIVERSIDE COMMUNITY HOSPITAL	X	X	X	X	X	N/A	X	X	
Schools									
36	Alvord Unified School District	X	X	X	X	X	N/A	X	X	X
37	Beaumont Unified School District	X	X	X	X	X	N/A	X	X	X
38	Lake Elsinore Unified School District	X	X	X	X	X	N/A	X	X	X

Submitting Jurisdictions		Hazard Identification and Summary Worksheets		Vulnerability Worksheet	Mitigation Goals	Proposed Mitigation Action and Strategy Proposal	HAZUS Data	Development Trends Questionnaire	Crosswalk	Adoption Resolution
39	Moreno Valley Unified School District	X	X	X	X	X	N/A	X	X	X
40	Menifee Unified School District	X	X	X	X	X	N/A	X	X	
41	Riverside Unified School District	X	X	X	X		N/A	X	X	X
42	San Jacinto Unified School District	X	X	X	X	X	N/A	X	X	X
43	Riverside Co. Office of Education, Children & Family Services	X	X	X	X	X	N/A	X	X	
Special Districts										
43	Idyllwild Fire Protection District	X	X	X	X	X	N/A	X	X	
45	Elsinore Valley Municipal Water District	X	X	X	X	X	N/A	X	X	X
46	Home Gardens County Water District	X	X	X	X	X	N/A	X	X	X
47	Lee Lake Water District	X	X	X	X	X	N/A	X	X	X
48	Mission Springs Water District	X	X	X	X	X	N/A	X	X	X
49	Murrieta County Water District	X	X	X	X	X	N/A	X	X	X
50	Rancho California Water District	X	X	X	X	X	N/A	X	X	X
51	San Gorgonio Pass Water District	X	X	X	X	X	N/A	X	X	X
52	Valley Sanitary District	X	X	X	X	X	N/A	X	X	X
53	Western Municipal Water District	X	X	X	X	X	N/A	X	X	X

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

SUBMITTING CITIES

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Banning

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		BANNING		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Fire Captain/Fire Marshal		
First Name:	Ted	Last Name:	Yarbrough	
Agency Address:	Street:	P.O. Box 998		
	City:	Banning		
	State:	CA		
	Zip:	92220		
Contact Phone	(951)922-3210	FAX	(951)922-0318	
E-mail	ted.yarbrough@fire.ca.gov			

Population Served	25,504	Square Miles Served	25

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	5/13/1986

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	5/13/1996
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**YES**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**YES**
NEAR A FOREST AREA	**YES**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	YES
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	YES
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction ?**	**Adjacent to Jurisdiction?**
BANNING	Fault	Banning	Yes	Yes
BANNING	Fault	Gandy Ranch	Yes	Yes
BANNING	Fault	Lawrence	No	Yes
BANNING	Fault	McInnes	No	Yes
BANNING	Fault	McMullen	Yes	Yes
BANNING	Fault	San Andreas	Yes	Yes
BANNING	Flood Channel	8th St. Canyon	Yes	No
BANNING	Flood Channel	Gilman Home	Yes	No
BANNING	Flood Channel	Montgomery Creek	Yes	No
BANNING	Flood Channel	Pershing Creek	Yes	Yes
BANNING	Flood Channel	San Gorgonio River	Yes	Yes
BANNING	Flood Channel	Sidney St.	Yes	No
BANNING	Flood Channel	Smith Creek	Yes	Yes
BANNING	Hazmat Storage Location	Well Site	Yes	No
BANNING	Hazmat Storage Location	Well Site 2	Yes	No
BANNING	Hazmat Storage Location	Well Site 3	Yes	No
BANNING	Hazmat Storage Location	Well Site 4	Yes	No
BANNING	Hazmat Storage Location	Well Site 5	Yes	No
BANNING	Pipeline	Kinder-Morgan	Yes	Yes
BANNING	Pipeline	So. Cal. Gas	Yes	Yes
BANNING	Pipeline	Southern Trails	Yes	Yes
BANNING	Railroad Track	Union Pacific	Yes	Yes
BANNING	River	San Gorgonio	Yes	Yes
BANNING	Stream	Gilman Home Creek	Yes	No
BANNING	Stream	Montgomery Creek	Yes	No
BANNING	Stream	Pershing Creek	Yes	Yes
BANNING	Stream	Smith Creek	Yes	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Banning

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$15,488.96
Non-Structural Damage	$64,207.56
Building Damage	$79,696.52
Contents Damage	$20,481.62
Inventory Loss	$350.06
Relocation Cost	$379.39
Income Loss	$2,634.50
Rental Income Loss	$4,276.02
Wage Loss	$3,487.73
Total Loss	$111,305.77

Commercial Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Banning

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Educational Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	10
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Banning

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Single Family Casualties for Daytime Event	
Medical Aid	4
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	23
Hospital Treatment	6
Life-Threatening Severity	1
Death	2

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: **TED YARBROUGH** AGENCY: **CITY OF BANNING** DATE: **06/25/04**

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**3**	**1**
WILDLAND FIRE	3	4	**2**	**4**	**2**
FLOOD	3	3	**3**	**2**	**5**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**2**	**3**	**6**
LANDSLIDES	2	3	**2**	**2**	**14**
INSECT INFESTATION	3	4	**1**	**1**	**17**
EXTREME SUMMER/WINTER WEATHER	2	4	**3**	**2**	**9**
SEVERE WIND EVENT	3	3	**3**	**3**	**8**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**1**	**1**	**19**
TERRORISM	4	2	**1**	**1**	**18**
OTHER MAN-MADE					
PIPELINE	2	3	**4**	**2**	**7**
AQUEDUCT	2	3	**1**	**1**	**16**
TRANSPORTATION	2	4	**4**	**3**	**3**
BLACKOUTS	3	4	**4**	**3**	**13**
HAZMAT ACCIDENTS	3	3	**4**	**3**	**4**
NUCLEAR ACCIDENT	4	2	**4**	**2**	**15**
TERRORISM	4	2	**4**	**2**	**12**
CIVIL UNREST	2	2	**4**	**2**	**11**
JAIL/PRISON EVENT	1	2	**3**	**2**	**10**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
L	◊ Government employees
M	◊ Businesses
M	◊ Hotel/motel literature
M	◊ Local radio stations for education
M	◊ Public education via utilities
L	◊ Identify/create television documentary content
L	Improve the Emergency Alert System (EAS)
L	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
L	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
L	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
M	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
M	◊ Government buildings/schools
M	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
L	Backup water supplies for hospitals

L	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
M	Website with mitigation/contractor/retrofitting information
M	◊ Links to jurisdictions
M	◊ Alerting information
M	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
H	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
L	Redundancy
L	Mobile repeaters

FLOODS

M	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
H	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
M	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
L	◊ Evacuation documentation
L	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)

L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
M	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
H	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
M	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
M	Fire spotter program/red flag program
L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
M	Public education program
L	◊ Weather reporting/alerting
H	◊ Building protection
L	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
H	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
M	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters

M	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
H	Clear out abandoned vehicles from oases
H	Code enforcement
L	Codes prohibiting fireworks
M	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
N/A	Increase County Vector Control capacities
M	General public drought awareness
M	◊ Lawn watering rotation
N/A	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
M	Public education
M	◊ Bi-lingual signs
M	◊ Blackout information
M	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Banning
Contact: Ted Yarbrough
Phone: (951)922-3210

MITIGATION STRATEGY INFORMATION

Proposal Name:

Electric Transmission line pole replacement

Proposal Location:

Various locations throughout the city

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
X	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

The City of Banning is in a high earthquake potential fault zone (Banning Fault) as well as a high wind area. On two occasions, strong wind events have caused power poles that support, 33kv transmission lines, to fall. These events caused the loss of power to portions of the city for as much as 24 hours. These poles have been replaced but the potential still exists for other poles to fail and cause widespread outages. Depending on the time of year, long-term power outages could cause life-threatening situations. Long tern outages would also cause loss of revenue to local businesses.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

The project will involve the replacement of poles that have been identified for replacement and the development of a more comprehensive inspection program to identify the potential problem poles. Primary and critical facilities (City Hall, Police and Fire facilities and local Hospitals) that are provided power by the City will be evaluated as a routine part of the City's replacement program in an effort to help reduce the potential impact of a loss of power to these critical locations. The replacement of these poles will also reduce the impact of earthquakes on the local power grid because the newer poles will have a reduced potential for being affected by the shaking of the earthquakes and the movement of the power lines. The City has determined that the cost of this on-going replacement program is cost beneficial when looking at the potential cost of replacing a large number of poles at one time because of a single event.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	Y	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
X	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **City of Banning**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES X NO ____**	
Current Population in Jurisdiction or Served	**27,000**	Projected Population in Jurisdiction or Served - in 2010	**29,213**
Current Sq Miles in Jurisdiction or Served	**23**	Projected Sq Miles in Jurisdiction or Served - in 2010	**24**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**YES**	If yes, please list ordinance or regulation number. Ordinance 1258	
What is the number one land issue your agency will face in the next five years	**Increasing Development**		
Approximate Number of Homes/Apts/etc.	**10,000**	Projected Number of Homes/Apts/etc.- in 2010	**12,000**
Approximate Total Residential Value	**$562,000,000**	Projected Residential Total Value - in 2010	**$1,200,000,000**
Approximate Number of Commercial Businesses	**749**	Projected Number of Commercial Businesses - in 2010	**820**
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	**30% $168,600,000**	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	**35% $420,000,000**
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	**100% $562,000,000**	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	**100% $1,200,000,000**
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	**2% 11,124,000**	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	**4% $48,000,000**
Approximate Percentage of Commercial Businesses in flood hazard zones	**10%**	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	**10%**
Approximate Percentage of Commercial Businesses in earthquake hazard zones	**100%**	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	**100%**
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	**0%**	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	**1%**
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**0**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**5**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**6**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**0**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**YES**	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			**YES**

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction:	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan:**	**Date of Completion:**
City of Banning	**Riverside County OES**	

Local Point of Contact: **Ted Yarbrough**	**Address:** **PO Box 998** **Banning, CA 92220**
Title: **Banning Fire Marshal**	
Agency: **Riverside County Fire Dept. / C.D.F.**	
Phone Number: **(951) 922-3210**	**E-Mail:** **tedyarbrough@fire.ca.gov**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	Part I pages 3-7	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			***"Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes Part II Banning Section Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Yes Part II Banning Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part II City of Banning Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[Yes]** If yes, where in MJP: Part II City of Banning Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part II City of Banning Section	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part II City of Banning Section	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part II City of Banning Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part II City of Banning Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Part II City of Banning Section Hazard Mitigation Strategy Proposal	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I pages 38-101		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part II City of Banning Section Supplemental Questionnaire	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.			

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Beaumont

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		BEAUMONT		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Sgt.		
First Name:	Mitchell	Last Name:	White	
Agency Address:	Street:	660 Orange Ave.		
	City:	Beaumont		
	State:	CA		
	Zip:	92223-2200		
Contact Phone	951-769-8500		FAX	
E-mail	mwhite@ci.beaumont.ca.us			

Population Served	18,000
Square Miles Served	32

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	1/1/1995

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1/1/1995
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**YES**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**NO**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**NO**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**NO**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**YES**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**YES**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
BEAUMONT	Fault	San Andres	No	Yes
BEAUMONT	Fault	San Jacinto	No	Yes
BEAUMONT	Pipeline	four corners and others	Yes	No
BEAUMONT	Railroad Track	union pacific rail lines	Yes	No
BEAUMONT	Stream	edgar creek	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Beaumont

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$21,221.56
Non-Structural Damage	$87,304.61
Building Damage	$108,526.15
Contents Damage	$25,654.13
Inventory Loss	$359.91
Relocation Cost	$485.38
Income Loss	$3,150.50
Rental Income Loss	$5,570.91
Wage Loss	$3,753.22
Total Loss	$147,500.19

Commercial Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	3
Life-Threatening Severity	1
Death	2

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Beaumont

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Educational Casualties for Daytime Event	
Medical Aid	8
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	4
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	15
Hospital Treatment	3
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Beaumont

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Single Family Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	38
Hospital Treatment	10
Life-Threatening Severity	2
Death	3

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Mitchell White AGENCY: Beaumont DATE: 9/2/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	3	2	2
FLOOD	3	3	2	2	5
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	4	6
LANDSLIDES	2	3	1	1	14
INSECT INFESTATION	3	4	3	3	17
EXTREME SUMMER/WINTER WEATHER	2	4	3	3	9
SEVERE WIND EVENT	3	3	3	4	8
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	2	19
TERRORISM	4	2	2	1	18
OTHER MAN-MADE					
PIPELINE	2	3	4	1	7
AQUEDUCT	2	3	1	1	16
TRANSPORTATION	2	4	4	4	3
BLACKOUTS	3	4	3	2	13
HAZMAT ACCIDENTS	3	3	4	4	4
NUCLEAR ACCIDENT	4	2	2	2	15
TERRORISM	4	2	2	1	12
CIVIL UNREST	2	2	2	1	11
JAIL/PRISON EVENT	1	2	1	1	10
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

	EARTHQUAKE
H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
L	◊ Government employees
M	◊ Businesses
M	◊ Hotel/motel literature
M	◊ Local radio stations for education
M	◊ Public education via utilities
L	◊ Identify/create television documentary content
L	Improve the Emergency Alert System (EAS)
L	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
L	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
L	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
M	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
M	◊ Government buildings/schools
M	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
L	Backup water supplies for hospitals
L	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
M	Website with mitigation/contractor/retrofitting information

M	◊ Links to jurisdictions
M	◊ Alerting information
M	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
H	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
L	Redundancy
L	Mobile repeaters

FLOODS

M	Update development policies for flood plains
L	Develop multi-jurisdictional working group on floodplain management
H	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
M	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
L	◊ Evacuation documentation
L	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
L	Vegetation restoration programs

L	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
M	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
H	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
M	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
M	Fire spotter program/red flag program
L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
M	Public education program
L	◊ Weather reporting/alerting
H	◊ Building protection
L	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
H	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
M	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
M	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
H	Clear out abandoned vehicles from oases
H	Code enforcement
L	Codes prohibiting fireworks

M	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
N/A	Increase County Vector Control capacities
M	General public drought awareness
M	◊ Lawn watering rotation
N/A	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
M	◊ Bi-lingual signs
M	◊ Blackout information
M	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City Of Beaumont
Contact: Jeffrey E. Oakley
Phone: 951 769-8520

MITIGATION STRATEGY INFORMATION

Proposal Name:

Oak Valley Parkway/Noble Creek Bridge Reconstruction

Proposal Location:

Oak Valley Parkway at the Noble creek crossing. City of Beaumont

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
X	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

Historortorically the bridge crossing Noble creek on Oak Valley Parkway (formerly 14th Street) has been severely damaged and rendered unusable during every major rain event in the last 30 years. During the 1990s alone it was out of service four times. In 1969 the bridge was closed for more than a year for repairs.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

Oak Valley Parkway is the major transportation corridor for the entire north end of the City of Beaumont and connects to the Interstate highway (I 10). Fast paced growth as also made this area a large population area. As such, another failure of this bridge would severely limit and slow the response of energeancy personnel such as Fire and Police to the people living in the area. The entire roadway and bridge will be elevated to a higher grade with a box culvert, allowing much more clearence for water flow down Noble Creek channel.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **City of Beaumont**	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES XXXX NO ____**		
Current Population in Jurisdiction or Served	18000	Projected Population in Jurisdiction or Served - in 2010	27300
Current Sq Miles in Jurisdiction or Served	32	Projected Sq Miles in Jurisdiction or Served - in 2010	42
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	YES	If yes, please list ordinance or regulation number. City Ordinance 461	
What is the number one land issue your agency will face in the next five years	Development of Traffic routes in and around the city		
Approximate Number of Homes/Apts/etc.	5600	Projected Number of Homes/Apts/etc.- in 2010	8500
Approximate Total Residential Value	$ 900 mill	Projected Residential Total Value - in 2010	$1.4 billion
Approximate Number of Commercial Businesses	410	Projected Number of Commercial Businesses - in 2010	574
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	>1% $9,000,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	>1% $14,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $900,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $1.4 billion
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	0 $0.0	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	10% $140,000,000
Approximate Percentage of Commercial Businesses in flood hazard zones	0	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	0
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	10
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	5	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	6
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?		YES	

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Beaumont**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 10, 2004**
Local Point of Contact: **Mitchell White**		**Address:** **660 Orange Ave.** **Beaumont, CA 92223-2200**
Title: **Sgt.**		
Agency: City of Beaumont		
Phone Number: **(951) 769-8500**		**E-Mail:** **mwhite@ci.beaumont.ca.us**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 3 -7**	**M**	

PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation	Part II, City of Beaumont Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

	planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, City of Beaumont Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II City of Beaumont Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, City of Beaumont Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pages 28 – 40 Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Civil unrest Pages 129 – 131 Jails and prisons incidents Pages 132 – 134 Terrorism Pages 135 – 139 Part II, City of Beaumont Section	**S**	

	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, City of Beaumont Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II City of Beaumont Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, City of Beaumont Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Blythe

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		BLYTHE		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Captain		
First Name:	Robert	Last Name:	Whitney	
Agency Address:	Street:	240 N. Spring Street		
	City:	Blythe		
	State:	CA		
	Zip:	92225		
Contact Phone	760 922-6111		FAX	760 922-3652
E-mail	rwhitney@cityofblythe.ca.gov			

Population Served	21,200
Square Miles Served	26.4

Does your organization have a general plan?	NO
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**YES**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**YES**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**NO**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**NO**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
BLYTHE	Dam	Palo Verde Diversion Dam	No	Yes
BLYTHE	Flood Channel	Unknown	Yes	Yes
BLYTHE	Pipeline	Southern CA Natural Gas line	Yes	Yes
BLYTHE	Railroad Track	CA/AZ Railroad	Yes	Yes
BLYTHE	River	Colorado River	Yes	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Blythe

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$33.23
Non-Structural Damage	$136.45
Building Damage	$169.68
Contents Damage	$23.50
Inventory Loss	$0.25
Relocation Cost	$1.02
Income Loss	$2.79
Rental Income Loss	$6.58
Wage Loss	$3.47
Total Loss	$207.27

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Blythe

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Blythe

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Robert Whitnes (Captain) AGENCY: Blythe Police Department DATE: 6-30-04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**3**	**2**	**5**
WILDLAND FIRE	3	4	**0**	**0**	**18**
FLOOD	3	3	**3**	**2**	**12**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**1**	**16**
LANDSLIDES	2	3	**0**	**0**	**19**
INSECT INFESTATION	3	4	**2**	**4**	**7**
EXTREME SUMMER/WINTER WEATHER	2	4	**2**	**4**	**3**
SEVERE WIND EVENT	3	3	**3**	**3**	**4**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**2**	**3**	**8**
TERRORISM	4	2	**4**	**1**	**14**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**3**	**9**
AQUEDUCT	2	3	**3**	**2**	**11**
TRANSPORTATION	2	4	**2**	**4**	**10**
BLACKOUTS	3	4	**2**	**4**	**2**
HAZMAT ACCIDENTS	3	3	**3**	**3**	**1**
NUCLEAR ACCIDENT	4	2	**4**	**1**	**15**
TERRORISM	4	2	**4**	**1**	**17**
CIVIL UNREST	2	2	**2**	**2**	**13**
JAIL/PRISON EVENT	1	2	**2**	**3**	**6**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
M	◊ Government employees
M	◊ Businesses
M	◊ Hotel/motel literature
M	◊ Local radio stations for education
M	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
H	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
L	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
L	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
M	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)

N/A	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
M	Backup water supplies for hospitals
L	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
H	Harden repeater sites
M	Continue existing interoperability project
M	Strengthen/harden
M	Relocate
M	Redundancy
H	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
M	Develop multi-jurisdictional working group on floodplain management
H	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction

L	Upgrade dirt embankments to concrete
L	Conduct countywide needs study on drainage capabilities
M	Increase number of pumping stations
L	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
H	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
M	◊ Shelter locations
M	◊ Pre-event communications
L	Look at County requirements for neighborhood access
M	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
M	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment

L	Fire spotter program/red flag program
L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
L	◊ Building protection
L	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
M	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
M	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
M	Clear out abandoned vehicles from oases
M	Code enforcement
L	Codes prohibiting fireworks
M	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
L	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
M	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
M	Rotational crop planning/soil stabilization

L	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
M	White Fly infestation abatement/eradication program
L	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
M	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Blythe
Contact: Charles Hull
Phone: (760) 922-6161 x 240

MITIGATION STRATEGY INFORMATION

Proposal Name:

McCoy Wash Flood Control and 6th Ave. Alternate Access Route

Proposal Location:

East terminus of 6th Ave. at the mesa, north side of McCoy Wash

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
X	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
X	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
X	Agriculture - crop related mitigation
X	Agriculture - animal related mitigation
X	Flood inundation/Dam failure
X	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History — List any previous disaster related events (dates, costs, etc)

Major flood event September 23 & 24, 1976. Millions of dollars in damage and lost crops.

Description of Mitigation Goal Narrative: Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

There are 171 square miles of undeveloped desert that is tributary to the discharge point of this wash into the Palo Verde Valley. In 1976, this wash ran 16,000 cfs and flooded approximately 25 square miles of agricultural fields, roads, and personal property. A number of homes were damaged or destroyed. Interstate 10 was closed for several hours. The federal government has had an earthen dam as an unfunded project for many years to mitigate this local hazard. Just recently the community college relocated to a new campus on the mesa on the north side of the McCoy Wash. There currently is one way in and one way out. The ADA for the college is 2,000 students.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No	X	Responsible Agency: The McCoy Wash Flood Control District is responsible for the flood control project. The City of Blythe would handle the roadway construction for the alternate access

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

- [X] Unfunded project - funds are not available for the project at this time
- [ ] Local jurisdiction General Fund
- [ ] Local jurisdiction Special Fund (road tax, assessment fees, etc.)
- [ ] Non-FEMA Hazard Mitigation Funds
- [ ] Pre-Hazard Mitigation Grant Funds - Future Request
- [ ] Hazard Mitigation Funds

- [ ] Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Blythe	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _XX_ NO _____**		
Current Population in Jurisdiction or Served	14428	Projected Population in Jurisdiction or Served - in 2010	19390
Current Sq Miles in Jurisdiction or Served	27	Projected Sq Miles in Jurisdiction or Served - in 2010	32
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. City Ordinance # 252	
What is the number one land issue your agency will face in the next five years	Development of the river resort area on both sides of the California and Arizona border		
Approximate Number of Homes/Apts/etc.	4891	Projected Number of Homes/Apts/etc.- in 2010	5937
Approximate Total Residential Value	$700 million	Projected Residential Total Value - in 2010	$890 million
Approximate Number of Commercial Businesses	2476	Projected Number of Commercial Businesses - in 2010	3415
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	<12% $84,000,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	25% $222,500,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	N/A	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	N/A
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	<5% $35,000,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	8% $71,200,000
Approximate Percentage of Commercial Businesses in flood hazard zones	<2%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	4%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	N/A	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	<.05%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	2%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	3	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	3
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	0	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?		Yes	

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Blythe**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 22, 2004**
Local Point of Contact: **Charles Hull**	**Address:** **235 North Broadway** **Blythe, CA 92225**	
Title: **Assistant City Manager**		
Agency: **City of Blythe**		
Phone Number: **(760) 922-6161**	**E-Mail: chull@cityofblythe.ca.gov**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Blythe Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Blythe Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Blythe Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Blythe Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS <u>SCORING SYSTEM</u> [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Insect Infestation Pages 81 – 84 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Civil unrest Pages 129 – 131 Jails and prisons incidents Pages 132 – 134 Terrorism Pages 135 – 139 Part II, Blythe Section	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Blythe Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Blythe Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Blythe Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Calimesa

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		CALIMESA		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Assistant Public Works Director		
First Name:	Keith	Last Name:	Haan	
Agency Address:	Street:	908 Park Ave		
	City:	Calimesa		
	State:	CA		
	Zip:	92320		
Contact Phone	(951) 795-9801		FAX	(951) 795-4399
E-mail	khaan@cityofcalimesa.net			

Population Served	7,333
Square Miles Served	15

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	4/4/1994

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	4/4/1994
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	YES
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	YES
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**YES**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**YES**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	YES
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction ?	Adjacent to Jurisdiction?
CALIMESA	Aqueduct	East Branch Extension, Calif. Aqueduct	Yes	No
CALIMESA	Fault	Banning Fault Zone	Yes	No
CALIMESA	Fault	Beaumont Plain Fault Zone	No	Yes
CALIMESA	Fault	Crafton Hills Fault Zone	No	Yes
CALIMESA	Fault	Pinto Mountain Fault Zone	No	Yes
CALIMESA	Fault	San Gorgonio Pass Fault Zone	Yes	No
CALIMESA	Fault	San Jacinto Fault Zone	No	Yes
CALIMESA	Flood Channel	Calimesa Creek	Yes	No
CALIMESA	Flood Channel	Cherry Valley Creek	Yes	No
CALIMESA	Flood Channel	Gardenaire Wash	Yes	No
CALIMESA	Flood Channel	Singleton Cayon	Yes	No
CALIMESA	Pipeline	10" High Pressure Gas	Yes	No
CALIMESA	Railroad Track	Union Pacific Main Line	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Calimesa

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$9,243.31
Non-Structural Damage	$36,511.62
Building Damage	$45,754.92
Contents Damage	$10,805.75
Inventory Loss	$142.85
Relocation Cost	$214.83
Income Loss	$1,471.17
Rental Income Loss	$2,121.87
Wage Loss	$1,924.66
Total Loss	$62,436.04

Commercial Casualties for Daytime Event	
Medical Aid	4
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Calimesa

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Educational Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	6
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Calimesa

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Single Family Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	16
Hospital Treatment	4
Life-Threatening Severity	1
Death	1

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Bob French AGENCY: City of Calimesa DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**3**	**1**
WILDLAND FIRE	3	4	**4**	**4**	**2**
FLOOD	3	3	**4**	**3**	**3**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**2**	**2**	**6**
LANDSLIDES	2	3	**2**	**1**	**7**
INSECT INFESTATION	3	4	**2**	**1**	**8**
EXTREME SUMMER/WINTER WEATHER	2	4	**2**	**4**	**5**
SEVERE WIND EVENT	3	3	**4**	**4**	**4**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**2**	**3**	**10**
TERRORISM	4	2			**9**
OTHER MAN-MADE					
PIPELINE	2	3	**4**	**3**	**11**
AQUEDUCT	2	3	**4**	**3**	**12**
TRANSPORTATION	2	4	**3**	**2**	**16**
BLACKOUTS	3	4	**4**	**3**	**13**
HAZMAT ACCIDENTS	3	3	**3**	**3**	**15**
NUCLEAR ACCIDENT	4	2	**4**	**2**	**10**
TERRORISM	4	2	**4**	**2**	**16**
CIVIL UNREST	2	2	**2**	**2**	**18**
JAIL/PRISON EVENT	1	2	**1**	**1**	**19**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
H	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)

N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
L	Evaluate pipeline seismic resiliency
H	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
M	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
L	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
N/A	Redundancy
H	Mobile repeaters

FLOODS

H	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
H	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
H	Create map of flood channels/diversions/water systems etc
H	Require digital floor plans on new non-residential construction

L	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
M	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
H	◊ Road closure compliance
M	◊ Shelter locations
H	◊ Pre-event communications
H	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
M	Traffic light protection
L	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
L	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
H	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment

L	Fire spotter program/red flag program
L	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
M	Public education program
L	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
H	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
H	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
H	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
H	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
L	Fuel modification/removal
H	Evaluate building codes
H	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
M	Increase County Vector Control capacities
L	General public drought awareness
N/A	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
H	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization

N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
L	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
N	Fire Ant eradication program
N	White Fly infestation abatement/eradication program
N	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
M	Vulnerability assessment on fiber-optic cable
H	Upgrade valves on California aqueduct
M	Public education
M	◊ Bi-lingual signs
M	◊ Blackout information
N/A	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Calimesa
Contact: Keith Haan
Phone: (951) 795-9801

MITIGATION STRATEGY INFORMATION

Proposal Name:

Drainage Improvement

Proposal Location:

On County Line Road, Calimesa Blvd, Brian Street and Myrtlewood floods

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

x	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	The area between County Line Road, Calimesa Blvd, Brian Street and Myrtlewood floods during heavy rainstorms. This area is a residential area and causes recurring private property and roadway damage.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

Our goal is to improve storm drainage via improve curbs and cutters and drainage. This project would piggyback on a county effort to install a large storm drainage line. The proposed project would drain into the new county storm drain.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	x	No		Responsible Agency: City of Calimesa

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

x	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
x	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Calimesa		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _X_ NO _____**	
Current Population in Jurisdiction or Served	7272	Projected Population in Jurisdiction or Served - in 2010	12072
Current Sq Miles in Jurisdiction or Served	15	Projected Sq Miles in Jurisdiction or Served - in 2010	23
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. 3.3 and 8.8	
What is the number one land issue your agency will face in the next five years	Wildlife Corridors & Development		
Approximate Number of Homes/Apts/etc.	3252	Projected Number of Homes/Apts/etc.- in 2010	4752
Approximate Total Residential Value	1.25 billion $	Projected Residential Total Value - in 2010	1.90 Billion $
Approximate Number of Commercial Businesses	89	Projected Number of Commercial Businesses - in 2010	110
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	.1% (3 units) $1,250,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	0
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	1.1% (36 units) $13,750,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	0.8% (36 units) $1,520,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	16.8% (545 units) $210,000,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	27.4% (1300 units) $520,000,000
Approximate Percentage of Commercial Businesses in flood hazard zones	13.5% (12 units)	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	10% (12 units)
Approximate Percentage of Commercial Businesses in earthquake hazard zones	20.2% (18 units)	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	15% (18 units)
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	12.4% (11 units)	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	9.2% (11 units)
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	2	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	2
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	0	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Calimesa**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 22, 2004**
Local Point of Contact: **Bob French**	**Address:** **P.O. Box 1190** **908 Park Avenue** **Calimesa, CA 92320**	
Title: **Public Works Manager**		
Agency: **City of Calimesa**		
Phone Number: **(951) 795-9801**	**E-Mail: bfrench@cityofcalimesa.net**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Calimesa Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Calimesa Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Calimesa Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Calimesa Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pages 28 – 40 Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Part II, Calimesa Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Calimesa Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Calimesa Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Calimesa Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Canyon Lake

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		CANYON LAKE		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	ECS		
First Name:	Kathy	Last Name:	Bennett	
Agency Address:	Street:	31516 Railroad Canyon Road		
	City:	Canyon Lake		
	State:	CA		
	Zip:	92587		
Contact Phone	951-244-2955		FAX	951-246-2022
E-mail	Kathy-staff@pe.net			

Population Served	10,500	Square Miles Served	4.3

Does your organization have a general plan?	yes
Does your organization have a safety component to the general plan?	yes
What year was your plan last updated?	1995

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	NO
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	
EARTHQUAKE FAULTS NEXT TO JURISDICTION	
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	NO
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	YES
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
CANYON LAKE	Dam	Canyon Lake Dam	Yes	No
CANYON LAKE	Dam	Diamond Valley Lake Dam	No	No
CANYON LAKE	Dam	Lake Hemet Dam	No	No
CANYON LAKE	Dam	Lake Perris Dam	No	No
CANYON LAKE	Fault	Elsinore Fault	Yes	No
CANYON LAKE	Flood Channel	Lake Elsinore Outflow Channel	No	No
CANYON LAKE	Lake	Canyon Lake	Yes	Yes
CANYON LAKE	Lake	Lake Elsinore	No	No
CANYON LAKE	River	San Jacinto River	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Canyon Lake

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$6,462.16
Non-Structural Damage	$31,376.46
Building Damage	$37,838.62
Contents Damage	$10,825.90
Inventory Loss	$144.08
Relocation Cost	$155.21
Income Loss	$694.57
Rental Income Loss	$1,363.75
Wage Loss	$744.80
Total Loss	$51,766.93

Commercial Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Canyon Lake

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Educational Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Canyon Lake

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Single Family Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	7
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Kathy Bennet AGENCY: Canyon Lake DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	2
WILDLAND FIRE	3	4	3	3	3
FLOOD	3	3	4	2	1
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	1	11
LANDSLIDES	2	3	2	1	6
INSECT INFESTATION	3	4	3	1	13
EXTREME SUMMER/WINTER WEATHER	2	4	2	1	7
SEVERE WIND EVENT	3	3	3	2	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	0	18
TERRORISM	4	2	4	1	14
OTHER MAN-MADE					
PIPELINE	2	3	2	1	9
AQUEDUCT	2	3	2	0	10
TRANSPORTATION	2	4	2	1	4
BLACKOUTS	3	4	3	2	8
HAZMAT ACCIDENTS	3	3	3	2	15
NUCLEAR ACCIDENT	4	2	4	2	5
TERRORISM	4	2	4	2	16
CIVIL UNREST	2	2	2	2	17
JAIL/PRISON EVENT	1	2	1	2	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
H	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections
M	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
H	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
L	Harden repeater sites
M	Continue existing interoperability project
	Strengthen/harden
	Relocate
	Redundancy
	Mobile repeaters

FLOODS

H	Update development policies for flood plains
H	Public education on locations of flood plains
H	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
H	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
M	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)

	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
M	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
M	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
L	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment
M	Fire spotter program/red flag program
	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
M	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
M	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
N/A	Establish FEMA coordination processes based on ICS
M	Brush clearings around repeaters

L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
M	Code enforcement
M	Codes prohibiting fireworks
M	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
L	General public drought awareness
	◊ Lawn watering rotation
N/A	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
M	Create a SONGS regional planning group
	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
L	Public education
	◊ Bi-lingual signs
	◊ Blackout information
N/A	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Canyon Lake	
Contact:	Kathy Bennett, City Clerk
Phone:	(951) 244-2955

MITIGATION STRATEGY INFORMATION

Proposal Name:

Construct bridge and roadway at Goetz and Railroad Canyon Road to raise above 100 year flood level requirements

Proposal Location:

Goetz at Railroad Canyon Road City of Canyon Lake

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
X	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
X	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

1993 Flood and 1995 flooding has happened due to inadequate flood channel under roadway and this rebuild with the Audie Murphy project will control water flow to remain under and in channel and not flood over roadway. Water flow from upstream and mountain causes flooding during heavy rain periods.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

The proposal is to elevate Goetz Rd. in the area of Railroad Canyon Rd. in order to reduce the flooding impact on the area. Culvert pipes will be placed under the newly elevated roadway to allow for a smooth flow of floodwaters to run through the area.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency: In coordination with Riverside County Road Department.

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
x	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Canyon Lake	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES XX NO**		
Current Population in Jurisdiction or Served	10500	Projected Population in Jurisdiction or Served - in 2010	11800
Current Sq Miles in Jurisdiction or Served	4.3	Projected Sq Miles in Jurisdiction or Served - in 2010	4.3
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Number 33	
What is the number one land issue your agency will face in the next five years	Traffic		
Approximate Number of Homes/Apts/etc.	4600	Projected Number of Homes/Apts/etc.- in 2010	4800
Approximate Total Residential Value	$2,300,000,000	Projected Residential Total Value - in 2010	$2,300,000,000
Approximate Number of Commercial Businesses	400-500	Projected Number of Commercial Businesses - in 2010	425
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	5 $115,000,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	5 $115,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100 $2,300,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100 $2,300,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	35 $805,000,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	40 $920,000,000
Approximate Percentage of Commercial Businesses in flood hazard zones	10	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	15
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	15	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	25
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	100	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	100
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Canyon Lake**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 20, 2004**
Local Point of Contact: **Kathy Bennet**	**Address:** **31516 Railroad Canyon Rd.** **Canyon Lake, CA 92587**	
Title: **City Clerk**		
Agency: **City of Canyon Lake**		
Phone Number: **(951) 244-2955**	**E-Mail: kathy-staff@pe.net**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP	**M**	
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this	Part II, CANYON LAKE Section	**M**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			***preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, CANYON LAKE Section	**M**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Part II CANYON LAKE Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, CANYON LAKE Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Nuclear incidents Pgs 125 – 128 Part II, Canyon Lake Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** If yes, where in MJP: Yes, Part II, CANYON LAKE Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & CANYON LAKE Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, CANYON LAKE Section	**S**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Cathedral City

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		CATHEDRAL CITY		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Div. Chief, Emergency Prep. Coordinator		
First Name:	Mike	Last Name:	Hatfield	
Agency Address:	Street:	32-100 Desert Vista Rd.		
	City:	Cathedral City		
	State:	CA		
	Zip:	92234		
Contact Phone	760-770-8200		FAX	760-328-3902
E-mail	mhatfield@cathederalcity.gov			

Population Served	47,300	Square Miles Served	21

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	7/31/2002

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	7/31/2002
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	NO
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	YES
NON-REINFORCED BRIDGES	YES
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	YES
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	YES
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
CATHEDRAL CITY	Fault	San Andreas	No	Yes
CATHEDRAL CITY	Hazmat Storage Location	Superior Pools	Yes	No
CATHEDRAL CITY	Pipeline	High Pressure Gas Line	Yes	No
CATHEDRAL CITY	Pipeline	Southern Pacific Pipeline	Yes	No
CATHEDRAL CITY	Railroad Track	Southern Pacific Railroad	Yes	No
CATHEDRAL CITY	River	White Water River	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Cathedral

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$39,683.51
Non-Structural Damage	$168,167.24
Building Damage	$207,850.76
Contents Damage	$50,451.28
Inventory Loss	$957.23
Relocation Cost	$942.45
Income Loss	$6,759.00
Rental Income Loss	$13,927.03
Wage Loss	$9,105.04
Total Loss	$289,992.76

Commercial Casualties for Daytime Event	
Medical Aid	22
Hospital Treatment	9
Life-Threatening Severity	2
Death	4

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Cathedral

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Educational Casualties for Daytime Event	
Medical Aid	13
Hospital Treatment	3
Life-Threatening Severity	1
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	11
Hospital Treatment	3
Life-Threatening Severity	0
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	18
Hospital Treatment	4
Life-Threatening Severity	0
Death	1

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Cathedral

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Single Family Casualties for Daytime Event	
Medical Aid	8
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	73
Hospital Treatment	20
Life-Threatening Severity	3
Death	6

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Cathedral City AGENCY: Cathedral City Fire Department DATE: June 15, 2004

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	3	3	2
WILDLAND FIRE	3	4	2	2	12
FLOOD	3	3	3	3	1
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	4	7
LANDSLIDES	2	3	1	2	13
INSECT INFESTATION	3	4	1	3	14
EXTREME SUMMER/WINTER WEATHER	2	4	3	4	4
SEVERE WIND EVENT	3	3	2	4	5
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	2	15
TERRORISM	4	2	1	2	16
OTHER MAN-MADE					
PIPELINE	2	3	2	2	11
AQUEDUCT	2	3	0	0	19
TRANSPORTATION	2	4	2	3	8
BLACKOUTS	3	4	3	3	3
HAZMAT ACCIDENTS	3	3	2	3	6
NUCLEAR ACCIDENT	4	2	0	0	18
TERRORISM	4	2	2	2	9
CIVIL UNREST	2	2	2	2	10
JAIL/PRISON EVENT	1	2	1	1	17
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
H	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
H	◊ Hotel/motel literature
H	◊ Local radio stations for education
M	◊ Public education via utilities
L	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
L	◊ Mobile home parks
M	Develop educational materials on structural reinforcement and home inspections
M	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
M	Pre - identify empty commercial space for seismic re-location

N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
M	Harden repeater sites
L	Continue existing interoperability project
M	Strengthen/harden
L	Relocate
L	Redundancy
M	Mobile repeaters

FLOODS

L	Update development policies for flood plains
M	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete

N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
L	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
H	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
H	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
M	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
L	Fire spotter program/red flag program

L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
M	Public education program
L	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
N/A	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
M	Involve insurance agencies in mitigation programs
H	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
N/A	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
M	General public drought awareness
L	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
H	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement

N/A	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
H	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
H	Cooling stations - MOUs in place
L	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
L	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
M	◊ Bi-lingual signs
M	◊ Blackout information
M	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Cathedral City	
Contact:	Mike Hatfield, Emergency Services Coordinator
Phone:	(760) 770-8200

MITIGATION STRATEGY INFORMATION

Proposal Name:

City Wide Flood Control Proposal

Proposal Location:

City sphere of influence

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

The city prepared a study to manage storm water runoff city wide in 1997. In this study the need was for storm water runoff control was cited as a result the floods experienced during the late 1960's.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

Mapping the Flood zones is required to show the true condition of the Flood zones. Currently we have the design criteria for citywide flood and storm water runoff and control system. Due to the unfunded expense of $47 million, the proposal has not been undertaken.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Cathedral City		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES X NO**	
Current Population in Jurisdiction or Served	50,000	Projected Population in Jurisdiction or Served - in 2010	98,000
Current Sq Miles in Jurisdiction or Served	21.5 sq.mi	Projected Sq Miles in Jurisdiction or Served - in 2010	21.5 sq.mi
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. City Resolutions (2003-11) and (2003-12) Chapter 2.20 CCMC	
What is the number one land issue your agency will face in the next five years	Lack of Land	Lack of land due to citywide expansion	
Approximate Number of Homes/Apts/etc.	21,045	Projected Number of Homes/Apts/etc.- in 2010	43,045
Approximate Total Residential Value	600,000,000	Projected Residential Total Value - in 2010	1,200,000,000
Approximate Number of Commercial Businesses	1,017	Projected Number of Commercial Businesses - in 2010	1,200
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	5% $30,000,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	5% $60,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $600,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $1,200,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	0%	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	0%
Approximate Percentage of Commercial Businesses in flood hazard zones	10%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	10%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	5%	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	10%
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	100%	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	100%
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0%	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0%
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Cathedral City**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Mike Hatfield**	**Address:** **32-100 Desert Vista** **Cathedral City, Ca 92234**	
Title: **Division Chief**		
Agency: **City of Cathedral City**		
Phone Number: **760-770-8204**	**E-Mail: mhatfielld@ci-cathedral.city.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Cathedral City Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Cathedral City Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Cathedral City Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Cathedral City Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
		– 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Civil unrest Pages 129 – 131 Terrorism Pages 135 – 139 Part II, Cathedral City Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Cathedral City Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Cathedral City Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Cathedral City Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Coachella

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		COACHELLA		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Emergency Services Coordinator		
First Name:	George	Last Name:	Torres	
Agency Address:	Street:	1515 6th Street		
	City:	Coachella		
	State:	CA		
	Zip:	92236		
Contact Phone	(760) 398-4202		FAX	(760) 398-8117
E-mail	gtorres@coachella.org			

Population Served	26,750
Square Miles Served	29

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	YES
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	NO
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	NO
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	YES
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	YES

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**YES**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
COACHELLA	Hazmat Manufacturing Facility	Armtec Defense Products	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Cochella

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$7,165.91
Non-Structural Damage	$32,197.80
Building Damage	$39,363.72
Contents Damage	$10,265.21
Inventory Loss	$112.53
Relocation Cost	$183.07
Income Loss	$731.50
Rental Income Loss	$1,956.08
Wage Loss	$832.12
Total Loss	$53,444.23

Commercial Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Cochella

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Cochella

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	11
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: George Torres AGENCY: City of Coachella DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**3**	**3**	**1**
WILDLAND FIRE	3	4	**1**	**3**	**7**
FLOOD	3	3	**1**	**2**	**11**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**1**	**2**	**10**
LANDSLIDES	2	3	**0**	**0**	**19**
INSECT INFESTATION	3	4	**1**	**2**	**12**
EXTREME SUMMER/WINTER WEATHER	2	4	**2**	**4**	**2**
SEVERE WIND EVENT	3	3	**2**	**3**	**5**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**1**	**2**	**13**
TERRORISM	4	2	**1**	**2**	**14**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**3**	**9**
AQUEDUCT	2	3	**1**	**2**	**15**
TRANSPORTATION	2	4	**2**	**4**	**8**
BLACKOUTS	3	4	**3**	**3**	**4**
HAZMAT ACCIDENTS	3	3	**2**	**3**	**3**
NUCLEAR ACCIDENT	4	2	**1**	**1**	**18**
TERRORISM	4	2	**3**	**2**	**6**
CIVIL UNREST	2	2	**2**	**2**	**16**
JAIL/PRISON EVENT	1	2	**1**	**2**	**17**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
M	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
L	Improve the Emergency Alert System (EAS)
L	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
L	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
L	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
L	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
L	Ensure Uniform Building Code compliance
L	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)

L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
L	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
L	Harden repeater sites
L	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
L	Redundancy
L	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
L	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction

L	Upgrade dirt embankments to concrete
L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
L	◊ Evacuation documentation
L	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
L	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
L	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment

N/A	Fire spotter program/red flag program
L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
L	◊ Building protection
L	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
L	Code enforcement
L	Codes prohibiting fireworks
L	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization

L	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
L	◊ Terrorism planning/coordination
L	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
L	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
L	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Coachella
Contact: George Torres
Phone: (760) 398-3502

MITIGATION STRATEGY INFORMATION

Proposal Name:

Disaster Community Planning

Proposal Location:

Coachella City wide

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
x	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History — List any previous disaster related events (dates, costs, etc)

There is no current community outreach and training programs for multi-hazard events.

Description of Mitigation Goal Narrative: Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

Create and provide public awareness and mitigation training for homes and business for the following events: earthquake, floods and extreme weather events. The goal of the training would be to prepare the public for a disastrous event and teach them how to minimize damage to their homes and businesses.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	x	No		Responsible Agency: City of Coachella

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

x	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
x	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **City of Coachella**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES __X__ NO _____**	
Current Population in Jurisdiction or Served	26,700	Projected Population in Jurisdiction or Served - in 2010	40,000
Current Sq Miles in Jurisdiction or Served	29.36	Projected Sq Miles in Jurisdiction or Served - in 2010	35
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Ordinance # 709	
What is the number one land issue your agency will face in the next five years	Extensive Residential and Commercial Development		
Approximate Number of Homes/Apts/etc.	5,500	Projected Number of Homes/Apts/etc.- in 2010	8,500
Approximate Total Residential Value	1200000.	Projected Residential Total Value - in 2010	22100000.
Approximate Number of Commercial Businesses	200	Projected Number of Commercial Businesses - in 2010	250
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	0	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	0
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	5% $600,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	10% $2,210,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	0	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	0
Approximate Percentage of Commercial Businesses in flood hazard zones	0	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	0
Approximate Percentage of Commercial Businesses in earthquake hazard zones	5%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	10%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	20	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	30
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Coachella**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 22, 2004**
Local Point of Contact: **George Torres**	**Address:** **1515 Sixth Street** **Coachella, CA 92236**	
Title: **Emergency Services Coordinator**		
Agency: **City of Coachella**		
Phone Number: **(760) 398-4202**	**E-Mail: gtorres@coachella.org**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Coachella Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Coachella Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Coachella Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Coachella Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Civil unrest Pages 129 – 131 Terrorism Pages 135 – 139 Part II, Coachella Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Coachella Section	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Coachella Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Coachella Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Corona

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		CORONA		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Disaster Preparedness Analyst		
First Name:	Lynn	Last Name:	Rowe	
Agency Address:	Street:	815 West Sixth Street		
	City:	Corona		
	State:	CA		
	Zip:	92882		
Contact Phone	951-736-2458		FAX	951-279-6052
E-mail	lynn.rowe@ci.corona.ca.us			

Population Served	137,000	Square Miles Served	38

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	9/3/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	9/3/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**NO**
CONTROLLED FLOOD CONTROL CHANNEL	**NO**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**NO**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**NO**
MOBILE HOME PARKS	**NO**
NON-REINFORCED FREEWAY BRIDGES	**YES**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**NO**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**YES**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**YES**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**YES**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**YES**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	YES
NEAR A DAM	NO
UPSTREAM FROM A DAM	YES
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	YES
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
CORONA	Dam	Lake Mathews	No	Yes
CORONA	Dam	Prado	No	Yes
CORONA	Fault	Elsinore	Yes	Yes
CORONA	Flood Channel	Mabey Canyon	Yes	No
CORONA	Flood Channel	Temescal Creek	Yes	Yes
CORONA	Hazmat Manufacturing Facility	Corona Energy Partners	Yes	No
CORONA	Hazmat Manufacturing Facility	Corona Products	Yes	No
CORONA	Hazmat Manufacturing Facility	Dart Containers	Yes	No
CORONA	Hazmat Manufacturing Facility	G & S Associates	Yes	No
CORONA	Hazmat Manufacturing Facility	Golden Cheese	Yes	No
CORONA	Hazmat Manufacturing Facility	GTM, Inc.	Yes	No
CORONA	Hazmat Manufacturing Facility	Hi-Country	Yes	No
CORONA	Hazmat Manufacturing Facility	US Battery	Yes	No
CORONA	Hazmat Manufacturing Facility	Watson Pharmaceuticals	Yes	No
CORONA	Hazmat Storage Location	Advanced Fuel Filtration	Yes	No
CORONA	Hazmat Storage Location	All American Asphalt	Yes	No
CORONA	Hazmat Storage Location	Liston Aluminum	Yes	No
CORONA	Hazmat Storage Location	United Agri Products	Yes	No
CORONA	Lake	Lake Mathews	No	Yes
CORONA	Pipeline	Four Corners Oil Pipline	Yes	No
CORONA	Pipeline	Natural Gas	Yes	No
CORONA	Railroad Track	BNSF	Yes	No
CORONA	Reservoir	Lake Mathews	No	Yes
CORONA	River	Santa Ana River	No	Yes

Dams Summary				
Dam Name	LAKE MATTHEWS	MABEY CANYON	OAK STREET	LEE LAKE
River	COLORADO RIVER	MABEY CREEK	OAK STREET CR	TEMESCAL CREEK
Nearest City	RIVERSIDE	CORONA	CORONA	CORONA
Height (feet)	264	46	36	47
Storage (acre-feet)		111	400	2,800
Year Built	1918	1974	1979	1919
Drainage Area (Sq miles)	40	1.5	6.02	53
Hazard Type	High	High	High	Significant

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Corona

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$121,777.43
Non-Structural Damage	$495,846.69
Building Damage	$617,624.08
Contents Damage	$185,940.89
Inventory Loss	$10,987.63
Relocation Cost	$2,723.25
Income Loss	$25,377.07
Rental Income Loss	$37,225.37
Wage Loss	$30,086.29
Total Loss	$909,964.55

Commercial Casualties for Daytime Event	
Medical Aid	62
Hospital Treatment	20
Life-Threatening Severity	3
Death	7

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Corona

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Educational Casualties for Daytime Event	
Medical Aid	28
Hospital Treatment	7
Life-Threatening Severity	1
Death	2

Hotels Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	104
Hospital Treatment	27
Life-Threatening Severity	4
Death	8

Other Residential Casualties for Daytime Event	
Medical Aid	22
Hospital Treatment	4
Life-Threatening Severity	0
Death	1

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Corona

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Single Family Casualties for Daytime Event	
Medical Aid	19
Hospital Treatment	3
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	236
Hospital Treatment	61
Life-Threatening Severity	9
Death	18

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Lynn Rowe AGENCY: Corona Fire DATE: 6/14/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	5
WILDLAND FIRE	3	4	3	3	3
FLOOD	3	3	2	3	6
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	2	8
LANDSLIDES	2	3	2	2	9
INSECT INFESTATION	3	4	1	2	14
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	11
SEVERE WIND EVENT	3	3	2	3	4
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	1	2	15
TERRORISM	4	2	1	2	16
OTHER MAN-MADE					
PIPELINE	2	3	3	2	7
AQUEDUCT	2	3	0	0	19
TRANSPORTATION	2	4	4	3	2
BLACKOUTS	3	4	2	3	10
HAZMAT ACCIDENTS	3	3	3	3	1
NUCLEAR ACCIDENT	4	2	2	2	17
TERRORISM	4	2	4	2	12
CIVIL UNREST	2	2	2	2	13
JAIL/PRISON EVENT	1	2	1	2	18
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

L	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
L	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
M	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
M	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
H	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections
M	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location

L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
L	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
N/A	Strengthen/harden
L	Relocate
H	Redundancy
M	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete

L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
L	Traffic light protection
M	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
M	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
L	Fire spotter program/red flag program

L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
M	◊ Building protection
L	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
M	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
H	Fuel modification/removal
L	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
M	Develop County drought plan
M	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement

N/A	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
H	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
M	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
M	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Corona
Contact: Lynn Rowe
Phone: 951-736-2458

MITIGATION STRATEGY INFORMATION

Proposal Name:

Urban Wildland Interface Master Plan

Proposal Location:

City of Corona and interface jurisdictions

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

January 1, 2003 to December 31, 2003; Corona Fire Department responded to 105 reports of vegetation fire. Various historical interface vegetation fires have occurred. According to the Nature Conservancy, the Santa Ana Mountain Range in the Cleveland National Forest is the largest intact natural landscape in Southern California.

Corona has been identified as a community at risk, according to FEMA Gegion IX Community Status list. The risk to the community is not only from wildfire, but also from flooding that occurs when a fire ravaged area con no longer retain the soil. The Wildland Interface plan will provide specific guidance on how to achieve the goals set forth in the city's General Plan, 2003, p 190.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

The City of Corona has approximately 12 miles of interface with the Cleveland national Forest and approximately 10 miles of interface with State or County Responsibility Area. Presently, there is no comprehensive master plan to address fire protection strategies in these rapidly developing interface zones. Additionally, there is little coordination with other invested stake-holders, such as the Cleveland National forest, the City of Corona Planning Department and /or the Nature Conservancy, for example. Construction standards, development impact on threatened and endangered species, public access and other planning issues need to be incorporated into an Urban Wildland Interface Master Plan. This Master Plan will identify and coordinate all future efforts for planning and development within this corridor.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
X	Hazard Mitigation Funds

	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **City of Corona**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES __X__ NO _____**	
Current Population in Jurisdiction or Served	141,000	Projected Population in Jurisdiction or Served - in 2010	148,300
Current Sq Miles in Jurisdiction or Served	38.54 Sq miles	Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	Ordinance No. 2429 Ordinance No. 1973, 2077 Corona Municipal Code Chapters 2.52, 3.36	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.	43,807	Projected Number of Homes/Apts/etc.- in 2010	45,000
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses	4,900	Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones	.7%	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	.9%
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	2.8%	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	3%
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	.5%	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	1%
Approximate Percentage of Commercial Businesses in flood hazard zones	.7%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	.9%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	.3%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	.5%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones		Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	0	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	.5%
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance? N/A	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: City of Corona	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: County of Riverside**	**Date of Completion:**

Local Point of Contact: Lynn Rowe	**Address:** 815 West Sixth Street Corona, CA 92882
Title: Disaster Preparedness Analyst	
Agency: Corona Fire Department	
Phone Number: 951-736-2458	**E-Mail:** Lynn.Rowe@ci.corona,ca.us

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	Part I pages 3-7	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part I General	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part I General	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Part II Corona Supplemental - Ordinance No. 2429 Of Chapter 2.52 of the Corona Municipal Code	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II - Corona Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pg 28-40 Flooding Pg 41-53 Earthquakes Pg 54-66 Extreme Weather 67-76 HazMat Incidents 94-101 Transportation 102-110 Pipeline 111-114 Blackouts 115-118		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Part II - Corona Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part II - Corona Section	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part II - Corona Section	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part II - Corona Section Supplemental Questionnaire / HAZUS Map	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part II - Corona Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c) (3) (iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Part II – Corona Section Mitigation Strategy Proposal	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I Pages 38-101		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part II - Corona Section Supplemental Questionnaire	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.			

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Desert Hot Springs

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		DESERT HOT SPRINGS		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Emergency Program Manager		
First Name:	Ernie	Last Name:	Calderon	
Agency Address:	Street:	65950 Pierson Blvd.		
	City:	Desert Hot Springs		
	State:	CA		
	Zip:	92240		
Contact Phone	760-2514921		FAX	760-251-7896
E-mail	e.calderon@ci.desert-hot-springs.ca.us			

Population Served	17,200	Square Miles Served	26

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	3/7/1998

Does your organization have a disaster/emergency operations plan?	NO
What year was your plan last updated?	3/7/1998
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**NO**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**NO**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	**NO**
COULD BE CONSIDERED A BIO-HAZARD RISK	**NO**

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
DESERT HOT SPRINGS	Fault	Sam Amdreas	No	Yes
DESERT HOT SPRINGS	Lake	Country Lake	Yes	No
DESERT HOT SPRINGS	Pipeline	Along I-10	No	Yes
DESERT HOT SPRINGS	Railroad Track	Santa Fe	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Desert Hot Springs

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$19,091.54
Non-Structural Damage	$83,640.43
Building Damage	$102,731.96
Contents Damage	$22,632.09
Inventory Loss	$188.26
Relocation Cost	$443.48
Income Loss	$2,005.40
Rental Income Loss	$6,124.59
Wage Loss	$2,394.82
Total Loss	$136,520.60

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	1
Life-Threatening Severity	0
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Desert Hot Springs

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Educational Casualties for Daytime Event	
Medical Aid	4
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	17
Hospital Treatment	4
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Desert Hot Springs

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Single Family Casualties for Daytime Event	
Medical Aid	4
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	27
Hospital Treatment	7
Life-Threatening Severity	1
Death	2

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Ernie Calderon AGENCY: City of Desert Hot Spring DATE: 6-30-04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**4**	**1**
WILDLAND FIRE	3	4	**2**	**2**	**2**
FLOOD	3	3	**3**	**3**	**3**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**3**	**10**
LANDSLIDES	2	3	**2**	**2**	**13**
INSECT INFESTATION	3	4	**2**	**1**	**19**
EXTREME SUMMER/WINTER WEATHER	2	4	**3**	**3**	**4**
SEVERE WIND EVENT	3	3	**3**	**3**	**5**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**0**	**0**	**17**
TERRORISM	4	2	**0**	**0**	**18**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**3**	**8**
AQUEDUCT	2	3	**2**	**3**	**9**
TRANSPORTATION	2	4	**2**	**2**	**12**
BLACKOUTS	3	4	**3**	**3**	**6**
HAZMAT ACCIDENTS	3	3	**3**	**3**	**7**
NUCLEAR ACCIDENT	4	2	**2**	**1**	**15**
TERRORISM	4	2	**2**	**1**	**16**
CIVIL UNREST	2	2	**2**	**2**	**11**
JAIL/PRISON EVENT	1	2	**1**	**1**	**14**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
M	◊ Government employees
M	◊ Businesses
M	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
N/A	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
N/A	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
H	◊ Mobile home parks
H	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
N/A	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)

N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
M	◊ Links to jurisdictions
M	◊ Alerting information
M	◊ Volunteer information
H	Evaluate depths of aquifers/wells for adequacy during quakes
H	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
M	Continue existing interoperability project
H	Strengthen/harden
H	Relocate
M	Redundancy
H	Mobile repeaters

FLOODS

H	Update development policies for flood plains
H	Public education on locations of flood plains
H	Develop multi-jurisdictional working group on floodplain management
	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
H	Perform GIS mapping of flood channels, etc.
H	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
H	Create map of flood channels/diversions/water systems etc
	Require digital floor plans on new non-residential construction

H	Upgrade dirt embankments to concrete
	Conduct countywide needs study on drainage capabilities
	Increase number of pumping stations
	Increase sandbag distribution capacities
	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
H	Training for city/county PIOs about flood issues
	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
	Vegetation restoration programs
	Ensure critical facilities are hardened/backed up
	Hardening water towers
	Terrorism Surveillance - cameras at reservoirs/dams
	Riverbed maintenance
	Evaluate existing lift stations for adequacy
	Acquisition of property for on-site retention
	Evaluate regulations on roof drainage mechanisms
	Erosion-resistant plants
H	Traffic light protection
	Upkeep of diversionary devices
H	Install more turn-off valves on pipelines
H	Backup generation facilities
	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
L	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
H	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment

L	Fire spotter program/red flag program
L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
M	Public education program
L	◊ Weather reporting/alerting
L	◊ Building protection
L	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
H	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
H	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
H	"Red Tag" homes in advance of event
H	Provide fire-resistant gel to homeowners
H	Involve insurance agencies in mitigation programs
H	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
H	Fuel modification/removal
H	Evaluate building codes
H	Maintaining catch basins

OTHER HAZARDS

	Improve pipeline maintenance
	Wetlands mosquito mitigation (West Nile Virus)
	Insect control study
	Increase County Vector Control capacities
	General public drought awareness
	◊ Lawn watering rotation
	Develop County drought plan
	Mitigation of landslide-prone areas
	Develop winter storm sheltering plan
	Ease permitting process for building transmission lines
	Evaluate restrictions on dust/dirt/generating activities during wind seasons
	Rotational crop planning/soil stabilization

	Enhance agricultural checkpoint enforcement
	Agriculture - funding of detection programs
	Communications of pipeline maps (based on need to know)
	Improved notification plan on runaway trains
	Improve/maintain blackout notification plan.
	Support business continuity planning for utility outages
	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
	Create a SONGS regional planning group
	◊ Include dirty bomb planning
	Cooling stations - MOUs in place
	Fire Ant eradication program
	White Fly infestation abatement/eradication program
	Develop plan for supplemental water sources
	Public education on low water landscaping
	Salton Sea desalinization
	Establish agriculture security standards (focus on water supply)
	ID mutual aid agreements
	Vulnerability assessment on fiber-optic cable
	Upgrade valves on California aqueduct
	Public education
	◊ Bi-lingual signs
	◊ Blackout information
	Notification system for rail traffic - container contents
	Control and release of terrorism intelligence
	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Desert Hot Springs	
Contact:	Ernie Calderon, Emergency Services Manager
Phone:	(760) 251-4921

MITIGATION STRATEGY INFORMATION

Proposal Name:

Master Drainage Study

Proposal Location:

City Limits and Sphere of Influence

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

In the past 10 years the City and County have spent over 2.3 million dollars to improve drainage and flooding in the hillside and in the central city areas, part of which is in the Mission Creek Channel, The Little Morongo Channel, and the Verbena Channel. The City's Civic Center and Local Disaster Centers are located in parts of Flood Zone AO and Zone X. We have significantly reduced the Flood Hazards for this area by implementing Flood Control Devices. We are in currently in the process of updating our Flood Plain Maps for the east portion of the city. The last Map was created in May of 1985.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

Remapping the Flood zones is required to show the true condition of the Flood zones. Currently we are in the design process of a new City Hall and Civic Center which will hold the Emergency Operation Center. I.e. Flood zone AO and X which we feel no longer exists.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Desert Hot Springs, Ca		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES XX NO**	
Current Population in Jurisdiction or Served	17,800	Projected Population in Jurisdiction or Served - in 2010	32,000
Current Sq Miles in Jurisdiction or Served	26	Projected Sq Miles in Jurisdiction or Served - in 2010	35
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	YES	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	Water	Water	
Approximate Number of Homes/Apts/etc.	2300	Projected Number of Homes/Apts/etc.- in 2010	6900
Approximate Total Residential Value	300,000	Projected Residential Total Value - in 2010	500,000
Approximate Number of Commercial Businesses	60	Projected Number of Commercial Businesses - in 2010	80
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	30 $90,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	10 $50,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	15 $45,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	15 $75,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	80 $240,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	50 $250,000
Approximate Percentage of Commercial Businesses in flood hazard zones	10	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	10
Approximate Percentage of Commercial Businesses in earthquake hazard zones	80	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	80
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	5	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	5
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	0	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? Yes			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Desert Hot Springs**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Ernie Calderon**		**Address:** **65950 Pierson Blvd.** **Desert Hot Springs, Ca. 92240**
Title: **Emergency Program Manager**		
Agency: **City of Desert Hot Springs**		
Phone Number: **(760) 251-4921**		**E-Mail: e.calderon@ci.desert-hot-springs.ca.us**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 3-7**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Desert Hot Springs Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Desert Hot Springs Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Desert Hot Springs Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Desert Hot Springs Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Desert Hot Springs Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Desert Hot Springs Section	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Desert Hot Springs Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Desert Hot Springs Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Hemet

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		HEMET		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Emergency Services Coordinator		
First Name:	Joe	Last Name:	Glenn	
Agency Address:	Street:	445 East Florida Avenue		
	City:	Hemet		
	State:	CA		
	Zip:	92543		
Contact Phone	951-765-2451		FAX	951-765-2328
E-mail	jglenn@cityofhemet.org			

Population Served	62,200	Square Miles Served	25.97

Does your organization have a general plan?	NO
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**YES**
DAMS IN JURISDICTION	**YES**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**YES**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**NO**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**YES**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	YES
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
HEMET	Dam	Diamond Valley Lake	Yes	Yes
HEMET	Fault	San Jacinto Fault Zone	Yes	Yes
HEMET	Flood Channel	Unknown	Yes	No
HEMET	Lake	Diamond Valley Lake	Yes	Yes
HEMET	Railroad Track	Unknown	Yes	No
HEMET	River	San Jacinto River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Hemet

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$79,038.50
Non-Structural Damage	$317,404.28
Building Damage	$396,442.78
Contents Damage	$90,629.43
Inventory Loss	$1,766.88
Relocation Cost	$1,701.73
Income Loss	$12,839.28
Rental Income Loss	$22,193.19
Wage Loss	$17,638.23
Total Loss	$543,211.52

Commercial Casualties for Daytime Event	
Medical Aid	45
Hospital Treatment	21
Life-Threatening Severity	5
Death	11

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Hemet

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Educational Casualties for Daytime Event	
Medical Aid	15
Hospital Treatment	4
Life-Threatening Severity	1
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	22
Hospital Treatment	6
Life-Threatening Severity	1
Death	2

Other Residential Casualties for Daytime Event	
Medical Aid	95
Hospital Treatment	21
Life-Threatening Severity	1
Death	2

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Hemet

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Single Family Casualties for Daytime Event	
Medical Aid	17
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	194
Hospital Treatment	54
Life-Threatening Severity	9
Death	17

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Joe Glenn AGENCY: Hemet DATE: 06/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**3**	**1**
WILDLAND FIRE	3	4	**2**	**2**	**3**
FLOOD	3	3	**2**	**2**	**8**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**3**	**10**
LANDSLIDES	2	3	**2**	**1**	**16**
INSECT INFESTATION	3	4	**2**	**2**	**15**
EXTREME SUMMER/WINTER WEATHER	2	4	**2**	**3**	**7**
SEVERE WIND EVENT	3	3	**3**	**3**	**4**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**2**	**2**	**17**
TERRORISM	4	2	**3**	**2**	**18**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**1**	**13**
AQUEDUCT	2	3	**3**	**2**	**11**
TRANSPORTATION	2	4	**2**	**2**	**9**
BLACKOUTS	3	4	**3**	**3**	**5**
HAZMAT ACCIDENTS	3	3	**3**	**3**	**2**
NUCLEAR ACCIDENT	4	2	**3**	**2**	**12**
TERRORISM	4	2	**3**	**2**	**6**
CIVIL UNREST	2	2	**2**	**1**	**14**
JAIL/PRISON EVENT	1	2	**1**	**1**	**19**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
L	◊ Government employees
M	◊ Businesses
L	◊ Hotel/motel literature
M	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
L	Improve the Emergency Alert System (EAS)
L	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
H	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
H	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
L	◊ Mobile home parks
M	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities

L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
L	Backup water supplies for hospitals
L	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
M	Website with mitigation/contractor/retrofitting information
M	◊ Links to jurisdictions
M	◊ Alerting information
M	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
H	Strengthen/harden
M	Relocate
H	Redundancy
M	Mobile repeaters

FLOODS

M	Update development policies for flood plains
M	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
H	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc

L	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
M	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
M	Look at County requirements for neighborhood access
M	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
H	Ensure critical facilities are hardened/backed up
M	Hardening water towers
H	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
L	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
H	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
M	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information

M	Enhanced fire fighting equipment
L	Fire spotter program/red flag program
L	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
H	Volunteer home inspection program
	Public education program
L	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
M	Fuel modification/removal
M	Evaluate building codes
H	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
H	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
H	Increase County Vector Control capacities
M	General public drought awareness
M	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons

L	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
H	◊ Staffing for terrorism mitigation
M	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
M	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Hemet
Contact: Joseph Glenn
Phone: 951-765-2451

MITIGATION STRATEGY INFORMATION

Proposal Name:

Diamond Valley Lake Inundation Plan

Proposal Location:

Diamond Valley Lake and surrounding communities

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
X	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

Last year, the Metropolitan Water District began the final phase of filling the newly constructed Diamond Valley. Although initial mapping of the flood inundation potential have been developed, the Coty of Hemet's Emergency Operations Plan has not been fully updated to meet this new threat.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

With the completion of this Hazard Identification Plan, the City of Hemet now has a better understanding of the threat that the new dam has on the City. With the newly developed dam inundation maps from the County's GIS Department, the City can now complete the planning process for this threat. This planning process will include a review of the maps and other data by all City Departments. There will then be planning meeting to determine what updates need to be made to the City's Disaster Plan as well as the City's General Plan. It is estimated that this will take approximately six top nine months to complete. The only non-internal cost will be the cost of additional updated flood maps from the County's GIS Department. All other costs will be internal personnel and printing costs.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: CITY OF HEMET	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES**		
Current Population in Jurisdiction or Served	65,408	Projected Population in Jurisdiction or Served - in 2010	75,000
Current Sq Miles in Jurisdiction or Served	25.97	Projected Sq Miles in Jurisdiction or Served - in 2010	35.00
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	YES	If yes, please list ordinance or regulation number. City Ord. 1076	
What is the number one land issue your agency will face in the next five years	MSHCP	**Multi-Species Habitat Conservation Plan**	
Approximate Number of Homes/Apts/etc.	25,686	Projected Number of Homes/Apts/etc.- in 2010	27,500
Approximate Total Residential Value	5,137,200,000	Projected Residential Total Value - in 2010	5,500,000,000
Approximate Number of Commercial Businesses	2,016	Projected Number of Commercial Businesses - in 2010	2,250
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	65% $3,339,180,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	65% $3,575,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $5,137,200,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $5,500,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	5% $256,860,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	10% $550,000,000
Approximate Percentage of Commercial Businesses in flood hazard zones	65%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	65%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	5%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	10	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	15
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	10	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	15
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?		YES	

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Hemet**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 20, 2004**
Local Point of Contact: **Joe Glenn**	**Address:** **445 East Florida Avenue** **Hemet, CA 92543**	
Title: **Emergency Services Coordinator**		
Agency: City of Hemet		
Phone Number: (951) 765-2451	**E-Mail:** **JGlenn@cityofhemet.org**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 3 -7**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		

Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, City of Hemet Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, City of Hemet Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II City of Hemet Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, City of Hemet Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pages 28 – 40 Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, City of Hemet Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, City of Hemet Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	

	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II City of Hemet Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, City of Hemet Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Indian Wells

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		INDIAN WELLS		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Personnel/Risk Director		
First Name:	Mel	Last Name:	Windsor	
Agency Address:	Street:	44-950 Eldorado Dr.		
	City:	Indian Wells		
	State:	Ca		
	Zip:	92210		
Contact Phone	760-346-2489		FAX	760-346-0407
E-mail	mwindsor@cityofindianwells.org			

Population Served	4,400
Square Miles Served	13

Does your organization have a general plan?	yes
Does your organization have a safety component to the general plan?	yes
What year was your plan last updated?	1996

Does your organization have a disaster/emergency operations plan?	yes
What year was your plan last updated?	1992
Do you have a recovery annex or section in your plan?	
Do you have a terrorism/WMD annex or section in your plan?	

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**NO**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**NO**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**NO**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**NO**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**No**
HAVE BEEN DAMAGED BY FLOOD	**No**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**No**
HAVE BEEN DAMAGED BY FOREST FIRE	**No**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**No**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**No**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**No**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	Yes
NEAR FLOOD PLAIN	Yes
NEAR RAILROAD TRACKS	No
NEAR A DAM	No
UPSTREAM FROM A DAM	No
DOWNSTREAM FROM A DAM	No
DOWNSTREAM OF A LAKE	No
DOWNSTREAM FROM A RESERVOIR	No
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	Yes
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	No
ON AN EARTHQUAKE FAULT	Yes
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	No
IN A FOREST AREA	No
NEAR A FOREST AREA	No
NEAR A MAJOR HIGHWAY	No
A HAZARDOUS WASTE FACILITY	No
NEAR A HAZARDOUS WASTE FACILITY	No
A HAZARDOUS STORAGE FACILITY	No
NEAR A HAZARDOUS STORAGE FACILITY	No
NON REINFORCED BUILDINGS	No
A MAJOR GAS/OIL PIPELINE	No
NEAR A MAJOR GAS/OIL PIPELINE	No

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
INDIAN WELLS	Aqueduct	Coachella Canal	Yes	No
INDIAN WELLS	Fault	San Andreas	No	Yes
INDIAN WELLS	Fault	San Jacinto	No	Yes
INDIAN WELLS	Flood Channel	Coachella Valley Stormwater Channel	Yes	No
INDIAN WELLS	Flood Channel	La Quinta Evacuation Channel	Yes	No
INDIAN WELLS	Pipeline	10 Freeway pipelines	No	Yes
INDIAN WELLS	Reservoir	Lake Cahuilla	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Indian Wells

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$2,899.71
Non-Structural Damage	$14,881.65
Building Damage	$17,781.36
Contents Damage	$5,021.69
Inventory Loss	$81.65
Relocation Cost	$86.94
Income Loss	$1,112.92
Rental Income Loss	$1,044.15
Wage Loss	$1,139.87
Total Loss	$26,268.58

Commercial Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Indian Wells

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Indian Wells

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	4
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Mel Windsor/Matt Creason AGENCY: City of Indian Wells DATE: 6-30-04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**4**	**1**
WILDLAND FIRE	3	4	**2**	**1**	**12**
FLOOD	3	3	**3**	**3**	**4**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**3**	**2**
LANDSLIDES	2	3	**2**	**1**	**13**
INSECT INFESTATION	3	4	**2**	**1**	**14**
EXTREME SUMMER/WINTER WEATHER	2	4	**3**	**3**	**5**
SEVERE WIND EVENT	3	3	**3**	**3**	**6**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**0**	**0**	**18**
TERRORISM	4	2	**0**	**0**	**19**
OTHER MAN-MADE					
PIPELINE	2	3	**1**	**1**	**15**
AQUEDUCT	2	3	**2**	**2**	**7**
TRANSPORTATION	2	4	**2**	**2**	**8**
BLACKOUTS	3	4	**3**	**3**	**3**
HAZMAT ACCIDENTS	3	3	**2**	**2**	**9**
NUCLEAR ACCIDENT	4	2	**3**	**1**	**16**
TERRORISM	4	2	**2**	**2**	**10**
CIVIL UNREST	2	2	**2**	**2**	**11**
JAIL/PRISON EVENT	1	2	**1**	**1**	**17**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
H	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
H	◊ Hotel/motel literature
H	◊ Local radio stations for education
H	◊ Public education via utilities
H	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
N/A	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
H	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
H	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
M	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
H	Website with mitigation/contractor/retrofitting information
H	◊ Links to jurisdictions
H	◊ Alerting information
H	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

	Communications Interoperability
	Harden repeater sites
	Continue existing interoperability project
	Strengthen/harden
	Relocate
	Redundancy
	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
M	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
H	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)

	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
M	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
M	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
M	Traffic light protection
M	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters

L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
M	Involve insurance agencies in mitigation programs
H	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
L	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
H	Improve/maintain blackout notification plan.
H	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
	◊ Include dirty bomb planning
H	Cooling stations - MOUs in place
M	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
H	Public education
	◊ Bi-lingual signs
	◊ Blackout information
M	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	City of Indian Wells
Contact:	Matthew Creason, and Melton Windsor, Public Safety Division
Phone:	(760) 346-2489

MITIGATION STRATEGY INFORMATION

Proposal Name:

Construct an new Emergency Operation Center for the City of Indian Wells

Proposal Location:

City of Indian Wells Public Safety Building

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Currently the City of Indian Wells operates the Emergency Operation Center in a Sheriff's Departments Substation, which is located in an earthquake fault zone. The facility does not meet current earthquake standards. I addition, the facility has become inadequate to the City's needs to effectively operate a full EOC. During the City's EOC activations in the Earthquake Drills, our Emergency Managers identified that our current level of staffing cannot fit into the EOC. The training for our staff had to be held in two rotations. If a large event was to hit the City of Indian Wells and full activation was required, the E.O.C. we would have to be moved to a larger building at City Hall.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

The City of Indian Wells needs a new EOC that is in a current earthquake standard facility. The new EOC will be able to handle the each Section of the SEMS function and the staff members that are involved in the sections. The new EOC would also have a separate area for meeting for the Management Teams, PIO room for adequate news media meetings, Radio Room, a Fax Center and a Satellite Communication Center for the communication issues.

The EOC would also be able to house, store the emergency food and water, paper supplies a Television and a copier. Each department would have access to Internet terminals to send e-mails and to access the RIMS programs. The computers would allow the Finance Department the ability to track all of the City's expenditures on the computers. This would give the City of Indian Wells the ability to create an EOC more effective in relation to the growing staff and a growing population in any Disaster.

As part of this project, the City will begin to look at new locations for an EOC. The project will identify non-risk locations for the new EOC and determine what equipment will be needed. Once a location has been determined, facility costs will be established and various funding sources will be identified.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency: City of Indian Wells

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Indian Wells		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES XX NO**	
Current Population in Jurisdiction or Served	4003	Projected Population in Jurisdiction or Served - in 2010	5833
Current Sq Miles in Jurisdiction or Served	12.9	Projected Sq Miles in Jurisdiction or Served - in 2010	12.9
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	YES	If yes, please list ordinance or regulation number. CHAPTER 2.32 CIVIL DEFENSE AND DISASTER PREPAREDNESS	
What is the number one land issue your agency will face in the next five years	Water issues		
Approximate Number of Homes/Apts/etc.	4346	Projected Number of Homes/Apts/etc.- in 2010	5261
Approximate Total Residential Value	3.13 billion	Projected Residential Total Value - in 2010	4 billion
Approximate Number of Commercial Businesses	250	Projected Number of Commercial Businesses - in 2010	275
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	5
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	4	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	5
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	4	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	5
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	4	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	5
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Indian Wells**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Matt Creason and Mel Windsor**	**Address:** **440850 El Dorado Drive** **Indian Wells, Ca 92210**	
Title: **Emergency Services Coordinators**		
Agency: **City of Indian Wells**		
Phone Number: **760-346-2489**	**E-Mail: mcreason@ci-indian-wells.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	

PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation	Part II, Indian Wells Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

	planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Indian Wells Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Indian Wells Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Indian Wells Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Civil unrest Pages 129 – 131 Terrorism Pages 135 – 139 Part II, Indian Wells Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Indian Wells Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Indian Wells Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Indian Wells Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Indio

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		INDIO		
Type Agency/Jurisdiction:		City Indio		
Contact Person:	Title:	Administrative Proposal Manager		
First Name:	Mark	Last Name:	Wasserman	
Agency Address:	Street:	100 Civic Center Mall		
	City:	Indio		
	State:	CA		
	Zip:	92202		
Contact Phone	760-342-6500		FAX	760-342-6597
E-mail	mwasserman@indio.org			

Population Served	54,500
Square Miles Served	26

Does your organization have a general plan?	Yes
Does your organization have a safety component to the general plan?	Yes
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	2004
Do you have a recovery annex or section in your plan?	No
Do you have a terrorism/WMD annex or section in your plan?	No

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	N
AIRPORT NEXT TO JURISDICTION	Y
DAIRY INDUSTRY	N
POULTRY INDUSTRY	N
CROPS/ORCHARDS	Y
DAMS IN JURISDICTION	N
DAMS NEXT TO JURISDICTION	N
LAKE/RESERVOIR IN JURISDICTION	Y
LAKE/RESERVOIR NEAR JURISDICTION	Y
JURISDICTION IN FLOOD PLAIN	Y
CONTROLLED FLOOD CONTROL CHANNEL	Y
UNCONTROLLED FLOOD CONTROL CHANNEL	N
EARTHQUAKE FAULTS IN JURISDICTION	Y
EARTHQUAKE FAULTS NEXT TO JURISDICTION	Y
MOBILE HOME PARKS	Y
NON-REINFORCED FREEWAY BRIDGES	Y
NON-REINFORCED BRIDGES	Y
BRIDGES IN FLOOD PLAIN	Y
BRIDGES OVER OR ACROSS RIVER/STREAM	Y
ROADWAY CROSSING RIVER/STREAM	Y
NON REINFORCED BUILDINGS	Y
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	Y
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	Y
FOREST AREA IN JURISDICTION	N
FOREST AREA NEXT TO JURISDICTION	N
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	N
MAJOR GAS/OIL PIPELINES IN JURISDICTION	Y
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	Y
RAILROAD TRACKS IN JURISDICTION	Y
RAILROAD TRACKS NEXT TO JURISDICTION	Y
HAZARDOUS WASTE FACILITIES IN JURISDICTION	N
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	N
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	N
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	N

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**Y**
NEAR FLOOD PLAIN	**Y**
NEAR RAILROAD TRACKS	**Y**
NEAR A DAM	**N**
UPSTREAM FROM A DAM	**N**
DOWNSTREAM FROM A DAM	**N**
DOWNSTREAM OF A LAKE	**N**
DOWNSTREAM FROM A RESERVOIR	**N**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**Y**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**N**
ON AN EARTHQUAKE FAULT	**Y**
NEAR AN EARTHQUAKE FAULT	**Y**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**N**
IN A FOREST AREA	**N**
NEAR A FOREST AREA	**N**
NEAR A MAJOR HIGHWAY	**Y**
A HAZARDOUS WASTE FACILITY	**N**
NEAR A HAZARDOUS WASTE FACILITY	**N**
A HAZARDOUS STORAGE FACILITY	**N**
NEAR A HAZARDOUS STORAGE FACILITY	**N**
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**N**
HAVE BEEN DAMAGED BY FLOOD	**Y**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**Y**
HAVE BEEN DAMAGED BY FOREST FIRE	**N**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**N**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**N**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**N**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	Y
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	N
NEAR FLOOD PLAIN	N
NEAR RAILROAD TRACKS	N
NEAR A DAM	N
UPSTREAM FROM A DAM	N
DOWNSTREAM FROM A DAM	N
DOWNSTREAM OF A LAKE	N
DOWNSTREAM FROM A RESERVOIR	N
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	N
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	N
ON AN EARTHQUAKE FAULT	N
NEAR AN EARTHQUAKE FAULT	Y
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	N
IN A FOREST AREA	N
NEAR A FOREST AREA	N
NEAR A MAJOR HIGHWAY	Y
A HAZARDOUS WASTE FACILITY	N
NEAR A HAZARDOUS WASTE FACILITY	N
A HAZARDOUS STORAGE FACILITY	N
NEAR A HAZARDOUS STORAGE FACILITY	N
NON REINFORCED BUILDINGS	N
A MAJOR GAS/OIL PIPELINE	N
NEAR A MAJOR GAS/OIL PIPELINE	N

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	Y
COULD BE CONSIDERED A BIO-HAZARD RISK	Y

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
INDIO	Aqueduct	Coachella Canal	Yes	No
INDIO	Fault	San Andreas	No	Yes
INDIO	Fault	San Jacinto	No	Yes
INDIO	Flood Channel	Coachella Valley Stormwater Channel	Yes	No
INDIO	Flood Channel	La Quinta Evacuation Channel	Yes	No
INDIO	Pipeline	10 Freeway pipelines	No	Yes
INDIO	Reservoir	Lake Cahuilla	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Indio

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$16,181.42
Non-Structural Damage	$72,866.84
Building Damage	$89,048.27
Contents Damage	$24,665.11
Inventory Loss	$541.10
Relocation Cost	$443.55
Income Loss	$4,022.25
Rental Income Loss	$5,418.83
Wage Loss	$5,432.16
Total Loss	$129,571.28

Commercial Casualties for Daytime Event	
Medical Aid	7
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Indio

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	6
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	7
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Indio

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	27
Hospital Treatment	6
Life-Threatening Severity	1
Death	1

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Ken Weller AGENCY: City of Indio DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	2	1	15
FLOOD	3	3	3	3	7
OTHER NATURAL HAZARDS					
DROUGHT	3	3	4	3	5
LANDSLIDES	2	3	2	2	17
INSECT INFESTATION	3	4	3	3	6
EXTREME SUMMER/WINTER WEATHER	2	4	4	4	2
SEVERE WIND EVENT	3	3	3	3	8
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	4	3	3
TERRORISM	4	2	2	2	16
OTHER MAN-MADE					
PIPELINE	2	3	3	3	13
AQUEDUCT	2	3	3	3	14
TRANSPORTATION	2	4	3	3	9
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	3	3	10
NUCLEAR ACCIDENT	4	2	4	2	11
TERRORISM	4	2	4	2	12
CIVIL UNREST	2	2	2	2	18
JAIL/PRISON EVENT	1	2	2	2	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
L	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
L	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location

L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
N/A	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
M	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
M	Redundancy
M	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
L	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete

L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
L	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
L	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
L	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment
L	Fire spotter program/red flag program

	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
L	Code enforcement
L	Codes prohibiting fireworks
L	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
H	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
L	General public drought awareness
	◊ Lawn watering rotation
N/A	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement

L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
	◊ Include dirty bomb planning
M	Cooling stations - MOUs in place
M	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
M	Public education
	◊ Bi-lingual signs
	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: The City of Indio
Contact: Mark Wasserman
Phone: (760) 342-6500

MITIGATION STRATEGY INFORMATION

Proposal Name:

Review and Assessment Mapping of the City Flood and Storm Water Improvements

Proposal Location:

City Sphere of Influence

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

Storm water run-off over the last several years has created numerous flooded streets and intersections, causing a hazard to the driving public as well as a potential threat of flooding homes and businesses. In the past six years, the City has spent millions of dollars to improve storm water drainage and floodwater flow throughout the city. This work, plus the new land development in the incorporated areas of the city and the unincorporated areas just outside the city limits has dramatically changed the storm water flow and drainage in the city.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

With the recent changes in the flow of storm water in the City, the flood mapping for the City and its immediate area need updating. These updated maps will help in the planning process for both Emergency Management and future development in the City. Updated maps will also potentially help the residents and businesses of the community with their insurance rates. Many insurance companies base their insurance rates on older FEMA flood maps. These maps do not show current development or local improvements in the storm drain systems.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
X	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Indio		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES X NO**	
Current Population in Jurisdiction or Served	59,000	Projected Population in Jurisdiction or Served - in 2010	130,000
Current Sq Miles in Jurisdiction or Served	24.8	Projected Sq Miles in Jurisdiction or Served - in 2010	29
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	No	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	Residential Growth		
Approximate Number of Homes/Apts/etc.	25,000	Projected Number of Homes/Apts/etc.- in 2010	50,000
Approximate Total Residential Value	$4.5 Billion	Projected Residential Total Value - in 2010	$10.0 Billion
Approximate Number of Commercial Businesses	2,000	Projected Number of Commercial Businesses - in 2010	3,000
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	50 $2,250,000,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	50 $5,000,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100 $4,500,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100 $10,000,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	0	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	0
Approximate Percentage of Commercial Businesses in flood hazard zones	50	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	50
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	5	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	10
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	25	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	50
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? Yes			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: Indio	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: Mark Wasserman	**Address:** 100 Civic Center Mall Indio, Ca 92202	
Title: Emergency Services Coordinator		
Agency: City of Indio		
Phone Number: 760-342-6530	**E-Mail: mwasserman@indio.org**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Indio Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Indio Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Indio Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Indio Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Civil unrest Pages 129 – 131 Jails and prisons incidents Pages 132 – 134 Terrorism Pages 135 – 139 Part II, Indio Section	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Indio Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Indio Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Indio Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Lake Elsinore

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		LAKE ELSINORE		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	ESC		
First Name:	Bill	Last Name:	Payne	
Agency Address:	Street:	130 So. Main St.		
	City:	Lake Elsinore		
	State:	CA		
	Zip:	92530		
Contact Phone	951-674-5170		FAX	
E-mail	bpayne@lake-elsinore.org			

Population Served	33,050
Square Miles Served	38

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	1/1/1990

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1/1/1990
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**YES**
POULTRY INDUSTRY	**YES**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**NO**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**NO**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**YES**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**YES**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**YES**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	YES
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
LAKE ELSINORE	Dam	Canyon Lake Dam	No	No
LAKE ELSINORE	Dam	Diamond Valley Lake Dam	No	No
LAKE ELSINORE	Dam	Lake Hemet Dam	No	No
LAKE ELSINORE	Dam	Lake Perris Dam	No	No
LAKE ELSINORE	Fault	Elsinore Fault	Yes	No
LAKE ELSINORE	Flood Channel	Lake Elsinore Outflow Channel	Yes	No
LAKE ELSINORE	Lake	Canyon Lake	No	Yes
LAKE ELSINORE	Lake	Lake Elsinore	Yes	No
LAKE ELSINORE	River	San Jacinto River	Yes	No

Dams Summary		
Dam Name	QUAIL VALLEY	RAILROAD CANYON
River	SAN JACINTO RIVER	SAN JACINTO RV
Nearest City	LAKE ELSINORE	LAKE ELSINORE
Height (feet)	37	94
Storage (acre-feet)	178	
Year Built	1959	1928
Drainage Area (Sq mil	1.6	664
Hazard Type	Significant	High

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Lake Elsinore

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$44,661.19
Non-Structural Damage	$186,271.73
Building Damage	$230,932.92
Contents Damage	$59,213.14
Inventory Loss	$1,657.72
Relocation Cost	$1,009.34
Income Loss	$7,945.15
Rental Income Loss	$11,679.34
Wage Loss	$8,542.80
Total Loss	$320,980.37

Commercial Casualties for Daytime Event	
Medical Aid	12
Hospital Treatment	6
Life-Threatening Severity	1
Death	3

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Lake Elsinore

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Educational Casualties for Daytime Event	
Medical Aid	20
Hospital Treatment	5
Life-Threatening Severity	1
Death	2

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	19
Hospital Treatment	5
Life-Threatening Severity	1
Death	2

Other Residential Casualties for Daytime Event	
Medical Aid	22
Hospital Treatment	5
Life-Threatening Severity	0
Death	1

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Lake Elsinore

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Single Family Casualties for Daytime Event	
Medical Aid	12
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	86
Hospital Treatment	23
Life-Threatening Severity	4
Death	7

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Bill Payne AGENCY: Lake Elsinore DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	2
WILDLAND FIRE	3	4	3	3	3
FLOOD	3	3	4	2	1
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	1	11
LANDSLIDES	2	3	2	1	6
INSECT INFESTATION	3	4	3	1	13
EXTREME SUMMER/WINTER WEATHER	2	4	2	1	7
SEVERE WIND EVENT	3	3	3	2	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	0	18
TERRORISM	4	2	4	1	14
OTHER MAN-MADE					
PIPELINE	2	3	2	1	9
AQUEDUCT	2	3	2	0	10
TRANSPORTATION	2	4	2	1	4
BLACKOUTS	3	4	3	2	8
HAZMAT ACCIDENTS	3	3	3	2	15
NUCLEAR ACCIDENT	4	2	4	2	5
TERRORISM	4	2	4	2	16
CIVIL UNREST	2	2	2	2	17
JAIL/PRISON EVENT	1	2	1	2	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
H	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections
M	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
H	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
L	Harden repeater sites
M	Continue existing interoperability project
	Strengthen/harden
	Relocate
	Redundancy
	Mobile repeaters

FLOODS

H	Update development policies for flood plains
H	Public education on locations of flood plains
H	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
H	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
M	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)

	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
M	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
M	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
L	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment
M	Fire spotter program/red flag program
	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
M	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
M	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
N/A	Establish FEMA coordination processes based on ICS
M	Brush clearings around repeaters

L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
M	Code enforcement
M	Codes prohibiting fireworks
M	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
L	General public drought awareness
	◊ Lawn watering rotation
N/A	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
M	Create a SONGS regional planning group
	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
L	Public education
	◊ Bi-lingual signs
	◊ Blackout information
N/A	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Lake Elsinore	
Contact:	Bill Payne
Phone:	(951) 674-5170

MITIGATION STRATEGY INFORMATION

Proposal Name:

Crossing barriers on roadways

Proposal Location:

Various locations throughout the city

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
X	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	There are numerous locations throughout the city where floodwater from continuous raining flows across roadways and sidewalks. There have been instances where citizens have tried to cross such situations and have become stuck. This is a substantial safety concern.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

The known roadways that continually flood will have protective barriers/gates placed across them prior to floodwaters reaching the area. These devices will keep motorists away from the hazardous situations and divert them to more suitable roadways in time of flooding.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No	X	Responsible Agency: Additional partners could include Riverside County Flood Control.

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
X	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Lake Elsinore		DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES X NO	
Current Population in Jurisdiction or Served	35,358	Projected Population in Jurisdiction or Served - in 2010	43,000
Current Sq Miles in Jurisdiction or Served	38	Projected Sq Miles in Jurisdiction or Served - in 2010	42
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	YES	If yes, please list ordinance or regulation number. Ordinance 920	
What is the number one land issue your agency will face in the next five years	Increasing Development		
Approximate Number of Homes/Apts/etc.	23,000	Projected Number of Homes/Apts/etc.- in 2010	25,000
Approximate Total Residential Value	$9,062,000,000	Projected Residential Total Value - in 2010	$9,850,000,000
Approximate Number of Commercial Businesses	749	Projected Number of Commercial Businesses - in 2010	820
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	15% $1,359,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	18% $1,773,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $9,062,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $9,850,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	5% $453,100,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	9% $886,500,000
Approximate Percentage of Commercial Businesses in flood hazard zones	10%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	10%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	1%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	12	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	12
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	all	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	all
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction:	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan:**	**Date of Completion:**
City of Lake Elsinore	**Riverside County OES**	

Local Point of Contact: **Bill Payne**	**Address:** **521 North Langstaff** **Lake Elsinore, CA 92530**
Title: **Public Works Director**	
Agency: **Lake Elsinore Public Works.**	
Phone Number: 951-674-5170	**E-Mail:** **bpayne@lake-elsinore.org**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	Part I pages 3-7	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes Part II Lake Elsinore Section Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Yes Part II Lake Elsinore Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part II City of Lake Elsinore Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[Yes]** If yes, where in MJP: Part II City of Lake Elsinore Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part II City of Lake Elsinore Section	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part II City of Lake Elsinore Section	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part II City of Lake Elsinore Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part II City of Lake Elsinore Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Part II City of Lake Elsinore Section Hazard Mitigation Strategy Proposal	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I pages 38-101		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part II City of Lake Elsinore Section Supplemental Questionnaire	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.			

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of La Quinta

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		LA QUINTA		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Community Safety Manager		
First Name:	Deby	Last Name:	Conrad	
Agency Address:	Street:	P.O. Box 1504		
	City:	La Quinta		
	State:	CA		
	Zip:	92253-1504		
Contact Phone	(760) 777-7014		FAX	(760) 777-7011
E-mail	dconrad@la-quinta.org			

Population Served	30,450
Square Miles Served	30

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	3/20/2002

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	3/20/2002
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**NO**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**NO**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**NO**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**NO**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
LA QUINTA	Aqueduct	Coachella Canal	Yes	No
LA QUINTA	Fault	San Andreas	No	Yes
LA QUINTA	Fault	San Jacinto	No	Yes
LA QUINTA	Flood Channel	Coachella Valley Stormwater Channel	Yes	No
LA QUINTA	Flood Channel	La Quinta Evacuation Channel	Yes	No
LA QUINTA	Pipeline	10 Freeway pipelines	No	Yes
LA QUINTA	Reservoir	Lake Cahuilla	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of La Quinta

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$8,631.40
Non-Structural Damage	$37,098.89
Building Damage	$45,730.30
Contents Damage	$10,707.57
Inventory Loss	$97.82
Relocation Cost	$184.89
Income Loss	$699.23
Rental Income Loss	$1,584.26
Wage Loss	$759.34
Total Loss	$59,763.39

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of La Quinta

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	11
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of La Quinta

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	16
Hospital Treatment	3
Life-Threatening Severity	0
Death	1

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Deby Conrad AGENCY: La Quinta DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**4**	**1**
WILDLAND FIRE	3	4	**2**	**2**	**7**
FLOOD	3	3	**3**	**3**	**2**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**3**	**4**
LANDSLIDES	2	3	**2**	**2**	**8**
INSECT INFESTATION	3	4	**1**	**1**	**11**
EXTREME SUMMER/WINTER WEATHER	2	4	**4**	**3**	**5**
SEVERE WIND EVENT	3	3	**3**	**3**	**6**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**1**	**0**	**14**
TERRORISM	4	2	**3**	**10**	**15**
OTHER MAN-MADE					
PIPELINE	2	3	**1**	**1**	**16**
AQUEDUCT	2	3	**1**	**1**	**17**
TRANSPORTATION	2	4	**2**	**2**	**9**
BLACKOUTS	3	4	**3**	**3**	**3**
HAZMAT ACCIDENTS	3	3	**3**	**2**	**10**
NUCLEAR ACCIDENT	4	2	**2**	**1**	**18**
TERRORISM	4	2	**2**	**2**	**12**
CIVIL UNREST	2	2	**2**	**2**	**13**
JAIL/PRISON EVENT	1	2	**0**	**0**	**19**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
M	◊ Government employees
M	◊ Businesses
M	◊ Hotel/motel literature
M	◊ Local radio stations for education
M	◊ Public education via utilities
M	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
M	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
N/A	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
N/A	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
N/A	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)

N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
N/A	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
N/A	◊ Alerting information
N/A	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
H	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

M	Update development policies for flood plains
M	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction

L	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
M	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
M	◊ Publicize flood plain information (website?)
M	◊ Install warning/water level signage
M	◊ Enhanced public information
M	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
N	Enhanced fire fighting equipment

L	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
L	◊ Building protection
L	◊ Respiration
N/A	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
N/A	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
M	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
L	Increase County Vector Control capacities
L	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
M	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization

N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
L	◊ Bi-lingual signs
M	◊ Blackout information
N/A	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
M	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of La Quinta	
Contact:	Deby Conrad, Community Safety Manager
Phone:	(760) 777-7022

MITIGATION STRATEGY INFORMATION

Proposal Name:

Master Drainage Study

Proposal Location:

City sphere of influence

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

In the past fifteen years, the City has spent millions of dollars to improve drainage in the lower Cove and Village area of the City, part of which was the Bear Creek Channel. The City's Civic Center is located in the AO Floodzone. We believe the AO Floodzone is sigificantly decreased in size if not eliminated altogether. We are currently updating the Floodplain Maps done August 19, 1991.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

Remapping the Flood zones is required to show the true condition of the various Flood zones in the City. We are currently in the design process of a new Emergency Operations Center for the City which is to be located on the Civic Center Campus i.e. Flood zone AO of which we feel no longer exists.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency: The City of La Quinta

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of La Quinta	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _X_ NO _____**		
Current Population in Jurisdiction or Served	32,522	Projected Population in Jurisdiction or Served - in 2010	42,500
Current Sq Miles in Jurisdiction or Served	35.05	Projected Sq Miles in Jurisdiction or Served - in 2010	50
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Ordinance 48	
What is the number one land issue your agency will face in the next five years	Flooding		
Approximate Number of Homes/Apts/etc.	15,946	Projected Number of Homes/Apts/etc.- in 2010	20,000
Approximate Total Residential Value	$4,451,501,306.	Projected Residential Total Value - in 2010	$5,000,000,000.
Approximate Number of Commercial Businesses	100	Projected Number of Commercial Businesses - in 2010	125
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	25% $1,112,875,326	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	50% $2,500,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $4,451,501,306	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $5,000,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	0%	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	0%
Approximate Percentage of Commercial Businesses in flood hazard zones	40%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	50%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	40%	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	50%
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	100%	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	100%
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0%	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0%
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?		Yes	

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: La Quinta	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: Deby Conrad	**Address:** 78-495 Called Tapioca La Quinta, Ca 92253	
Title: Community Safety Manager		
Agency: City of La Quinta		
Phone Number: 760-777-7022	**E-Mail:** dconrad@la-quinta.org	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	

PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, La Quinta Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, La Quinta Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II La Quinta Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, La Quinta Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Civil unrest Pages 129 – 131 Terrorism Pages 135 – 139 Part II, La Quinta Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, La Quinta Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II La Quinta Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, La Quinta Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Moreno Valley

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		MORENO VALLEY		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Program Manager		
First Name:	LeAnn	Last Name:	Coletta	
Agency Address:	Street:	14177 Frederick Street		
	City:	Moreno Valley		
	State:	CA		
	Zip:	92584		
Contact Phone	951-413-3809		FAX	951-413-3801
E-mail	leannc@moval.org			

Population Served	150,203	Square Miles Served	50

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	6/24/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	6/24/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**YES**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**YES**
DAMS IN JURISDICTION	**YES**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**YES**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**YES**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**YES**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**YES**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**YES**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	YES
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	YES
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	YES
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
MORENO VALLEY	Dam	Lake Perris Dam	No	Yes
MORENO VALLEY	Dam	Perris Dam	Yes	No
MORENO VALLEY	Dam	Pigeon Pass Dam	Yes	No
MORENO VALLEY	Fault	San Jacinto Fault	Yes	No
MORENO VALLEY	Flood Channel	Oleander Channel	Yes	No
MORENO VALLEY	Flood Channel	Perris Valley Channel	Yes	No
MORENO VALLEY	Flood Channel	Quincy Flood Channel	Yes	No
MORENO VALLEY	Hazmat Storage Location	Ammonia	Yes	No
MORENO VALLEY	Hazmat Storage Location	Chlorine	Yes	No
MORENO VALLEY	Hazmat Storage Location	Fuel	Yes	No
MORENO VALLEY	Hazmat Storage Location	Hazardous Waste	Yes	No
MORENO VALLEY	Lake	Lake Perris	No	Yes
MORENO VALLEY	Pipeline	High Pressure Gas Line	Yes	No
MORENO VALLEY	Pipeline	Jet Fuel Line	Yes	No
MORENO VALLEY	Railroad Track	Santa Fe Railroad	No	Yes
MORENO VALLEY	Railroad Track	Union Pacific	No	Yes
MORENO VALLEY	Reservoir	Poor Man's Resevoir	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Moreno Valley

Scenario: M6.9 on Northern San Jacinto Fault
Epicenter Near Eastern Moreno Valley

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$102,582.50
Non-Structural Damage	$446,425.42
Building Damage	$549,007.94
Contents Damage	$143,035.12
Inventory Loss	$2,048.62
Relocation Cost	$2,505.99
Income Loss	$16,292.15
Rental Income Loss	$27,786.23
Wage Loss	$20,935.74
Total Loss	$761,611.72

Commercial Casualties for Daytime Event	
Medical Aid	80
Hospital Treatment	27
Life-Threatening Severity	4
Death	10

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	1
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Moreno Valley

Scenario: M6.9 on Northern San Jacinto Fault
Epicenter Near Eastern Moreno Valley

Educational Casualties for Daytime Event	
Medical Aid	59
Hospital Treatment	15
Life-Threatening Severity	2
Death	5

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	12
Hospital Treatment	3
Life-Threatening Severity	0
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	18
Hospital Treatment	4
Life-Threatening Severity	0
Death	1

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Moreno Valley

Scenario: M6.9 on Northern San Jacinto Fault
Epicenter Near Eastern Moreno Valley

Single Family Casualties for Daytime Event	
Medical Aid	31
Hospital Treatment	4
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	200
Hospital Treatment	54
Life-Threatening Severity	8
Death	17

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: LeAnn Coletta AGENCY: City of Moreno Valley DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**3**	**3**	**3**
WILDLAND FIRE	3	4	**1**	**4**	**1**
FLOOD	3	3	**2**	**3**	**2**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**1**	**4**	**6**
LANDSLIDES	2	3	**0**	**1**	**16**
INSECT INFESTATION	3	4	**1**	**1**	**15**
EXTREME SUMMER/WINTER WEATHER	2	4	**1**	**3**	**5**
SEVERE WIND EVENT	3	3	**1**	**3**	**4**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**0**	**0**	**18**
TERRORISM	4	2	**0**	**0**	**17**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**1**	**13**
AQUEDUCT	2	3	**2**	**2**	**2**
TRANSPORTATION	2	4	**2**	**1**	**7**
BLACKOUTS	3	4	**2**	**1**	**11**
HAZMAT ACCIDENTS	3	3	**2**	**1**	**10**
NUCLEAR ACCIDENT	4	2	**4**	**1**	**9**
TERRORISM	4	2	**4**	**2**	**8**
CIVIL UNREST	2	2	**1**	**1**	**14**
JAIL/PRISON EVENT	1	2	**0**	**0**	**19**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
L	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
M	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
H	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
H	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)

L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
H	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
M	Backup water supplies for hospitals
H	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
N/a	Evaluate adequacy of reservoir capacity for sprinkler systems
N/a	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
H	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
H	Strengthen/harden
M	Relocate
M	Redundancy
M	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete

L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
L	◊ Evacuation documentation
L	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
M	Hardening water towers
H	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
M	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
L	Fire spotter program/red flag program

L	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
M	Public education program
M	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
M	"Red Tag" homes in advance of event
H	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
M	Clear out abandoned vehicles from oases
M	Code enforcement
M	Codes prohibiting fireworks
M	Fuel modification/removal
L	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
L	Develop County drought plan
M	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement

L	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
L	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
M	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
M	Upgrade valves on California aqueduct
M	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Moreno Valley
Contact: LeAnn M. Coletta
Phone: 951.413.3809

MITIGATION STRATEGY INFORMATION

Proposal Name:

Cactus Channel Flood Control

Proposal Location:

Heacock and Cactus, Moreno Valley, CA

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

The Cactus Channel is a concern of the City of Moreno Valley, March AFB Civil Engineers, and the Joint Powers Authority (JPA). During raining and flooding, the water quickly rises in this area causing a great concern. During prior rains, the March AFB has shut off transformers to avoid damage from rising water.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

To avoid damage, we feel that the Cactus Channel needs to be reworked to prevent rising water from damaging surrounding areas. Currently, the channel is an eroded dirt channel. Our plan is to design a concrete wall channel with a sandy bottom. We plan to follow the existing alignment near the Elsworth entrance at the March ARB going easterly towards Heacock for slightly more than one mile.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Moreno Valley		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _X_ NO _____**	
Current Population in Jurisdiction or Served	155,105	Projected Population in Jurisdiction or Served - in 2010	168,298
Current Sq Miles in Jurisdiction or Served	50	Projected Sq Miles in Jurisdiction or Served - in 2010	50
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Ordinance 325, Resolution 91-95, 91-96, 91-97, 95-33, 95-34, 95-68	
What is the number one land issue your agency will face in the next five years	Growth related issues such as traffic		
Approximate Number of Homes/Apts/etc.	41,431	Projected Number of Homes/Apts/etc.- in 2010	45,013
Approximate Total Residential Value	$11,328,395,468.00	Projected Residential Total Value - in 2010	$12,307,814,564.00
Approximate Number of Commercial Businesses	4,719	Projected Number of Commercial Businesses - in 2010	4,766
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	<1% $113,283,954	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	<. 50% $61,539,072
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $11,328,395,468.00	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $12,307,814,564
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	5% $566,419,773	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	5% $615,390,728
Approximate Percentage of Commercial Businesses in flood hazard zones	2%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	3%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0%	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0%
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	100%	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	100%
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0%	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0%
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: City of Moreno Valley	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County Operational Area**	**Date of Completion:**

Local Point of Contact: LeAnn M. Coletta	**Address:** 14177 Frederick Street P.O. Box 88005 Moreno Valley, CA 92552
Title: Program Manager	
Agency: City of Moreno Valley	
Phone Number: 951.413.8114	**E-Mail:** leannc@moval.org

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 3 -7**	**M**	

PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, City of Moreno Valley Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, City of Moreno Valley Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II City of Moreno Valley Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, City of Moreno Valley Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pages 28 – 40 Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Civil unrest Pages 129 – 131 Jails and prisons incidents Pages 132 – 134 Terrorism Pages 135 – 139 Part II, City of Moreno Valley Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, City of Moreno Valley Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	

	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II City of Moreno Valley Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, City of Moreno Valley Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Murrieta

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		MURRIETA		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Battalion Chief		
First Name:	John	Last Name:	Thomas	
Agency Address:	Street:	41825 Juniper Street		
	City:	Murrieta		
	State:	CA		
	Zip:	92562		
Contact Phone	951-461-6156		FAX	951-677-6799
E-mail	jthomas@murrieta.org			

Population Served	71,000
Square Miles Served	34

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2004
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**YES**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**YES**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**YES**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
MURRIETA	Dam	Diamond Valey Lake	No	Yes
MURRIETA	Fault	Elsinore	Yes	No
MURRIETA	Flood Channel	Line G	Yes	No
MURRIETA	Lake	Diamond Valley Lake	No	Yes
MURRIETA	Lake	Lake Skinner	No	Yes
MURRIETA	River	Murrieta Creek	Yes	No
MURRIETA	Stream	Warm Springs	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Murrieta

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$47,785.38
Non-Structural Damage	$201,068.44
Building Damage	$248,853.80
Contents Damage	$68,715.72
Inventory Loss	$1,965.79
Relocation Cost	$1,112.84
Income Loss	$10,673.39
Rental Income Loss	$12,221.76
Wage Loss	$12,787.14
Total Loss	$356,330.40

Commercial Casualties for Daytime Event	
Medical Aid	17
Hospital Treatment	6
Life-Threatening Severity	1
Death	3

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Murrieta

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Educational Casualties for Daytime Event	
Medical Aid	15
Hospital Treatment	4
Life-Threatening Severity	1
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	26
Hospital Treatment	7
Life-Threatening Severity	1
Death	2

Other Residential Casualties for Daytime Event	
Medical Aid	13
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Murrieta

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Single Family Casualties for Daytime Event	
Medical Aid	9
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	80
Hospital Treatment	20
Life-Threatening Severity	3
Death	6

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: John Thomas AGENCY: City of Murrieta DATE: 2/14/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	3	3	1
WILDLAND FIRE	3	4	3	2	2
FLOOD	3	3	3	3	12
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	3	11
LANDSLIDES	2	3	2	1	14
INSECT INFESTATION	3	4	3	3	9
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	13
SEVERE WIND EVENT	3	3	2	2	10
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	3	7
TERRORISM	4	2	4	2	8
OTHER MAN-MADE					
PIPELINE	2	3	2	3	16
AQUEDUCT	2	3	2	3	15
TRANSPORTATION	2	4	2	3	17
BLACKOUTS	3	4	3	3	4
HAZMAT ACCIDENTS	3	3	3	3	3
NUCLEAR ACCIDENT	4	2	4	1	18
TERRORISM	4	2	4	2	6
CIVIL UNREST	2	2	2	2	19
JAIL/PRISON EVENT	1	2	2	2	5
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

LOW	Aggressive public education campaign in light of predictions
LOW	Generate new literature for dissemination to:
LOW	◊ Government employees
LOW	◊ Businesses
LOW	◊ Hotel/motel literature
LOW	◊ Local radio stations for education
LOW	◊ Public education via utilities
LOW	◊ Identify/create television documentary content
LOW	Improve the Emergency Alert System (EAS)
LOW	◊ Consider integration with radio notification systems
LOW	◊ Upgrade alerting and warning systems for hearing impaired
LOW	◊ Training and maintenance
N/A	Procure earthquake-warning devices for critical facilities
MED	Reinforce emergency response facilities
LOW	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
LOW	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
LOW	Develop a dam inundation plan for new Diamond Valley Reservoir
MED	Earthquake retrofitting
MED	◊ Bridges/dams/pipelines
MED	◊ Government buildings/schools
LOW	◊ Mobile home parks
MED	Develop educational materials on structural reinforcement and home inspections
HIGH	Ensure Uniform Building Code compliance
HIGH	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
MED	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location

N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
LOW	Mapping of liquefaction zones
MED	Incorporate County geologist data into planning
MED	Backup water supplies for hospitals
LOW	Evaluate pipeline seismic resiliency
LOW	Pre-positioning of temporary response structures
LOW	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
LOW	Website with mitigation/contractor/retrofitting information
LOW	◊ Links to jurisdictions
LOW	◊ Alerting information
LOW	◊ Volunteer information
LOW	Evaluate depths of aquifers/wells for adequacy during quakes
LOW	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

HIGH	Communications Interoperability
HIGH	Harden repeater sites
MED	Continue existing interoperability project
MED	Strengthen/harden
LOW	Relocate
LOW	Redundancy
MED	Mobile repeaters

FLOODS

LOW	Update development policies for flood plains
LOW	Public education on locations of flood plains
LOW	Develop multi-jurisdictional working group on floodplain management
LOW	Develop greenbelt requirements in new developments
LOW	Update weather pattern/flood plain maps
LOW	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
MED	Required water flow/runoff plans for new development
HIGH	Perform GIS mapping of flood channels, etc.
HIGH	Install vehicular crossing gates/physical barriers for road closure
HIGH	Maintenance of storm sewers/flood channels
HIGH	Create map of flood channels/diversions/water systems etc
LOW	Require digital floor plans on new non-residential construction
LOW	Upgrade dirt embankments to concrete

LOW	Conduct countywide needs study on drainage capabilities
LOW	Increase number of pumping stations
LOW	Increase sandbag distribution capacities
MED	Develop pre-planned response plan for floods
MED	◊ Evacuation documentation
LOW	◊ Re-examine historical flooding data for potential street re-design
HIGH	Training for city/county PIOs about flood issues
HIGH	Warning systems - ensure accurate information provided
MED	◊ Publicize flood plain information (website?)
MED	◊ Install warning/water level signage
MED	◊ Enhanced public information
MED	◊ Road closure compliance
MED	◊ Shelter locations
HIGH	◊ Pre-event communications
LOW	Look at County requirements for neighborhood access
LOW	◊ Secondary means of ingress/egress
LOW	Vegetation restoration programs
MED	Ensure critical facilities are hardened/backed up
LOW	Hardening water towers
LOW	Terrorism Surveillance - cameras at reservoirs/dams
MED	Riverbed maintenance
LOW	Evaluate existing lift stations for adequacy
LOW	Acquisition of property for on-site retention
LOW	Evaluate regulations on roof drainage mechanisms
LOW	Erosion-resistant plants
LOW	Traffic light protection
MED	Upkeep of diversionary devices
LOW	Install more turn-off valves on pipelines
LOW	Backup generation facilities
MED	Identify swift water rescue capabilities across County

WILDFIRES

HIGH	Aggressive weed abatement program
HIGH	◊ Networking of agencies for weed abatement
MED	Develop strategic plan for forest management
MED	Public education on wildfire defense
MED	Encourage citizen surveillance and reporting
LOW	Identify hydrants with equipment ownership information
MED	Enhanced fire fighting equipment
LOW	Fire spotter program/red flag program

LOW	◊ Expand to other utilities
HIGH	Research on insect/pest mitigation technologies
LOW	Volunteer home inspection program
HIGH	Public education program
LOW	◊ Weather reporting/alerting
MED	◊ Building protection
MED	◊ Respiration
HIGH	Pre-identify shelters/recovery centers/other resources
MED	Roofing materials/defensive spacing regulations
HIGH	Community task forces for planning and education
N/A	Fuel/dead tree removal
LOW	Strategic pre-placement of fire fighting equipment
MED	Establish FEMA coordination processes based on ICS
HIGH	Brush clearings around repeaters
LOW	Research new technologies for identifying/tracking fires
MED	Procure/deploy backup communications equipments
MED	"Red Tag" homes in advance of event
LOW	Provide fire-resistant gel to homeowners
LOW	Involve insurance agencies in mitigation programs
LOW	Clear out abandoned vehicles from oases
HIGH	Code enforcement
HIGH	Codes prohibiting fireworks
HIGH	Fuel modification/removal
MED	Evaluate building codes
HIGH	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
HIGH	Wetlands mosquito mitigation (West Nile Virus)
MED	Insect control study
HIGH	Increase County Vector Control capacities
LOW	General public drought awareness
LOW	◊ Lawn watering rotation
MED	Develop County drought plan
LOW	Mitigation of landslide-prone areas
MED	Develop winter storm sheltering plan
LOW	Ease permitting process for building transmission lines
LOW	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement

N/A	Agriculture - funding of detection programs
HIGH	Communications of pipeline maps (based on need to know)
MED	Improved notification plan on runaway trains
MED	Improve/maintain blackout notification plan.
MED	Support business continuity planning for utility outages
HIGH	Terrorism training/equipment for first responders
HIGH	◊ Terrorism planning/coordination
HIGH	◊ Staffing for terrorism mitigation
MED	Create a SONGS regional planning group
HIGH	◊ Include dirty bomb planning
LOW	Cooling stations - MOUs in place
LOW	Fire Ant eradication program
LOW	White Fly infestation abatement/eradication program
MED	Develop plan for supplemental water sources
LOW	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
LOW	ID mutual aid agreements
MED	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
LOW	Public education
LOW	◊ Bi-lingual signs
LOW	◊ Blackout information
N/A	Notification system for rail traffic - container contents
MED	Control and release of terrorism intelligence
LOW	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Murrieta	
Contact:	John Thomas
Phone:	915-830-1987

MITIGATION STRATEGY INFORMATION

Proposal Name:

Mitigating Flood and mosquito threat form the California Oaks Retention Basin

Proposal Location:

In the City of Murrieta west of Jackson Ave.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
X	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	The California Oaks Retention Basin was built in 1989. Since then, two major floods have generated millions of dollars in damages. We have been in a 10-year drought and we now have an opportunity to correct a problem. Riverside County has been hit hard by the West Nile Virus. This proposal will minimize the City of Murrieta's target hazard for mosquitoes and crows.

Description of Mitigation Goal Narrative: Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The California Oaks Retention Basin has become a local hazard for children, homeless, and a breeding ground for mosquitoes. The intention of this proposal is to reduce the water in the flood control retention basin. The constant flow of water into the basin currently dissipates through percolation to the underground and evaporation. It takes a sizable amount of rain to fill the basin. When storm water has exceeded the capacity of the retention basin water discharges through spillways. These spillways become clogged with vegetation growing in the retention basin. For 10 months out of the year, the basin is more of a swamp allowing mosquitoes to breed next to apartments. With the increased hazards associated with stagnating water in populated areas The City of Murrieta needs to change the nature of the retention basin. Proposed is a new drainpipe that will keep the amount of water down to better batch the daily irrigation run off water that comes in to the retention basin.
By adding a new drain that lowers the low point of the basin nuisance water flow will not accumulate. The vegetation will change and the City will be able to control and maintain the retention basin. The retention basin has been an attractive nuisance. Children and the homeless are drawn to the area and it is not a safe place. Vegetation and silt has decreased the total capacity of the basin. In 1991 over 10 million and 1993 15 million dollars were spent repairing damage from floods directly related to the excess flood water coming from the retention basin because it was over capacity. There were several rescues of people in harms way. The new threat from mosquitoes further emphasizes the need to reduce the hazards associated with the California Oaks retention basin.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency: The City of Murrieta

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City Of Murrieta	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _X_ NO _____**		
Current Population in Jurisdiction or Served	**77,000**	Projected Population in Jurisdiction or Served - in 2010	**110,000**
Current Sq Miles in Jurisdiction or Served	**34**	Projected Sq Miles in Jurisdiction or Served - in 2010	**34-44**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**Yes**	If yes, please list ordinance or regulation number. Fire Protection Plan	
What is the number one land issue your agency will face in the next five years	Rapid Growth		
Approximate Number of Homes/Apts/etc.	**22,000**	Projected Number of Homes/Apts/etc.- in 2010	**35,000**
Approximate Total Residential Value	**550 Million**	Projected Residential Total Value - in 2010	**700 Million**
Approximate Number of Commercial Businesses	**2890**	Projected Number of Commercial Businesses - in 2010	**4,000**
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	**10% $55,000,000**	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	**8% $56,000,000**
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	**15% $82,500,000**	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	**15% $105,000,000**
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	**10% $55,000,000**	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	**5% $35,000,000**
Approximate Percentage of Commercial Businesses in flood hazard zones	**5**	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	**0**
Approximate Percentage of Commercial Businesses in earthquake hazard zones	**20**	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	**20**
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	**0**	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**0**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**2**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**2**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**0**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**Yes**	If not, how will your jurisdiction do plan maintenance? Plan to be developed	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? Yes			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Murrieta Fire Department**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan Riverside County OES**	**Date of Completion:** **September 30, 2004**
Local Point of Contact: John Thomas		**Address:** **41825 Juniper St.** **Murrieta, Ca. 92562**
Title: **Emergency Preparedness Public Information Coordinator**		
Agency: City of Murrieta Fire Department		
Phone Number: 951-830-1987		**E-Mail: jthomas@murrieta.org**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 3 -7**	**M**	

PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, City of Murrieta Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, City of Murrieta Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II City of Murrieta Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, City of Murrieta Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, City of Murrieta Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, City of Murrieta Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II City of Murrieta Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, City of Murrieta Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Norco

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		NORCO		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:			
First Name:	Bob	Last Name:	Franck	
Agency Address:	Street:	P.O. Box 428		
	City:	Norco		
	State:	CA		
	Zip:	91760		
Contact Phone	951-737-8097		FAX	
E-mail	bfranck@ci.norco.ca.us			

Population Served	25,250	Square Miles Served	14

Does your organization have a general plan?	NO
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	YES
POULTRY INDUSTRY	YES
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	NO
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	YES
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
NORCO	Dam	Lake Mathews	No	Yes
NORCO	Dam	Prado	No	Yes
NORCO	Fault	Elsinore	Yes	Yes
NORCO	Flood Channel	Mabey Canyon	Yes	No
NORCO	Flood Channel	Temescal Creek	Yes	Yes
NORCO	Hazmat Manufacturing Facility	Corona Energy Partners	No	Yes
NORCO	Hazmat Manufacturing Facility	Corona Products	No	Yes
NORCO	Hazmat Manufacturing Facility	Dart Containers	No	Yes
NORCO	Hazmat Manufacturing Facility	G & S Associates	No	Yes
NORCO	Hazmat Manufacturing Facility	Golden Cheese	No	Yes
NORCO	Hazmat Manufacturing Facility	GTM, Inc.	No	Yes
NORCO	Hazmat Manufacturing Facility	Hi-Country	No	Yes
NORCO	Hazmat Manufacturing Facility	US Battery	No	Yes
NORCO	Hazmat Manufacturing Facility	Watson Pharmaceuticals	No	Yes
NORCO	Hazmat Storage Location	Advanced Fuel Filtration	No	Yes
NORCO	Hazmat Storage Location	All American Asphalt	No	Yes
NORCO	Hazmat Storage Location	Liston Aluminum	No	Yes
NORCO	Hazmat Storage Location	United Agri Products	No	Yes
NORCO	Lake	Lake Mathews	No	Yes
NORCO	Pipeline	Four Corners Oil Pipline	Yes	No
NORCO	Pipeline	Natural Gas	Yes	No
NORCO	Railroad Track	BNSF	Yes	No
NORCO	Reservoir	Lake Mathews	No	Yes
NORCO	River	Santa Ana River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Norco

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$27,062.76
Non-Structural Damage	$102,891.26
Building Damage	$129,954.03
Contents Damage	$38,700.09
Inventory Loss	$1,166.44
Relocation Cost	$668.71
Income Loss	$8,079.19
Rental Income Loss	$9,060.22
Wage Loss	$6,431.83
Total Loss	$194,060.50

Commercial Casualties for Daytime Event	
Medical Aid	14
Hospital Treatment	4
Life-Threatening Severity	1
Death	2

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Norco

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Educational Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	12
Hospital Treatment	3
Life-Threatening Severity	0
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	6
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Norco

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Single Family Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	41
Hospital Treatment	10
Life-Threatening Severity	2
Death	3

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Bob Franck AGENCY : Norco DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	3
WILDLAND FIRE	3	4	3	3	4
FLOOD	3	3	4	2	6
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	1	10
LANDSLIDES	2	3	2	1	14
INSECT INFESTATION	3	4	3	1	15
EXTREME SUMMER/WINTER WEATHER	2	4	2	1	7
SEVERE WIND EVENT	3	3	3	2	9
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	2	1
TERRORISM	4	2	4	1	12
OTHER MAN-MADE					
PIPELINE	2	3	2	1	16
AQUEDUCT	2	3	2	0	17
TRANSPORTATION	2	4	2	1	2
BLACKOUTS	3	4	3	2	13
HAZMAT ACCIDENTS	3	3	3	2	8
NUCLEAR ACCIDENT	4	2	4	2	19
TERRORISM	4	2	4	2	18
CIVIL UNREST	2	2	2	2	11
JAIL/PRISON EVENT	1	2	1	2	5
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

L	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
L	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
M	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
M	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
H	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections
M	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location

L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
L	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
N/A	Strengthen/harden
L	Relocate
H	Redundancy
M	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete

L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
L	Traffic light protection
M	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
M	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
L	Fire spotter program/red flag program

L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
M	◊ Building protection
L	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
M	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
H	Fuel modification/removal
L	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
M	Develop County drought plan
M	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement

N/A	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
H	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
M	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
M	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Norco
Contact: Robert Franck
Phone: (951) 737-8097 Ext. 2222

MITIGATION STRATEGY INFORMATION

Proposal Name:

Santa Ana River Bottom Interface Zone Fuel Management

Proposal Location:

The northern boundary of the city from the Hamner Ave bridge east to the city limit.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

During the past 20 years there have been regularly recurring wildfire events in the Santa Ana River bottom north of the City of Norco. These events have required the mobilization and commitment of large firefighting forces and have resulted in the destruction and/or damage to many homes in the subject area. The most recent destructive event was on January 6, 2002 when a Santa Ana Wind driven arson fire destroyed two homes and damaged six others.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

An aggressive fuel management program is needed in order to maintain a reasonable defense zone against the transmission of fire from the river bottom into the City. The Army Corps of Engineers “Bluff Stabilization Proposal” provided a mineral soil buffer of approximately 100 feet from the river bottom vegetation and the base of the Norco Bluffs. Maintenance of this mineral soil buffer will provide for a dramatically reduced communication of fire from the river bottom onto the homes situated along the Norco Bluffs between the Hamner Ave bridge and the northeast border of the city.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

YES	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

JURISDICTION: Norco	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES __X__ NO _____**		
Current Population in Jurisdiction or Served	**26,000**	Projected Population in Jurisdiction or Served - in 2010	**30,000**
Current Sq Miles in Jurisdiction or Served	**14.7**	Projected Sq Miles in Jurisdiction or Served - in 2010	**14.7**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**YES**	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.	**7,000**	Projected Number of Homes/Apts/etc.- in 2010	**8,000**
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses	**800**	Projected Number of Commercial Businesses - in 2010	**850**
Approximate Percentage of Homes/Apts/etc in flood hazard zones	**1**	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	**1**
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	**1**	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	**1**
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	**10**	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	**11**
Approximate Percentage of Commercial Businesses in flood hazard zones	**1**	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	**1**
Approximate Percentage of Commercial Businesses in earthquake hazard zones	**1**	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	**1**
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	**.5**	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	**.5**
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**0**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**0**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**0**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**YES**	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? YES			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Norco**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 9, 2004**
Local Point of Contact: **Bob Franck**		**Address:** **P.O. Box 428** **Norco, CA 91760**
Title: **Emergency Services Coordinator**		
Agency: **City of Norco**		
Phone Number: (951) 737-8097		**E-Mail: bfranck@ci.norco.ca.us**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 3-7**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	

Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, Norco Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Norco Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Norco Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Norco Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Terrorism Pages 135 – 139 Part II, Norco Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Norco Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Norco Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Norco Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Palm Desert

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		PALM DESERT		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Risk Manager		
First Name:	Gary	Last Name:	Rosenblum	
Agency Address:	Street:	73510 Fred Waring Drive		
	City:	Palm Desert		
	State:	CA		
	Zip:	92260		
Contact Phone	760-346-0611 Ext. 318		FAX	760-776-6395
E-mail	info@palm-desert.org			

Population Served	43,900
Square Miles Served	25

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**NO**
CONTROLLED FLOOD CONTROL CHANNEL	**NO**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**NO**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**YES**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
PALM DESERT	Aqueduct	Coachella Canal	Yes	No
PALM DESERT	Fault	San Andreas	No	Yes
PALM DESERT	Fault	San Jacinto	No	Yes
PALM DESERT	Flood Channel	Coachella Valley Stormwater Channel	Yes	No
PALM DESERT	Flood Channel	La Quinta Evacuation Channel	Yes	No
PALM DESERT	Pipeline	10 Freeway pipelines	No	Yes
PALM DESERT	Reservoir	Lake Cahuilla	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Palm Desert

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$8,063.73
Non-Structural Damage	$37,790.08
Building Damage	$45,853.80
Contents Damage	$12,579.60
Inventory Loss	$217.79
Relocation Cost	$235.76
Income Loss	$2,621.25
Rental Income Loss	$2,491.17
Wage Loss	$2,646.46
Total Loss	$66,645.84

Commercial Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Palm Desert

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Educational Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Palm Desert

Scenario: M7.1 on San Andreas Fault, epicenter northeast of Coachella

Single Family Casualties for Daytime Event	
Medical Aid	1
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	10
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Gary Rosenblum AGENCY: City of Palm Desert DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**4**	**1**
WILDLAND FIRE	3	4	**2**	**2**	**11**
FLOOD	3	3	**3**	**3**	**2**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**3**	**3**
LANDSLIDES	2	3	**2**	**1**	**8**
INSECT INFESTATION	3	4	**1**	**1**	**19**
EXTREME SUMMER/WINTER WEATHER	2	4	**3**	**3**	**5**
SEVERE WIND EVENT	3	3	**3**	**3**	**6**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**0**	**0**	**18**
TERRORISM	4	2	**0**	**0**	**17**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**2**	**9**
AQUEDUCT	2	3	**2**	**2**	**13**
TRANSPORTATION	2	4	**2**	**2**	**10**
BLACKOUTS	3	4	**3**	**3**	**4**
HAZMAT ACCIDENTS	3	3	**3**	**2**	**7**
NUCLEAR ACCIDENT	4	2	**2**	**1**	**16**
TERRORISM	4	2	**2**	**2**	**12**
CIVIL UNREST	2	2	**2**	**2**	**14**
JAIL/PRISON EVENT	1	2	**0**	**1**	**15**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
L	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
L	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)

L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
N/A	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
M	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

N/A	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
L	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction

L	Upgrade dirt embankments to concrete
L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
L	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
L	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
L	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment

L	Fire spotter program/red flag program
	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
L	Code enforcement
L	Codes prohibiting fireworks
L	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
H	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
L	General public drought awareness
	◊ Lawn watering rotation
N/A	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
H	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization

L	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
M	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
L	Public education
	◊ Bi-lingual signs
	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	Palm Desert
Contact:	Gary Rosenblum
Phone:	760-346-0611

MITIGATION STRATEGY INFORMATION

Proposal Name:

Portola Avenue Bridge over Whitewater Channel

Proposal Location:

Portola Avenue

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

x	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History — List any previous disaster related events (dates, costs, etc)

Portola Avenue washout in 1976 and 1979

Description of Mitigation Goal Narrative: — Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

Changes to the road with minimal road elevation and installation of culverts failed to prevent road closure in 1992 flood. Future road closures and potential damage to culvert system from future floods. Bridge will keep central City artery open in emergency weather events

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	x	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
x	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
x	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Palm Desert		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES __X__ NO _____**	
Current Population in Jurisdiction or Served	48,000	Projected Population in Jurisdiction or Served - in 2010	53,000
Current Sq Miles in Jurisdiction or Served	26	Projected Sq Miles in Jurisdiction or Served - in 2010	26
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes		
What is the number one land issue your agency will face in the next five years	Adequate Housing		
Approximate Number of Homes/Apts/etc.	32,000	Projected Number of Homes/Apts/etc.- in 2010	36,000
Approximate Total Residential Value	$10 Billion	Projected Residential Total Value - in 2010	$12 Billion
Approximate Number of Commercial Businesses	2,000	Projected Number of Commercial Businesses - in 2010	2,500
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	0	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100 $10,000,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100 $12,000,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	0	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	0
Approximate Percentage of Commercial Businesses in flood hazard zones	0	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	0
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	10	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	10
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting			Yes

purposes?	

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Palm Desert**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Gary Rosenblum**	**Address:** **73-510 Fred Waring Drive** **Palm Desert, Ca 92292260**	
Title: **Emergency Services Coordinator**		
Agency: **City of Palm Desert**		
Phone Number: **760-346-0611**	**E-Mail: grosenblum@ci.palm-desert.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Palm Desert Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Palm Desert Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Palm Desert Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Palm Desert Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Terrorism Pages 135 – 139 Part II, Palm Desert Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Palm Desert Section	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Palm Desert Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Palm Desert Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Palm Springs

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		PALM SPRINGS		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Fire Chief		
First Name:	Blake	Last Name:	Goetz	
Agency Address:	Street:	300 N. El Cielo Rd.		
	City:	Palm Springs		
	State:	CA		
	Zip:	92262		
Contact Phone	760-323-8185		FAX	760-778-8427
E-mail	BlakeG@ci.palm-springs.ca.us			

Population Served	44,000
Square Miles Served	96

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	3/1/2004

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	3/1/2004
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**YES**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**YES**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**YES**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**YES**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
PALM SPRINGS	Dam	Dry Falls	Yes	No
PALM SPRINGS	Fault	Garnet Hill Fault	Yes	No
PALM SPRINGS	Fault	San Andreas Fault	No	Yes
PALM SPRINGS	Flood Channel	South Palm Canyon Wash	Yes	No
PALM SPRINGS	Flood Channel	Tahquitz Creek	Yes	No
PALM SPRINGS	Flood Channel	Whitewater River	Yes	No
PALM SPRINGS	Pipeline	High Pressure Liquid Petroleum	Yes	Yes
PALM SPRINGS	Pipeline	So Calif. Gas high Pressure	Yes	Yes
PALM SPRINGS	Railroad Track	Union Pacific	Yes	Yes

Dams Summary	
Dam Name	TAHCHEVAH
River	TACHEVAH CREEK
Nearest City	PALM SPRINGS
Height (feet)	42
Storage (acre-feet)	
Year Built	1964
Drainage Area (Sq miles)	3.2
Hazard Type	High

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Palm Springs

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$68,041.05
Non-Structural Damage	$298,834.77
Building Damage	$366,875.81
Contents Damage	$92,603.06
Inventory Loss	$1,454.59
Relocation Cost	$1,744.12
Income Loss	$20,816.51
Rental Income Loss	$26,999.38
Wage Loss	$28,256.85
Total Loss	$538,750.30

Commercial Casualties for Daytime Event	
Medical Aid	92
Hospital Treatment	26
Life-Threatening Severity	4
Death	9

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Palm Springs

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Educational Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	17
Hospital Treatment	4
Life-Threatening Severity	1
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	27
Hospital Treatment	5
Life-Threatening Severity	0
Death	1

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Palm Springs

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Single Family Casualties for Daytime Event	
Medical Aid	9
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	152
Hospital Treatment	39
Life-Threatening Severity	6
Death	12

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Blake Goetz AGENCY: Palm Springs DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**3**	**4**	**1**
WILDLAND FIRE	3	4	**2**	**3**	**6**
FLOOD	3	3	**2**	**3**	**7**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**2**	**2**	**12**
LANDSLIDES	2	3	**2**	**1**	**13**
INSECT INFESTATION	3	4	**1**	**1**	**15**
EXTREME SUMMER/WINTER WEATHER	2	4	**2**	**4**	**5**
SEVERE WIND EVENT	3	3	**2**	**3**	**8**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**0**	**0**	**18**
TERRORISM	4	2	**0**	**0**	**19**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**3**	**10**
AQUEDUCT	2	3	**1**	**1**	**16**
TRANSPORTATION	2	4	**4**	**3**	**3**
BLACKOUTS	3	4	**3**	**4**	**2**
HAZMAT ACCIDENTS	3	3	**2**	**3**	**9**
NUCLEAR ACCIDENT	4	2	**1**	**1**	**17**
TERRORISM	4	2	**4**	**3**	**4**
CIVIL UNREST	2	2	**2**	**2**	**11**
JAIL/PRISON EVENT	1	2	**1**	**2**	**14**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
H	◊ Government employees
M	◊ Businesses
L	◊ Hotel/motel literature
H	◊ Local radio stations for education
L	◊ Public education via utilities
H	◊ Identify/create television documentary content
	Improve the Emergency Alert System (EAS)
L	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
L	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
N/a	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
N/A	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
H	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
M	Backup water supplies for hospitals

M	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
M	◊ Alerting information
M	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
M	Strengthen/harden
M	Relocate
H	Redundancy
H	Mobile repeaters

FLOODS

L	Update development policies for flood plains
H	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
H	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
H	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
H	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)

M	◊ Install warning/water level signage
H	◊ Enhanced public information
H	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
	Look at County requirements for neighborhood access
M	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
H	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
L	Backup generation facilities
H	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
H	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
H	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment
L	Fire spotter program/red flag program
L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
	Public education program
M	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
H	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
N/A	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters

M	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
H	Fuel modification/removal
H/A	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
N/A	Increase County Vector Control capacities
	General public drought awareness
L	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
M	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
H	Communications of pipeline maps (based on need to know)
M	Improved notification plan on runaway trains
H	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
H	Cooling stations - MOUs in place
M	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
N	Establish agriculture security standards (focus on water supply)
N/A	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
	Public education
M	◊ Bi-lingual signs
M	◊ Blackout information
L	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Palm Springs	
Contact:	Blake Goetz, Fire Chief
Phone:	(760) 323-8182

MITIGATION STRATEGY INFORMATION

Proposal Name:

Construct an all weather roadway on N. Indian Canyon Way between Tramview Road and Interstate 10

Proposal Location:

Palm Springs City (northern section)

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
X	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

1993 $550,000, 1996 $400,000 Indian Canyon was washed away on both occasions at the Whitewater River Channel. This site has also required debris clearance projects on many other occasions when the road is closed due to water, sand and debris (most winter storms).

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

Indian Canyon Road needs to be elevated and culverts placed underneath the road to allow water, sand and mud to flow under the road, not over it, or eroding the roadbed rendering it unsafe.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency: City of Palm Springs

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: PALM SPRINGS		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES X NO ____**	
Current Population in Jurisdiction or Served	**44,500**	Projected Population in Jurisdiction or Served - in 2010	**50,000**
Current Sq Miles in Jurisdiction or Served	**101**	Projected Sq Miles in Jurisdiction or Served - in 2010	**101**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**YES**	If yes, please list ordinance or regulation number. **2.20 "DISASTER ORDINANCE"**	
What is the number one land issue your agency will face in the next five years	**Earthquake/ Population Growth**		
Approximate Number of Homes/Apts/etc.	**28,228**	Projected Number of Homes/Apts/etc.- in 2010	**35,073**
Approximate Total Residential Value	**5 Billion**	Projected Residential Total Value - in 2010	**7 Billion**
Approximate Number of Commercial Businesses	**2,500**	Projected Number of Commercial Businesses - in 2010	**2,900**
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	**5% in A Zone $250,000,000**	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	**2% $140,000,000**
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	**Alquist/Priolo Zone 0%**	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	**≤1% $70,000,000**
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	**0% Zone 5% Urban Interface $250,000,000**	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	**0% 7% Urban Interface $490,000,000**
Approximate Percentage of Commercial Businesses in flood hazard zones	**≤2%**	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	**≤1%**
Approximate Percentage of Commercial Businesses in earthquake hazard zones	**≤1%**	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	**≤1%**
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	**0%**	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	**0%**
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**0**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**0**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**0**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**Yes**	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			**Yes**

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Palm Springs**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Chief Blake Goetz**		**Address:** **300 N. El Cielo Road** **Palm Springs, Ca 92262**
Title: **Fire Chief**		
Agency: **City of Palm Springs**		
Phone Number: **760-323-8185**		**E-Mail: Blakeg@ci.palm-springs.ca.us**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**		**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND** Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES	Part II, Palm Springs Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Palm Springs Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Palm Springs Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Palm Springs Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Landslides Pages 77 – 80 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
		102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Civil unrest Pages 129 – 131 Jails and prisons incidents Pages 132 – 134 Terrorism Pages 135 – 139 Part II, Palm Springs Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Palm Springs Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Palm Springs Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Palm Springs Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Perris

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		PERRIS		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Emergency Services Coordinator		
First Name:	Walt	Last Name:	Carter	
Agency Address:	Street:	101 N. D St.		
	City:	Perris		
	State:	CA		
	Zip:	92572		
Contact Phone	943-6603		FAX	
E-mail	wcarter@perris-ca.org			

Population Served	38,200
Square Miles Served	35

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**YES**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**YES**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
PERRIS	Aqueduct	Perris Aqueduct	Yes	No
PERRIS	Dam	Perris Lake Dam	Yes	No
PERRIS	Fault	San Jacinto Fault	No	Yes
PERRIS	Flood Channel	Perris Flood Control Channel	Yes	No
PERRIS	Flood Channel	Romoland Channel	Yes	No
PERRIS	Flood Channel	Sunset Channel	Yes	No
PERRIS	Hazmat Storage Location	EMWD	Yes	No
PERRIS	Lake	Lake Perris Lake	Yes	No
PERRIS	Railroad Track	Santa Fe Burlington Northern	Yes	Yes
PERRIS	Reservoir	Lake Perris	Yes	No
PERRIS	River	San Jacinto River	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Perris

Scenario: M6.9 on Northern San Jacinto Fault
Epicenter Near Eastern Moreno Valley

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$31,808.27
Non-Structural Damage	$129,044.78
Building Damage	$160,853.05
Contents Damage	$38,204.29
Inventory Loss	$962.30
Relocation Cost	$715.91
Income Loss	$2,756.15
Rental Income Loss	$7,395.39
Wage Loss	$4,127.03
Total Loss	$215,014.11

Commercial Casualties for Daytime Event	
Medical Aid	7
Hospital Treatment	5
Life-Threatening Severity	1
Death	3

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Perris

Scenario: M6.9 on Northern San Jacinto Fault
Epicenter Near Eastern Moreno Valley

Educational Casualties for Daytime Event	
Medical Aid	6
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	7
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	30
Hospital Treatment	6
Life-Threatening Severity	0
Death	1

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Perris

Scenario: M6.9 on Northern San Jacinto Fault
Epicenter Near Eastern Moreno Valley

Single Family Casualties for Daytime Event	
Medical Aid	11
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	61
Hospital Treatment	17
Life-Threatening Severity	3
Death	5

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Perris

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$11,865.51
Non-Structural Damage	$48,409.06
Building Damage	$60,274.58
Contents Damage	$15,254.29
Inventory Loss	$429.35
Relocation Cost	$283.74
Income Loss	$1,289.97
Rental Income Loss	$2,680.50
Wage Loss	$1,930.12
Total Loss	$82,142.53

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	1
Life-Threatening Severity	0
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Perris

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Educational Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	12
Hospital Treatment	2
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Perris

Scenario: M6.9 on Elsinore Fault
Epicenter Near Lake Elsinore

Single Family Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	20
Hospital Treatment	4
Life-Threatening Severity	1
Death	1

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Walter Carter AGENCY: City of Perris DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**3**	**3**
WILDLAND FIRE	3	4	**3**	**3**	**1**
FLOOD	3	3	**3**	**3**	**2**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**2**	**3**	**10**
LANDSLIDES	2	3	**1**	**1**	**8**
INSECT INFESTATION	3	4	**3**	**3**	**9**
EXTREME SUMMER/WINTER WEATHER	2	4	**3**	**3**	**11**
SEVERE WIND EVENT	3	3	**2**	**3**	**12**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**4**	**3**	**13**
TERRORISM	4	2	**4**	**2**	**14**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**3**	**7**
AQUEDUCT	2	3	**0**	**0**	**18**
TRANSPORTATION	2	4	**4**	**3**	**6**
BLACKOUTS	3	4	**4**	**3**	**5**
HAZMAT ACCIDENTS	3	3	**3**	**3**	**4**
NUCLEAR ACCIDENT	4	2	**4**	**2**	**17**
TERRORISM	4	2	**3**	**2**	**16**
CIVIL UNREST	2	2	**2**	**2**	**15**
JAIL/PRISON EVENT	1	2	**0**	**0**	**19**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
M	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
M	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)

M	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
M	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
	Harden repeater sites
N/A	Continue existing interoperability project
	Strengthen/harden
	Relocate
	Redundancy
	Mobile repeaters

FLOODS

M	Update development policies for flood plains
M	Public education on locations of flood plains
M	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
M	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
H	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction

L	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
M	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
M	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
M	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
M	Traffic light protection
	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
H	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment

M	Fire spotter program/red flag program
	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
M	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
L	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
H	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
M	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
	Clear out abandoned vehicles from oases
H	Code enforcement
M	Codes prohibiting fireworks
M	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
L	Increase County Vector Control capacities
M	General public drought awareness
	◊ Lawn watering rotation
L	Develop County drought plan
M	Mitigation of landslide-prone areas
M	Develop winter storm sheltering plan
	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization

L	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
	Create a SONGS regional planning group
	◊ Include dirty bomb planning
	Cooling stations - MOUs in place
M	Fire Ant eradication program
	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
M	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
M	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
	◊ Bi-lingual signs
	◊ Blackout information
M	Notification system for rail traffic - container contents
L	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Perris	
Contact:	Walter Carter III
Phone:	951-943-6603

MITIGATION STRATEGY INFORMATION

Proposal Name:

Update City's Building Codes

Proposal Location:

City of Perris

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History — List any previous disaster related events (dates, costs, etc)

The City of Perris is currently using 2001 California State Building Code. This building code is updated yearly, to meet the changing needs of construction in California and address the various hazards know to exist in the State.

The City of Perris has not adopted the most current set of California Building Codes.

Description of Mitigation Goal Narrative: Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

There have been significant changes in the California Building Code over the last several years. The California Building Codes are generally used as the minimum standard for building codes in a city or county. The California Building Code has specific building standards to help mitigate the damage commercial and residential property from earthquakes, wildland fires, floods, etc. These codes are also used as requirements for any upgrades or additions to buildings.

This mitigation strategy would be to review the current City Building Codes and determine the necessary updates. In addition to this review and updating of standards, the City may determine that there is a need to increase specific codes to heighten the mitigation level for specific standards.

An example of this would be the addition of a 100' clear zone requirement for property in a rural area to reduce the impact of a wildland fire.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Perris	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES XXX NO _____**		
Current Population in Jurisdiction or Served	**38,000**	Projected Population in Jurisdiction or Served - in 2010	**75,000**
Current Sq Miles in Jurisdiction or Served	**33**	Projected Sq Miles in Jurisdiction or Served - in 2010	**33**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**YES**	If yes, please list ordinance or regulation number. City Ordinance 892	
What is the number one land issue your agency will face in the next five years	Multi-species Habitat Conservation Program		
Approximate Number of Homes/Apts/etc.	**15,500**	Projected Number of Homes/Apts/etc.- in 2010	**23,000**
Approximate Total Residential Value	**$372 Billion**	Projected Residential Total Value - in 2010	**$805 Billion**
Approximate Number of Commercial Businesses	**UNK**	Projected Number of Commercial Businesses - in 2010	**UNK**
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	**80% $297,000,000,000**	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	**95% $764,750,000,000**
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	**100% $372,000,000,000**	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	**100% $805,000,000,000**
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	**5% $18,600,000,000**	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	**5% %40,250,000,000**
Approximate Percentage of Commercial Businesses in flood hazard zones	**75%**	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	**75%**
Approximate Percentage of Commercial Businesses in earthquake hazard zones	**100%**	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	**100%**
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	**0%**	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	**0%**
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**17**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**23**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**30**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**40**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**0**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**YES**	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? YES			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Perris**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Walt Carter**	**Address:** **101 N. D St.** **Perris, Ca.**	
Title: **Emergency Program Manager**		
Agency: **City of Perris**		
Phone Number: (951) 943-6603	**E-Mail: wcarter@perris-ca.org**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 3-7**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, City of Perris Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, City of Perris Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II City of Perris Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, City of Perris Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Insect Infestation Pages 81 – 84 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, City of Perris Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, City of Perris Section	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II City of Perris Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, City of Perris Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Rancho Mirage

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		RANCHO MIRAGE		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	ESC		
First Name:	Richard	Last Name:	Signs	
Agency Address:	Street:	69825 Highway 111		
	City:	Rancho Mirage		
	State:	Ca		
	Zip:	92270		
Contact Phone	760-324-4511		FAX	
E-mail	Richards@ci.rancho-mirage.ca.us			

Population Served	14,950	Square Miles Served	25

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**NO**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**NO**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**YES**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdictio	Hazard Type	Hazard Name	In Jurisdiction	Adjacent to Jurisdiction
RANCHO MIRAGE	Fault	San Andreas	No	Yes
RANCHO MIRAGE	Flood Channel	White Water Channel	Yes	No
RANCHO MIRAGE	Pipeline	Fuel Pipeline at I-10 Freeway	No	Yes
RANCHO MIRAGE	Railroad Track	at I-10	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Rancho Mirage

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$44,376.03
Non-Structural Damage	$177,369.46
Building Damage	$221,745.49
Contents Damage	$56,751.82
Inventory Loss	$919.18
Relocation Cost	$1,055.41
Income Loss	$16,633.18
Rental Income Loss	$13,949.90
Wage Loss	$17,164.64
Total Loss	$328,219.61

Commercial Casualties for Daytime Event	
Medical Aid	81
Hospital Treatment	24
Life-Threatening Severity	4
Death	8

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Rancho Mirage

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Educational Casualties for Daytime Event	
Medical Aid	6
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Other Residential Casualties for Daytime Event	
Medical Aid	16
Hospital Treatment	3
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Rancho Mirage

Scenario: M7.1 on San Andreas Fault
Epicenter Northeast of Cathedral City

Single Family Casualties for Daytime Event	
Medical Aid	5
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	115
Hospital Treatment	31
Life-Threatening Severity	5
Death	10

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Richard A. Signs AGENCY: City of Rancho Mirage DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**4**	**1**
WILDLAND FIRE	3	4	**2**	**1**	**14**
FLOOD	3	3	**3**	**3**	**4**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**3**	**2**
LANDSLIDES	2	3	**2**	**1**	**15**
INSECT INFESTATION	3	4	**2**	**1**	**16**
EXTREME SUMMER/WINTER WEATHER	2	4	**3**	**3**	**5**
SEVERE WIND EVENT	3	3	**3**	**3**	**6**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**0**	**1**	**17**
TERRORISM	4	2	**4**	**1**	**7**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**1**	**9**
AQUEDUCT	2	3	**0**	**1**	**8**
TRANSPORTATION	2	4	**2**	**2**	**10**
BLACKOUTS	3	4	**3**	**3**	**3**
HAZMAT ACCIDENTS	3	3	**3**	**2**	**11**
NUCLEAR ACCIDENT	4	2	**3**	**1**	**12**
TERRORISM	4	2	**2**	**2**	**13**
CIVIL UNREST	2	2	**2**	**2**	**18**
JAIL/PRISON EVENT	1	2	**1**	**1**	**19**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
H	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
H	◊ Hotel/motel literature
H	◊ Local radio stations for education
H	◊ Public education via utilities
H	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
N/A	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
M	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
L	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)

L	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
H	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
M	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
L	◊ Alerting information
H	◊ Volunteer information
H	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
H	Strengthen/harden
H	Relocate
H	Redundancy
N/A	Mobile repeaters

FLOODS

L	Update development policies for flood plains
H	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
H	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
H	Perform GIS mapping of flood channels, etc.
H	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
H	Require digital floor plans on new non-residential construction

N/A	Upgrade dirt embankments to concrete
L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
H	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
L	◊ Re-examine historical flooding data for potential street re-design
H	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
H	◊ Enhanced public information
H	◊ Road closure compliance
L	◊ Shelter locations
H	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
H	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
M	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
H	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
L	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment

L	Fire spotter program/red flag program
L	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
L	◊ Building protection
L	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
M	Code enforcement
L	Codes prohibiting fireworks
M	Fuel modification/removal
H	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

H	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
L	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
N/A	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization

N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
L	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
L	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
H	Public education
L	◊ Bi-lingual signs
H	◊ Blackout information
N/A	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	City of Rancho Mirage
Contact:	Bruce Harry - Public Works Director
Phone:	760-324-4511

MITIGATION STRATEGY INFORMATION

Proposal Name:

Frank Sinatra Crossing Gates

Proposal Location:

Frank Sinatra Dr @ White Water Wash

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History — List any previous disaster related events (dates, costs, etc)

Costs incurred - 1993 $550,000, 1996 $400,000 Indian Canyon was washed away on both occasions at the Whitewater River Channel. This site has also required debris clearance projects on many other occasions when the road is closed due to water, sand and debris (most winter storms). There is an extreme "loss of life" concern with this area because of the high level and speed of water flowing in the wash and the number of motorists who attempt to drive through the rushing water.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

The Mitigation Goal is directed at the "loss of life" concern. The plan will be to install large crossing arms on both sides of the wash. The arms would be on both sides of the roadway to reduce the ability of a motorist going around the crossing arm and attempting to cross the rushing water. There will be warning signals on the street for approaching motorists as well as warning lights on the cross arms themselves (similar to railroad crossing arms. The arms would be capable of being locked in either the open or closed positions.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency: City of Rancho Mirage

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Rancho Mirage		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES XX NO**	
Current Population in Jurisdiction or Served	15697	Projected Population in Jurisdiction or Served - in 2010	19,764
Current Sq Miles in Jurisdiction or Served	24.68	Projected Sq Miles in Jurisdiction or Served - in 2010	26.71
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Mun. Code 100 & 72	
What is the number one land issue your agency will face in the next five years	Flooding or Earthquake		
Approximate Number of Homes/Apts/etc.	12,306	Projected Number of Homes/Apts/etc.- in 2010	16,958
Approximate Total Residential Value	574,000	Projected Residential Total Value - in 2010	825,475
Approximate Number of Commercial Businesses	475	Projected Number of Commercial Businesses - in 2010	600
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	0 %	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	0 %
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	0 %	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	0 %
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	0 %	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	0 %
Approximate Percentage of Commercial Businesses in flood hazard zones	0 %	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	0 %
Approximate Percentage of Commercial Businesses in earthquake hazard zones	0 %	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	0 %
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0 %	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0 %
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	None	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	None
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	None	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	None
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	None	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	None
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Rancho Mirage**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Dick Signs**	**Address:** **68-825 Highway 111** **Rancho Mirage, Ca 92270**	
Title: **Emergency Services Coordinator**		
Agency: **Rancho Mirage City Hall**		
Phone Number: **760-324-4511**	**E-Mail: Richards@ci.rancho-mirage.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Rancho Mirage Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Rancho Mirage Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Rancho Mirage Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Rancho Mirage Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Terrorism Pages 135 – 139 Part II, Rancho Mirage Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Rancho Mirage Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Rancho Mirage Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Rancho Mirage Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Riverside

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		CITY OF RIVERSIDE		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Emergency Services Coordinator		
First Name:	Carmen	Last Name:	Nieves	
Agency Address:	Street:	4102 Orange Street		
	City:	Riverside		
	State:	CA		
	Zip:	92501		
Contact Phone	951-826-550		FAX	951-826-5476
E-mail	cnieves@riversideca.gov			

Population Served	274,100	Square Miles Served	80

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**YES**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**YES**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**NO**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**YES**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**YES**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**YES**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**NO**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**YES**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**YES**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**YES**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**YES**
NON REINFORCED BUILDINGS	**YES**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
RIVERSIDE	Dam	Mockingbird Canyon Dam	Yes	No
RIVERSIDE	Fault	San Jacinto	No	Yes
RIVERSIDE	Flood Channel	Chicago/Central Basin	Yes	No
RIVERSIDE	Flood Channel	Gage Canal	Yes	No
RIVERSIDE	Lake	Lake Matthews	Yes	No
RIVERSIDE	Pipeline	santa ana river pipeline	Yes	No
RIVERSIDE	Railroad Track	Burlington Northern Santa Fe	Yes	No
RIVERSIDE	Railroad Track	Union Pacific	Yes	No
RIVERSIDE	Reservoir	Linden/Evans	Yes	No
RIVERSIDE	Reservoir	Tilden	Yes	No
RIVERSIDE	River	Santa Ana River	Yes	No

Dams Summary			
Dam Name	ALESSANDRO	BOX SPRINGS	HARRISON STREET
River	ALESSANDRO CR	BOX SPRINGS CR	HARRISON CREEK
Nearest City	RIVERSIDE	RIVERSIDE	RIVERSIDE
Height (feet)	66	49	50
Storage (acre-feet)	530	630	350
Year Built	1956	1960	1954
Drainage Area (Sq miles)	4.63	4	2.03
Hazard Type	High	High	High

Dams Summary			
Dam Name	MOCKINGBIRD CAN	HENRY J MILLS RES	PRENDA
River	MOCKINGBIRD CAN	OFFSTREAM	PRENDA CREEK
Nearest City	RIVERSIDE	RIVERSIDE	RIVERSIDE
Height (feet)	74	23	44
Storage (acre-feet)		103	291
Year Built	1914	1979	1954
Drainage Area (Sq miles)	13.13	0	1
Hazard Type	High	Low	High

Dams Summary			
Dam Name	FAIRMOUNT PARK	SYCAMORE	WOODCREST
River	SANTA ANA RV	SYCAMORE CANYON	WOODCREST CREEK
Nearest City	RIVERSIDE	RIVERSIDE	RIVERSIDE
Height (feet)	12	63	44
Storage (acre-feet)	330		420
Year Built	1923	1956	1954
Drainage Area (Sq miles)	22	10.7	5.32
Hazard Type	Significant	High	High

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Riverside

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$42,821.27
Non-Structural Damage	$207,053.75
Building Damage	$249,875.06
Contents Damage	$73,643.86
Inventory Loss	$1,681.72
Relocation Cost	$1,290.14
Income Loss	$9,775.62
Rental Income Loss	$14,145.95
Wage Loss	$13,063.17
Total Loss	$363,475.44

Commercial Casualties for Daytime Event	
Medical Aid	19
Hospital Treatment	5
Life-Threatening Severity	1
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Riverside

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Educational Casualties for Daytime Event	
Medical Aid	15
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	12
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	8
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Riverside

Scenario: M6.7 on Elsinore Fault
Epicenter in/near Southwest of Corona

Single Family Casualties for Daytime Event	
Medical Aid	9
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	63
Hospital Treatment	11
Life-Threatening Severity	1
Death	3

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Carmen Nieves AGENCY: Riverside DATE: 07-09-04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	2	3	3
FLOOD	3	3	2	3	2
OTHER NATURAL HAZARDS					
DROUGHT	3	3	1	2	4
LANDSLIDES	2	3	0	0	18
INSECT INFESTATION	3	4	2	3	17
EXTREME SUMMER/WINTER WEATHER	2	4	2	4	8
SEVERE WIND EVENT	3	3	2	3	15
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	1	2	14
TERRORISM	4	2	4	2	13
OTHER MAN-MADE					
PIPELINE	2	3	2	3	12
AQUEDUCT	2	3	0	0	19
TRANSPORTATION	2	4	2	3	5
BLACKOUTS	3	4	2	4	7
HAZMAT ACCIDENTS	3	3	3	3	6
NUCLEAR ACCIDENT	4	2	4	2	16
TERRORISM	4	2	4	2	10
CIVIL UNREST	2	2	1	2	11
JAIL/PRISON EVENT	1	2	1	2	18
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
H	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
H	◊ Hotel/motel literature
H	◊ Local radio stations for education
H	◊ Public education via utilities
H	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
M	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
M	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
NA	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
M	◊ Bridges/dams/pipelines
M	◊ Government buildings/schools
H	◊ Mobile home parks
H	Develop educational materials on structural reinforcement and home inspections
	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)

NA	Pre - identify empty commercial space for seismic re-location
NA	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
H	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
M	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
M	◊ Links to jurisdictions
M	◊ Alerting information
M	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
H	Strengthen/harden
H	Relocate
H	Redundancy
H	Mobile repeaters

FLOODS

M	Update development policies for flood plains
M	Public education on locations of flood plains
M	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
H	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
H	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
L	Maintenance of storm sewers/flood channels
H	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction

L	Upgrade dirt embankments to concrete
L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
H	Increase sandbag distribution capacities
	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
	Warning systems - ensure accurate information provided
M	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
M	◊ Enhanced public information
H	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
	Look at County requirements for neighborhood access
M	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
H	Hardening water towers
H	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
M	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
M	Traffic light protection
M	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
H	Backup generation facilities
H	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
H	◊ Networking of agencies for weed abatement
NA	Develop strategic plan for forest management
H	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
H	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment

H	Fire spotter program/red flag program
H	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
	Public education program
H	◊ Weather reporting/alerting
H	◊ Building protection
H	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
H	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
H	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
H	"Red Tag" homes in advance of event
H	Provide fire-resistant gel to homeowners
H	Involve insurance agencies in mitigation programs
M	Clear out abandoned vehicles from oases
H	Code enforcement
M	Codes prohibiting fireworks
M	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
M	General public drought awareness
M	◊ Lawn watering rotation
M	Develop County drought plan
NA	Mitigation of landslide-prone areas
NA	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
NA	Rotational crop planning/soil stabilization

NA	Enhance agricultural checkpoint enforcement
M	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
M	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
H	◊ Staffing for terrorism mitigation
H	Create a SONGS regional planning group
H	◊ Include dirty bomb planning
M	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
M	Public education on low water landscaping
NA	Salton Sea desalinization
M	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
H	Vulnerability assessment on fiber-optic cable
M	Upgrade valves on California aqueduct
	Public education
M	◊ Bi-lingual signs
M	◊ Blackout information
M	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
NA	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Riverside - Public Utilities Department	
Contact:	Stephen E. Lafon, Electric Operations Manager
Phone:	(951) 351-6344

MITIGATION STRATEGY INFORMATION

Proposal Name:

Freeman Substation - Flood Mitigation

Proposal Location:

Freeman Substation 3301 Gibson Street, Riverside, CA 92504

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
X	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

None

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

Freeman Substation is located in the inundation area for a failure of the Mockingbird Canyon Dam. In the event of a dam failure, the substation would be flooded causing extensive damage to electrical equipment and interrupting electric service to essential emergency services such as Parkview Hospital, California Higway Patrol, City of Riverside Corporation Yard, Lincoln Street Police Station and the Utilities Operation Center. Mitigation would require the construction of drainage features such as a levee to divert the inundation flow around the Proposal site, or relocation of the substation to a safer location.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

X	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Pending	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: City of Riverside		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES __X__ NO_____**	
Current Population in Jurisdiction or Served	285,000	Projected Population in Jurisdiction or Served - in 2010	359,000
Current Sq Miles in Jurisdiction or Served	81 sq. miles	Projected Sq Miles in Jurisdiction or Served - in 2010	90 sq. miles
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Chapter 9.20 of the Riverside Municipal Code	
What is the number one land issue your agency will face in the next five years	Commercial & residential development		
Approximate Number of Homes/Apts/etc.	90,511	Projected Number of Homes/Apts/etc.- in 2010	96,307
Approximate Total Residential Value	$310,000	Projected Residential Total Value - in 2010	$347,200
Approximate Number of Commercial Businesses	19,146	Projected Number of Commercial Businesses - in 2010	22,018
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	35% $108,500	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	35% $121,520
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $310,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $347,200
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	10% $31,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	10% $34,720
Approximate Percentage of Commercial Businesses in flood hazard zones	35%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	35%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	10%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	10%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	40	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	46
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	125	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	131
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	10	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	10
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Riverside**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County Operational Area**	**Date of Completion:** **September 10, 2004**
Local Point of Contact: **Carmen Nieves**	**Address:** **4102 Orange Street Riverside, Ca 92501**	
Title: **Emergency Services Coordinator**		
Agency: **Riverside Fire Department**		
Phone Number: **951-826-5550**	**E-Mail: cnieves@riversideca.gov**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.

S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	**N**	**S**
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part 1, Page 5**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			***"Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes, Part 2 Riverside Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is	PART I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Landslides Pgs 77 – 80 Insect Infestation Pgs 81 – 84 Dam failure Pgs 85 – 93		

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Hazmat incidents Pgs 94 – 101 Highway emergencies Pgs 102 – 110 Rail line emergencies Pgs 102 – 110 Airline / airport emergencies Pgs 102 – 110 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pgs 119 – 124 Nuclear incidents Pgs 125 – 128 Civil unrest Pgs 129 – 131 Jails and prisons incidents Pgs 132 – 134 Terrorism Pgs 135 – 139		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part 2, Riverside City Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Yes, page 19=139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	No	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Yes Part 2,	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
		Riverside City Section		*plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Yes Part 2, Riverside City Section - Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part 2, Riverside City Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Yes, Riverside Section, Supplemental questionnaire		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	No	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.			

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of San Jacinto

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		SAN JACINTO		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:			
First Name:	Barry	Last Name:	Mulcock	
Agency Address:	Street:	270 Bissel Pl.		
	City:	San Jacinto		
	State:	CA		
	Zip:	92583		
Contact Phone	(951) 487-7386		FAX	
E-mail	bmulcock@sanjacintoca.us			

Population Served	26,050
Square Miles Served	27

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1995
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

Where is your EOC located?

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	YES
POULTRY INDUSTRY	YES
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	NO
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	NO
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	NO
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
San Jacinto	Dam	Diamond Valley Lake	No	Yes
San Jacinto	Fault	San Jacinto Fault Zone	Yes	No
San Jacinto	Flood Channel	Unknown	Yes	No
San Jacinto	Lake	Diamond Valley Lake	No	Yes
San Jacinto	Railroad Track	Unknown	Yes	No
San Jacinto	River	San Jacinto River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of San Jacinto

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$31,364.67
Non-Structural Damage	$125,091.45
Building Damage	$156,456.12
Contents Damage	$35,435.73
Inventory Loss	$831.14
Relocation Cost	$660.95
Income Loss	$2,805.93
Rental Income Loss	$7,712.86
Wage Loss	$3,933.75
Total Loss	$207,836.46

Commercial Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	1
Death	1

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of San Jacinto

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Educational Casualties for Daytime Event	
Medical Aid	11
Hospital Treatment	3
Life-Threatening Severity	0
Death	1

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	9
Hospital Treatment	2
Life-Threatening Severity	0
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	34
Hospital Treatment	7
Life-Threatening Severity	1
Death	1

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of San Jacinto

Scenario: M7.1 on San Jacinto Fault
Epicenter Between San Jacinto & Beaumont

Single Family Casualties for Daytime Event	
Medical Aid	8
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	62
Hospital Treatment	14
Life-Threatening Severity	2
Death	4

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Barry Mulcock AGENCY: San Jacinto DATE: 9/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	2	2	4
FLOOD	3	3	2	2	3
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	2	10
LANDSLIDES	2	3	2	1	17
INSECT INFESTATION	3	4	2	2	15
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	9
SEVERE WIND EVENT	3	3	3	3	2
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	2	12
TERRORISM	4	2	3	2	16
OTHER MAN-MADE					
PIPELINE	2	3	2	1	11
AQUEDUCT	2	3	3	2	5
TRANSPORTATION	2	4	2	2	13
BLACKOUTS	3	4	3	3	7
HAZMAT ACCIDENTS	3	3	3	3	6
NUCLEAR ACCIDENT	4	2	3	2	14
TERRORISM	4	2	3	2	8
CIVIL UNREST	2	2	2	1	18
JAIL/PRISON EVENT	1	2	1	1	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
L	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
M	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
L	Improve the Emergency Alert System (EAS)
L	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
L	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
M	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
L	◊ Mobile home parks
H	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals

L	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
M	◊ Links to jurisdictions
M	◊ Alerting information
L	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
L	Harden repeater sites
M	Continue existing interoperability project
M	Strengthen/harden
M	Relocate
M	Redundancy
L	Mobile repeaters

FLOODS

M	Update development policies for flood plains
M	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
M	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
M	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
L	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
M	◊ Road closure compliance
L	◊ Shelter locations
L	◊ Pre-event communications
M	Look at County requirements for neighborhood access
M	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
M	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
L	◊ Building protection
L	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
M	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
L	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
H	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
M	Increase County Vector Control capacities
M	General public drought awareness
L	◊ Lawn watering rotation
L	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
M	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
L	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
L	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of San Jacinto	
Contact:	Barry Mulcock
Phone:	(951) 487-7386 or (951) 232-7247

MITIGATION STRATEGY INFORMATION

Proposal Name:

San Jacinto River Levee Mitigation Plan

Proposal Location:

San Jacinto River Levee – West of Sanderson Avenue to Lake Park Bridge

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
x	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	1980 floods with an estimated property damage of $6 Million in today's dollars. Later in 1993, a minor five-year flood occurred again causing a levee rupture in several locations at an estimated damage of $625,000.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The goal of the San Jacinto River Levee project will be to limit the flood risk to populated areas, protecting residential, commercial, and agricultural uses in the general vicinity of the flood plain. The estimated cost of the levee expansion is $8,000,000.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No	x	Responsible Agency: Joint project with Riverside County Flood Control and Water Conservation District (RCFC&WCD) and City of San Jacinto

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

x	Unfunded proposal - funds are not available for the proposal at this time. Partially funded by RCFC&WCD
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? Yes (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: San Jacinto	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES __X__ NO _____**		
Current Population in Jurisdiction or Served	**26,041**	Projected Population in Jurisdiction or Served - in 2010	**90,000**
Current Sq Miles in Jurisdiction or Served	**26.81**	Projected Sq Miles in Jurisdiction or Served - in 2010	**32 Sq. Miles**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**Yes**	If yes, please list ordinance or regulation number. 1029 – Fire Severity Zones; 1071 – Administration of Disaster Operations and Relief	
What is the number one land issue your agency will face in the next five years	Highway 79 Realignment		
Approximate Number of Homes/Apts/etc.	**8151**	Projected Number of Homes/Apts/etc.- in 2010	**35,000**
Approximate Total Residential Value	**831,599,855**	Projected Residential Total Value - in 2010	**8,750,000,000**
Approximate Number of Commercial Businesses	**900**	Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	**20% $166,319,971**	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	**30% $2,625,000,000**
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	**5% $41,579,992**	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	**8% $700,000,000**
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	**0%**	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	**2% $175,000,000**
Approximate Percentage of Commercial Businesses in flood hazard zones	**2%**	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	**3%**
Approximate Percentage of Commercial Businesses in earthquake hazard zones	**1%**	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	**1%**
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	**0%**	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	**0%**
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**0%**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**0%**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**0%**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**0%**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0%**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**0%**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**Yes**	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? Yes			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: City of San Jacinto	Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES	Date of Completion: September 8, 2004
Local Point of Contact: Barry Mulcock	Address: 270 Bissel Pl. San Jacinto Ca. 92582	
Title: City of San Jacinto Public Works - Street Division Supervisor		
Agency: City of San Jacinto		
Phone Number: (951) 487-7386	E-Mail: bmulcock@sanjacintoca.us	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, SAN JACINTO Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, SAN JACINTO Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	SAN JACINTO Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, SAN JACINTO Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Nuclear incidents Pgs 125 – 128 Part II, San Jacinto Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** If yes, where in MJP: Yes, Part II, SAN JACINTO Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & SAN JACINTO Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, SAN JACINTO Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

City of Temecula

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Temecula		
Type Agency/Jurisdiction:		City		
Contact Person:	Title:	Assistant to the City Manager		
First Name:	Grant	Last Name:	Yates	
Agency Address:	Street:	43200 Business Park Dr		
	City:	Temecula		
	State:	CA		
	Zip:	92589		
Contact Phone	951 506-5100		FAX	951 694-6499
E-mail	grant.yates@cityoftemecula.org			

Population Served	80,000
Square Miles Served	27

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1998
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	YES
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	YES
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	NO
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**YES**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**YES**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	YES
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Temecula	Dam	Diamond Valley Reservoir	No	Yes
Temecula	Fault	Earthquake Fault	Yes	Yes
Temecula	Hazmat Manufacturing Facility	International Rectifier	Yes	No

Dams Summary

Dam Name	SKINNER CLEARWELL	VAIL	ROBERT A SKINNER
River	OFFSTREAM	TEMECULA CREEK	TUCALOTA CREEK
Nearest City	TEMECULA	TEMECULA	TEMECULA
Height (feet)	44	152	109
Storage (acre-feet)	410		
Year Built	1991	1949	1973
Drainage Area (Sq miles)	0	306	51
Hazard Type	Significant	High	High

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Temecula

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Direct Economic Loss Estimates (thous. $)	
Structural Damage	$24,477.20
Non-Structural Damage	$105,263.77
Building Damage	$129,740.93
Contents Damage	$41,253.19
Inventory Loss	$1,741.54
Relocation Cost	$605.92
Income Loss	$6,714.01
Rental Income Loss	$7,577.22
Wage Loss	$7,949.31
Total Loss	$195,582.10

Commercial Casualties for Daytime Event	
Medical Aid	19
Hospital Treatment	5
Life-Threatening Severity	1
Death	2

Commuting Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Temecula

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Educational Casualties for Daytime Event	
Medical Aid	7
Hospital Treatment	1
Life-Threatening Severity	0
Death	0

Hotels Casualties for Daytime Event	
Medical Aid	0
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Industrial Casualties for Daytime Event	
Medical Aid	18
Hospital Treatment	5
Life-Threatening Severity	1
Death	1

Other Residential Casualties for Daytime Event	
Medical Aid	2
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

SUMMARIZED HAZUS RESULTS

Jurisdiction: City of Temecula

Scenario: M6.7 on Southern Elsinore Fault
Epicenter on Border of Murrieta/Temecula

Single Family Casualties for Daytime Event	
Medical Aid	3
Hospital Treatment	0
Life-Threatening Severity	0
Death	0

Total Casualties for Daytime Event	
Medical Aid	49
Hospital Treatment	12
Life-Threatening Severity	2
Death	3

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Grant Yates AGENCY: Temecula DATE: June 11, 2004

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	2
WILDLAND FIRE	3	4	3	3	5
FLOOD	3	3	4	3	3
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	2	11
LANDSLIDES	2	3	2	2	14
INSECT INFESTATION	3	4	2	2	17
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	8
SEVERE WIND EVENT	3	3	3	2	9
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	0	18
TERRORISM	4	2	0	0	19
OTHER MAN-MADE					
PIPELINE	2	3	2	2	12
AQUEDUCT	2	3	2	2	13
TRANSPORTATION	2	4	3	4	1
BLACKOUTS	3	4	3	3	7
HAZMAT ACCIDENTS	3	3	3	3	6
NUCLEAR ACCIDENT	4	2	3	2	10
TERRORISM	4	2	4	2	4
CIVIL UNREST	2	2	2	2	15
JAIL/PRISON EVENT	1	2	1	1	16
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
M	◊ Government employees
M	◊ Businesses
M	◊ Hotel/motel literature
M	◊ Local radio stations for education
H	◊ Public education via utilities
L	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
M	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
H	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
H	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
M	◊ Government buildings/schools
M	◊ Mobile home parks
H	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location

L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
H	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
M	Backup water supplies for hospitals
H	Evaluate pipeline seismic resiliency
M	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
H	Website with mitigation/contractor/retrofitting information
H	◊ Links to jurisdictions
H	◊ Alerting information
H	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
H	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
H	Strengthen/harden
L	Relocate
H	Redundancy
M	Mobile repeaters

FLOODS

H	Update development policies for flood plains
H	Public education on locations of flood plains
H	Develop multi-jurisdictional working group on floodplain management
H	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
M	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
H	Perform GIS mapping of flood channels, etc.
M	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
H	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete

M	Conduct countywide needs study on drainage capabilities
M	Increase number of pumping stations
M	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
H	◊ Evacuation documentation
H	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
H	◊ Publicize flood plain information (website?)
M	◊ Install warning/water level signage
H	◊ Enhanced public information
M	◊ Road closure compliance
M	◊ Shelter locations
H	◊ Pre-event communications
M	Look at County requirements for neighborhood access
M	◊ Secondary means of ingress/egress
H	Vegetation restoration programs
H	Ensure critical facilities are hardened/backed up
M	Hardening water towers
M	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
M	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
H	Traffic light protection
M	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
H	Develop strategic plan for forest management
H	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
H	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment
M	Fire spotter program/red flag program

M	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
H	Public education program
H	◊ Weather reporting/alerting
H	◊ Building protection
M	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
H	Roofing materials/defensive spacing regulations
H	Community task forces for planning and education
H	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
M	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
M	"Red Tag" homes in advance of event
H	Provide fire-resistant gel to homeowners
M	Involve insurance agencies in mitigation programs
M	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
H	Fuel modification/removal
H	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
M	General public drought awareness
M	◊ Lawn watering rotation
M	Develop County drought plan
M	Mitigation of landslide-prone areas
M	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
M	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement

L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
H	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
M	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
M	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
H	Upgrade valves on California aqueduct
H	Public education
H	◊ Bi-lingual signs
M	◊ Blackout information
M	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
M	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Temecula	
Contact:	Grant Yates
Phone:	(951) 506-5100

MITIGATION STRATEGY INFORMATION

Proposal Name:

Dam innundation plan for Diamond Valley Reservoir

Proposal Location:

Diamond Valley Lake

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
X	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

Diamond Valley Reservior is the largest and newest lake in the County and planning for the possibility of a dam failure is important to the City of Temecula, which lies in the probable areas of concern. Currently the State of California has not reviewed the flood inundation maps from the Metropolitan Water District

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

To our knowledge, there are dam innundation maps for Lake Skinner and Vail Lake, which could also negatively impact the City of Temecula. Planning for the worst case scenario, an innundation map of Diamond Valley could become an invaluable tool for the City of Temecula. Initial maps from MWD and the County GIS Agency have shown that the water flow from Diamond Valley Dam will have a major impact on the City and its surrounding area. The goal of this mitigation project will be to have planning sessions and table top exercises with all of the involved agencies to develop response plans relating to a dam failure. These plans will be updated once the State of California reviews and approves the MWD maps.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No	X	Responsible Agency: Additional partners could include Riverside County, County Flood Control, and the Cities of Hemet and Murrietta.

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? YES (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

JURISDICTION: **City of Temecula**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES X NO**	
Current Population in Jurisdiction or Served	77,500	Projected Population in Jurisdiction or Served - in 2010	100,000
Current Sq Miles in Jurisdiction or Served	28.1	Projected Sq Miles in Jurisdiction or Served - in 2010	30
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	Growth from unincorporated areas		
Approximate Number of Homes/Apts/etc.	25,000	Projected Number of Homes/Apts/etc.- in 2010	35,000
Approximate Total Residential Value	$8.5 Billion	Projected Residential Total Value - in 2010	$15 Billion
Approximate Number of Commercial Businesses	3,000	Projected Number of Commercial Businesses - in 2010	3,500
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	>1% $85,000,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	>1% $150,000,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	>1% $85,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	>1% $150,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	>1% $85,000,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	>1% $150,000,000
Approximate Percentage of Commercial Businesses in flood hazard zones	>1%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	>1%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	20%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	20%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	>1%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	See Above	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	See Above	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	See Above	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **City of Temecula**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Grant Yates**		**Address:** **43200 Business Park Drive** **Temecula, CA 92592**
Title: **Assistant to the City Manager**		
Agency: **City of Temecula**		
Phone Number: **(951) 506-5100**		**E-Mail: grant.yates@cityoftemecula.org**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		

Plan Maintenance Process	**N**	**S**
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	

Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, TEMECULA Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, TEMECULA Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	TEMECULA Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, TEMECULA Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Nuclear incidents Pgs 125 – 128 Part II, Temecula Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** If yes, where in MJP: Yes, Part II, TEMECULA Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & TEMECULA Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, TEMECULA Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Soboba Band of Luiseno Indians

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Soboba Band of Luiseno Indians		
Type Agency/Jurisdiction:		Tribal Organization		
Contact Person:	Title:	Public Safety Office		
First Name:	Edward	Last Name:	Lisle	
Agency Address:	Street:	P.O.Box 817		
	City:	San Jacinto		
	State:	CA		
	Zip:	92581		
Contact Phone	951-654-2883 Ext. 193		FAX	951-665-1353
E-mail	elisle@soboba.com			

Population Served	300 Tribual Residents	Square Miles Served	11

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	1/12/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1/12/2003
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	YES
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	YES
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	NO
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	NO
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	YES
FOREST AREA NEXT TO JURISDICTION	YES
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	YES
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	NO
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**YES**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION

DOES YOUR ORGANIZATION HAVE AN EOC	**YES**
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

OTHER FACILITY INFORMATION

ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	**YES**
COULD BE CONSIDERED A BIO-HAZARD RISK	**YES**

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Soboba Band of Luiseno Indians	Fault	San Jacinto	Yes	No
Soboba Band of Luiseno Indians	Flood Channel	San Jacinto River	Yes	No
Soboba Band of Luiseno Indians	Lake	Hemet Lake/Dam	No	Yes
Soboba Band of Luiseno Indians	River	San Jacinto	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Edward Lisle AGENCY: Soboba Band of Luiseno Indians DATE: 9/2/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	3	3	1
WILDLAND FIRE	3	4	3	3	3
FLOOD	3	3	4	3	2
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	3	17
LANDSLIDES	2	3	2	2	19
INSECT INFESTATION	3	4	2	2	11
EXTREME SUMMER/WINTER WEATHER	2	4	3	3	6
SEVERE WIND EVENT	3	3	3	3	5
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	2	10
TERRORISM	4	2	2	2	16
OTHER MAN-MADE					
PIPELINE	2	3	1	1	13
AQUEDUCT	2	3	1	1	18
TRANSPORTATION	2	4	2	2	7
BLACKOUTS	3	4	3	3	12
HAZMAT ACCIDENTS	3	3	2	2	8
NUCLEAR ACCIDENT	4	2	2	2	9
TERRORISM	4	2	3	3	4
CIVIL UNREST	2	2	1	1	15
JAIL/PRISON EVENT	1	2	1	1	14
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
	Provide training to hospital staffs
	Require earthquake gas shutoffs on remodels/new construction
	Evaluate re-enforcing reservoir concrete bases
	Evaluate EOCs for seismic stability
	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
	◊ Bridges/dams/pipelines

	◊ Government buildings/schools
L	◊ Mobile home parks
	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
	Insurance coverage on public facilities
	Funding for non-structural abatement (Earthquake kits, etc.)
	Pre - identify empty commercial space for seismic re-location
	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
	Backup water supplies for hospitals
	Evaluate pipeline seismic resiliency
	Pre-positioning of temporary response structures
	Fire sprinkler ordinance for all structures
	Evaluate adequacy of reservoir capacity for sprinkler systems
	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
	Evaluate depths of aquifers/wells for adequacy during quakes
	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
	Harden repeater sites
	Continue existing interoperability project
	Strengthen/harden
	Relocate
	Redundancy
	Mobile repeaters

FLOODS

M	Update development policies for flood plains
	Public education on locations of flood plains
	Develop multi-jurisdictional working group on floodplain management
	Develop greenbelt requirements in new developments
	Update weather pattern/flood plain maps
	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
	Install vehicular crossing gates/physical barriers for road closure
	Maintenance of storm sewers/flood channels
	Create map of flood channels/diversions/water systems etc
	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
	Conduct countywide needs study on drainage capabilities
	Increase number of pumping stations
	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
	Ensure critical facilities are hardened/backed up
	Hardening water towers

	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
	Evaluate existing lift stations for adequacy
	Acquisition of property for on-site retention
	Evaluate regulations on roof drainage mechanisms
	Erosion-resistant plants
	Traffic light protection
	Upkeep of diversionary devices
	Install more turn-off valves on pipelines
	Backup generation facilities
	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
M	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment
	Fire spotter program/red flag program
	◊ Expand to other utilities
	Research on insect/pest mitigation technologies
	Volunteer home inspection program
	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
	Pre-identify shelters/recovery centers/other resources
	Roofing materials/defensive spacing regulations
	Community task forces for planning and education
	Fuel/dead tree removal
	Strategic pre-placement of fire fighting equipment

	Establish FEMA coordination processes based on ICS
	Brush clearings around repeaters
	Research new technologies for identifying/tracking fires
	Procure/deploy backup communications equipments
	"Red Tag" homes in advance of event
	Provide fire-resistant gel to homeowners
	Involve insurance agencies in mitigation programs
	Clear out abandoned vehicles from oases
	Code enforcement
	Codes prohibiting fireworks
M	Fuel modification/removal
H	Evaluate building codes
	Maintaining catch basins

OTHER HAZARDS

	Improve pipeline maintenance
	Wetlands mosquito mitigation (West Nile Virus)
	Insect control study
	Increase County Vector Control capacities
	General public drought awareness
	◊ Lawn watering rotation
	Develop County drought plan
	Mitigation of landslide-prone areas
	Develop winter storm sheltering plan
	Ease permitting process for building transmission lines
	Evaluate restrictions on dust/dirt/generating activities during wind seasons
	Rotational crop planning/soil stabilization
	Enhance agricultural checkpoint enforcement
	Agriculture - funding of detection programs
	Communications of pipeline maps (based on need to know)
	Improved notification plan on runaway trains
	Improve/maintain blackout notification plan.
	Support business continuity planning for utility outages

	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
	◊ Include dirty bomb planning
	Cooling stations - MOUs in place
	Fire Ant eradication program
	White Fly infestation abatement/eradication program
	Develop plan for supplemental water sources
	Public education on low water landscaping
	Salton Sea desalinization
	Establish agriculture security standards (focus on water supply)
	ID mutual aid agreements
	Vulnerability assessment on fiber-optic cable
	Upgrade valves on California aqueduct
	Public education
	◊ Bi-lingual signs
	◊ Blackout information
	Notification system for rail traffic - container contents
	Control and release of terrorism intelligence
	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY
PROPOSAL #1

Jurisdiction: Soboba Band of Luiseño Indians	
Contact:	Tobin White (Tribal Administrator) / Ed Lisle (Public Safety)
Phone:	951-2765 / 951-665-1318

MITIGATION STRATEGY INFORMATION

Proposal Name:

Soboba Wildland Fire Interface

Proposal Location:

Soboba Band Of Luiseño Indians Reservation

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	The Soboba Band of Luiseño Indians has experienced several wild land fires in the past years that have threatened both homes and historical sites on tribal property. Although the damage from these fires was minor, the loss potential was great. The last fire was in 2003 (Canyon Fire) that burnt 800 acres of reservation property and damaged several outbuildings.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

The mitigation strategy would be to initiate a Wildland Urban Interface Program that heightens the mitigation level for this specific standard.

Parts of this plan will include:
1 - Establishing a 30' diameter clear zone around residential properties and historical sites.
2 - Mowing of vacant weed infested lots.
3 - Enhancing our education program for tribal members on fire safety.
4 - Developing a more detailed evacuation plan for tribal residents.

This will help reduce the impact of wildland fires upon the reservation's property and historical sites.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	**X**	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

	Unfunded Proposal - funds are not available for the Proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
X	Non-FEMA Hazard Mitigation Funds - BIA Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

YES	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY
PROPOSAL #2

Jurisdiction: Soboba Band of Luiseño Indians	
Contact:	Tobin White (Tribal Administrator) / Ed Lisle (Tribal Safety)
Phone:	951-2765 / 951-665-1318

MITIGATION STRATEGY INFORMATION

Proposal Name:

Soboba Building Code Update

Proposal Location:

Soboba Band Of Luiseño Indians Reservation

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture – crop related mitigation
	Agriculture – animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	The Soboba Band of Luiseño Indians has experienced flooding due to reservoir dam failure in the 1980's. Tribal land and historical sites are located within the San Jacinto Vault Zone. The current building codes used for construction on tribal land are not current concerning fire, earthquake, or flood standards. Damage from any of these events could be devastating.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

The California Building Codes are generally used as the minimum standard for building codes in a city or county. The California Building Code has specific building standards to help mitigate the damage commercial and residential property from earthquakes, wildland fires, floods, etc. These codes are also used as requirements for any upgrades or additions to buildings.

This mitigation strategy would be to review the current City Building Codes and determine the necessary updates. In addition to this review and updating of standards, the tribe may determine that there is a need to increase specific codes to heighten the mitigation level for specific standards.

Under the proposal, all future structures will adhere to the Uniform Building Codes and will meet earthquake, fire, and flood standards.

Existing buildings on tribal property will be evaluated in regards to The Uniform Building Code Standards to determine if modifications would be cost effective.
.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	**X**	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

YES Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits?
(i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Soboba Band of Luiseño Indians	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES X NO**		
Current Population in Jurisdiction or Served	400	Projected Population in Jurisdiction or Served - in 2010	600
Current Sq Miles in Jurisdiction or Served	10.6	Projected Sq Miles in Jurisdiction or Served - in 2010	10.6
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	YES	If yes, please list ordinance or regulation number. Pending Tribal Council Adoption	
What is the number one land issue your agency will face in the next five years		Land Use - Expansion of facilities	
Approximate Number of Homes/Apts/etc.	200	Projected Number of Homes/Apts/etc.- in 2010	300
Approximate Total Residential Value	$ 2 MILLION	Projected Residential Total Value - in 2010	$ 3 MILLION
Approximate Number of Commercial Businesses	1	Projected Number of Commercial Businesses - in 2010	5
Approximate Percentage of Homes/Apts/etc in flood hazard zones and dollar loss	20% $400,000	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010 and dollar loss	20% $600,000
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones and dollar loss	100% $2,000,000	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010 and dollar loss	100% $3,000,000
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones and dollar loss	10% $200,000	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010 and dollar loss	10% $300,000
Approximate Percentage of Commercial Businesses in flood hazard zones	10%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	10%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	2	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	2
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	5 + 3 HISTORICAL SITES	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	6 + 3 HISTORICAL SITES
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	5 + 3 HISTORICAL SITES	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	5 + 3 HISTORICAL SITES
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Soboba Band of Luiseño Indians**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: 9/9/04**
Local Point of Contact: **Ed Lisle**	**Address:** P.O.Box 817 San Jacinto Ca. 92581	
Title: Safety and Facilities Manager		
Agency: **Soboba Band of Luiseño Indians**		
Phone Number: 951-654-2883 Ext. 193	**E-Mail:** elisle@soboba.com	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I - Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes - Part II - Soboba Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Yes - Part II - Soboba Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Insect Infestation Pgs 81 – 84 Dam failure Pgs 85 – 93 Hazmat incidents Pgs 94 – 101 Airline / airport emergencies Pgs 102 – 110 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pgs 119 – 124 Nuclear incidents Pgs 125 – 128 Terrorism Pgs 135 – 139		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part II - Soboba Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Yes - Part II - Soboba Section -	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Yes - Part II - Soboba Section -	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Yes - Part II - Soboba Section	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Yes - Part II - Soboba Section - Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes - Part II - Soboba Section -	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	No		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Yes - Part II - Soboba Section - Supplemental Questionnaire	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.			

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

SUBMITTING HOSPITALS

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Desert Regional Medical Center

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Desert Regional Medical Center		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:	Safety Officer		
First Name:	Deborah	Last Name:	Miller	
Agency Address:	Street:	1150 N Indian Canyon Drive		
	City:	Palm Springs		
	State:	CA		
	Zip:	92320		
Contact Phone	760-323-6425		FAX	760-778-5926
E-mail	deb.miller@tenethealth.com			

Population Served	596,577
Square Miles Served	

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	8/1/2003

Does your organization have a disaster/emergency operations plan?	NO
What year was your plan last updated?	8/1/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	YES
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	NO
CONTROLLED FLOOD CONTROL CHANNEL	NO
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	NO
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	YES
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	YES
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	YES

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**YES**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**YES**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	YES
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Desert Regional Medical Center	Fault	earthquake fault - San Andreas	No	Yes
Desert Regional Medical Center	Hazmat Manufacturing Facility	spent laboraory waste	Yes	No
Desert Regional Medical Center	Pipeline	oil	Yes	Yes
Desert Regional Medical Center	Railroad Track	railroad track in hospital territory	Yes	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Desert Regional Medical Center
Contact: Deborah Miller
Phone: 760-323-6425

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

Desert Regional Medical Center, 1150 North Indian Canyon Drive, Palm Springs, CA 92262

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response(i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative: Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

X	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Deborah Miller AGENCY: Desert Regional Medical Center DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	2	1	
FLOOD	3	3	3	3	2
OTHER NATURAL HAZARDS					
DROUGHT	3	3	4	3	
LANDSLIDES	2	3	2	2	
INSECT INFESTATION	3	4	3	3	
EXTREME SUMMER/WINTER WEATHER	2	4	4	4	
SEVERE WIND EVENT	3	3	3	3	
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	4	3	
TERRORISM	4	2	2	2	
OTHER MAN-MADE					
PIPELINE	2	3	3	3	
AQUEDUCT	2	3	3	3	
TRANSPORTATION	2	4	3	3	
BLACKOUTS	3	4	3	4	
HAZMAT ACCIDENTS	3	3	3	3	
NUCLEAR ACCIDENT	4	2	4	2	
TERRORISM	4	2	4	2	
CIVIL UNREST	2	2	2	2	
JAIL/PRISON EVENT	1	2	2	2	
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
H	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)

N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
N/A	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters

N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Desert Regional	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES NO XXX**		
Current Population in Jurisdiction or Served	120,000	Projected Population in Jurisdiction or Served - in 2010	136,000
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Desert Regional Medical Center**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 21, 2004**
Local Point of Contact: **Deborah Miller**		**Address:** **1150 N Indian Canyon Drive** **Palms Springs, CA 92262**
Title: **Safety Officer**		
Agency: **Desert Regional Medical Center**		
Phone Number: **(760) 323-6425**		**Email: deb.miller@tenethealth.com**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		

Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, Desert Regional Medical Center Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Desert Regional Medical Center Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Part II, Desert Regional Medical Center Section, Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Desert Regional Medical Center Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Nuclear incidents Pgs 125 – 128 Part II, Desert Regional Medical Center Section		

	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II, Desert Regional Medical Center Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & Desert Regional Medical Center Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Desert Regional Medical Center Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**[N] [S]**	

ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Hemet Valley Medical Center

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Hemet Valley Medical Center		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:			
First Name:	Richard	Last Name:	Greener	
Agency Address:	Street:	1117 East Devonshire Ave,		
	City:	Hemet		
	State:	CA		
	Zip:	92543		
Contact Phone	951-652-2811 Ext. 5075		FAX	
E-mail	rgreener@vhs.dst.ca.us			

Population Served	0
Square Miles Served	0

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	1/1/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1/1/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	NO
MOBILE HOME PARKS	NO
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	NO
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	YES
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**YES**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	YES
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction ?	Adjacent to Jurisdiction?
Hemet Valley Medical Center	Dam	Diamond Valley Dam	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: **Richard Greener** AGENCY: **Hemet Valley Medical Center** DATE: **6/30/04**

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 22**
EARTHQUAKE	4	3	4	3	7
WILDLAND FIRE	3	4	1	3	8
FLOOD	3	3	3	3	9
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	3	13
LANDSLIDES	2	3	2	1	21
INSECT INFESTATION	3	4	2	3	11
EXTREME SUMMER/WINTER WEATHER	2	4	1	4	1
SEVERE WIND EVENT	3	3	1	3	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	4	2
TERRORISM	4	2	4	2	18
OTHER MAN-MADE					
PIPELINE	2	3	1	2	19
AQUEDUCT	2	3	1	2	20
TRANSPORTATION	2	4	2	4	5
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	2	3	6
NUCLEAR ACCIDENT	4	2	4	1	22
TERRORISM	4	2	4	2	17
CIVIL UNREST	2	2	3	3	15
JAIL/PRISON EVENT	1	2	2	2	16
OTHER - PLEASE DESCRIBE BELOW					
BOMB THREAT			4	3	14
INFANT/PEDIATRIC ABDUCTION			2	3	10
EPIDEMIC			3	4	3

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation activities or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning

H	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines

H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness

N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

H	SB1953 NPC2 – Stage 1 (essential equipment anchorage/emergency generator)
H	SB1953 – Stage 2 projected 2008 “B” building structurally updated/ “A” building all essential functions removed. (extension requested)
H	Update EMS radio system
H	Underground fuel lines/self control fuel links/leak detection system

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	Hemet Valley Medical Center
Contact:	Richard Greener
Phone:	(951) 652-2811 Ext. 5075

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

1117 East Devonshire Ave, Hemet, CA 92543

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response(i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative: Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Hemet Valley Medical Center	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES NO XXX**		
Current Population in Jurisdiction or Served		Projected Population in Jurisdiction or Served - in 2010	
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	1	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	1
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Hemet Valley Medical Center**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion:** **September 8, 2004**
Local Point of Contact: **Richard Greener**	**Address:** **1116 E. Latham** **Hemet, CA. 92543**	
Title: **Director of Safety**		
Agency: Hemet Valley Medical Center		
Phone Number: (951) 652-2811 x 5075	**E-Mail: rgreener@vhs.dst.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	

Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, Hemet Valley Part II Hemet Valley Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Hemet Valley Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Hemet Valley Medical Center Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Hemet Valley Medical Center Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Earthquakes Pages 54 – 66 Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Hemet Valley Medical Center Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Hemet Valley Medical Center Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Hemet Valley Medical Center Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Hemet Valley Medical Center Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Inland Valley Medical Center

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Inland Valley Medical Center		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:	Disaster Coordinator		
First Name:	Maureen	Last Name:	Bowlin	
Agency Address:	Street:	36485 Inland Valley Drive		
	City:	Wildomar		
	State:	Ca.		
	Zip:	92595		
Contact Phone	(951) 677-1111		FAX	
E-mail	maureen.bowlin@uhsinc.com			

Population Served	0	Square Miles Served	0

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	6/1/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	6/1/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	NO
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON REINFORCED BUILDINGS	
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	YES
FOREST AREA NEXT TO JURISDICTION	YES
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	
HAZARDOUS WASTE FACILITIES IN JURISDICTION	YES
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	YES

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**YES**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	YES
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	YES
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	YES
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Inland Valley	Dam	Diamond Valey Lake	No	Yes
Inland Valley	Fault	Elsinore	Yes	No
Inland Valley	Flood Channel	Line G	Yes	No
Inland Valley	Lake	Diamond Valley Lake	No	Yes
Inland Valley	Lake	Lake Skinner	No	Yes
Inland Valley	River	Murrieta Creek	Yes	No
Inland Valley	Stream	Warm Springs	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Maureen Bowlin(Disaster Coordinator) AGENCY: **Inland Valley Medical Center** DATE: **6/30/04**

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 22**
EARTHQUAKE	4	3	4	3	7
WILDLAND FIRE	3	4	1	3	8
FLOOD	3	3	3	3	9
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	3	13
LANDSLIDES	2	3	2	1	21
INSECT INFESTATION	3	4	2	3	11
EXTREME SUMMER/WINTER WEATHER	2	4	1	4	1
SEVERE WIND EVENT	3	3	1	3	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	4	2
TERRORISM	4	2	4	2	18
OTHER MAN-MADE					
PIPELINE	2	3	1	2	19
AQUEDUCT	2	3	1	2	20
TRANSPORTATION	2	4	2	4	5
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	2	3	6
NUCLEAR ACCIDENT	4	2	4	1	22
TERRORISM	4	2	4	2	17
CIVIL UNREST	2	2	3	3	15
JAIL/PRISON EVENT	1	2	2	2	16
OTHER - PLEASE DESCRIBE BELOW					
BOMB THREAT			4	3	14
INFANT/PEDIATRIC ABDUCTION			2	3	10
EPIDEMIC			3	4	3

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
H	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

PLEASE LIST ANY ADDITIONAL MITIGATION GOALS AND PRIORITY LEVEL FOR YOUR AGENCY OR FACILITY HERE.

H	SB1953 NPC2 – Stage 1 (essential equipment anchorage/emergency generator)
H	SB1953 – Stage 2 projected 2008 “B” building structurally updated/ “A” building all essential functions removed. (extension requested)
H	Update EMS radio system
H	Underground fuel lines/self control fuel links/leak detection system

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Inland Valley Medical Center	
Contact:	Maureen Bowlin(Disaster Coordinator)/Brian Tickel(Safety Officer)
Phone:	951-696-6184

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

Inland Valley Medical Center 36485 Inland Valley Drive, Wildomar, Ca. 92591

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event, where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003, where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Inland Valley Medical Center	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES NO XXXX**		
Current Population in Jurisdiction or Served		Projected Population in Jurisdiction or Served - in 2010	
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Inland Valley Medical Center** **Southwest Healthcare System**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 21, 2004**
Local Point of Contact: **Maureen Bowlin RN CEN MICN**	**Address:** **36485 Inland Valley Drive.** **Wildomar** **CA. 92595**	
Title: **Disaster Coordinator**		
Agency: **Inland Valley Medical Center**		
Phone Number: **(951) 600-4321**	**Email: Maureen.Bowlin@uhsinc.com**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.

S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	

Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, Inland Valley Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Inland Valley Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Inland Valley Medical Center Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Inland Valley Medical Center Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pages 54 – 66 Dam failure Pgs 85 – 93 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Inland Valley Medical Center Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Inland Valley Medical Center Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Inland Valley Medical Center Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Inland Valley Medical Center Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

JFK Memorial Hospital

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		JFK Hospital		
Type Agency/Jurisdiction:		Other		
Contact Person:	Title:	Clinical Manager		
First Name:	Molly	Last Name:	Groban, MS,RN	
Agency Address:	Street:	47-111 Monroe St.		
	City:	Indio		
	State:	Ca.		
	Zip:	90221		
Contact Phone	760-775-8481		FAX	
E-mail	Molly.groban@tenethealth.com			

Population Served	120,382	Square Miles Served	

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	2002

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2001
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

	YES
AIRPORT IN JURISDICTION	YES
AIRPORT NEXT TO JURISDICTION	
DAIRY INDUSTRY	
POULTRY INDUSTRY	
CROPS/ORCHARDS	
DAMS IN JURISDICTION	
DAMS NEXT TO JURISDICTION	
LAKE/RESERVOIR IN JURISDICTION	
LAKE/RESERVOIR NEAR JURISDICTION	
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	
FOREST AREA NEXT TO JURISDICTION	
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	
HAZARDOUS WASTE FACILITIES IN JURISDICTION	
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

	YES
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	YES
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	YES
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	YES
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
JFK Memorial	Aqueduct	Coachella Canal	Yes	No
JFK Memorial	Fault	San Andreas	No	Yes
JFK Memorial	Fault	San Jacinto	No	Yes
JFK Memorial	Flood Channel	Coachella Valley Stormwater Channel	Yes	No
JFK Memorial	Flood Channel	La Quinta Evacuation Channel	Yes	No
JFK Memorial	Pipeline	10 Freeway pipelines	No	Yes
JFK Memorial	Reservoir	Lake Cahuilla	No	Yes

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Molly Groban AGENCY: JFK Hospital DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	2	1	15
FLOOD	3	3	3	3	7
OTHER NATURAL HAZARDS					
DROUGHT	3	3	4	3	5
LANDSLIDES	2	3	2	2	17
INSECT INFESTATION	3	4	3	3	6
EXTREME SUMMER/WINTER WEATHER	2	4	4	4	2
SEVERE WIND EVENT	3	3	3	3	8
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	4	3	3
TERRORISM	4	2	2	2	16
OTHER MAN-MADE					
PIPELINE	2	3	3	3	13
AQUEDUCT	2	3	3	3	14
TRANSPORTATION	2	4	3	3	9
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	3	3	10
NUCLEAR ACCIDENT	4	2	4	2	11
TERRORISM	4	2	4	2	12
CIVIL UNREST	2	2	2	2	18
JAIL/PRISON EVENT	1	2	2	2	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goals identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning

H	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues

N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
N/A	Fuel/dead tree removal

H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping

N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	JOHN F. KENNEDY MEMORIAL HOSPITAL
Contact:	Molly Groban, MS, RN, Clinical Manager ED
Phone:	760-775-8481

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

47-111 Monroe Street, Indio, California 90221

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response(i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: JFK Hospital	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES NO XXXX**		
Current Population in Jurisdiction or Served	120,000	Projected Population in Jurisdiction or Served - in 2010	136,000
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number. Hospital Policy - #402	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **JOHN F. KENNEDY MEMORIAL HOSPITAL**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: Molly Groban, MS, RN,		**Address:** 47-111 Monroe Street, Indio, California 90221
Title: Clinical Manager ED		
Agency: JOHN F. KENNEDY MEMORIAL HOSPITAL		
Phone Number: 760-775-8481		Molly.groban@tenethealth.com

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, JFK Hospital Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, JFK Hospital Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Part II, JFK Hospital Section, Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, JFK Hospital Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Nuclear incidents Pgs 125 – 128 Part II, JFK Hospital Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II, JFK Hospital Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & JFK Hospital Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, JFK Hospital Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Kaiser Hospital

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Kaiser Hospital		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:	Manager, Environmental Health and Safety		
First Name:	Rick	Last Name:	Davis	
Agency Address:	Street:	10800 Magnolia Ave		
	City:	Riverside		
	State:	CA		
	Zip:	92505		
Contact Phone	951-427-7282		FAX	
E-mail	rick.e.davis@kp.org			

Population Served	0	Square Miles Served	0

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	5/1/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	5/1/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	YES
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	NO
MOBILE HOME PARKS	NO
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**YES**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	YES
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
Kaiser Hospital	Hazmat Storage Location	Hospital Storage Site	Yes	No
Kaiser Hospital	Lake	Lake Mathews	No	Yes
Kaiser Hospital	Railroad Track	Union Pacific	No	Yes
Kaiser Hospital	Reservoir	Tilden	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Rick Davis AGENCY: Kaiser Permanente DATE: Sept. 23, 2004

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	3	3	1
WILDLAND FIRE	3	4	2	2	10
FLOOD	3	3	2	2	13
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	3	11
LANDSLIDES	2	3	1	1	14
INSECT INFESTATION	3	4	1	1	19
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	8
SEVERE WIND EVENT	3	3	3	4	9
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	3	15
TERRORISM	4	2	3	2	17
OTHER MAN-MADE					
PIPELINE	2	3	2	3	7
AQUEDUCT	2	3	2	2	12
TRANSPORTATION	2	4	3	4	5
BLACKOUTS	3	4	3	3	3
HAZMAT ACCIDENTS	3	3	4	4	2
NUCLEAR ACCIDENT	4	2	2	2	16
TERRORISM	4	2	3	3	18
CIVIL UNREST	2	2	3	2	4
JAIL/PRISON EVENT	1	2	1	2	6
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
LM	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
H	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
M	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
	◊ Mobile home parks
	Develop educational materials on structural reinforcement and home inspections
	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
	Insurance coverage on public facilities
	Funding for non-structural abatement (Earthquake kits, etc.)
	Pre - identify empty commercial space for seismic re-location
	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
	Mapping of liquefaction zones
	Incorporate County geologist data into planning
H	Backup water supplies for hospitals
	Evaluate pipeline seismic resiliency

	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
	Evaluate depths of aquifers/wells for adequacy during quakes
	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
	Continue existing interoperability project
	Strengthen/harden
	Relocate
H	Redundancy
H	Mobile repeaters

FLOODS

M	Update development policies for flood plains
M	Public education on locations of flood plains
M	Develop multi-jurisdictional working group on floodplain management
	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
H	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
	Require digital floor plans on new non-residential construction
	Upgrade dirt embankments to concrete
	Conduct countywide needs study on drainage capabilities
	Increase number of pumping stations
M	Increase sandbag distribution capacities
	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
H	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
	Vegetation restoration programs
	Ensure critical facilities are hardened/backed up
	Hardening water towers
	Terrorism Surveillance - cameras at reservoirs/dams
	Riverbed maintenance
	Evaluate existing lift stations for adequacy
	Acquisition of property for on-site retention
	Evaluate regulations on roof drainage mechanisms
	Erosion-resistant plants
	Traffic light protection
	Upkeep of diversionary devices
	Install more turn-off valves on pipelines
	Backup generation facilities
	Identify swift water rescue capabilities across County

WILDFIRES

	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
	Develop strategic plan for forest management
	Public education on wildfire defense
	Encourage citizen surveillance and reporting
	Identify hydrants with equipment ownership information
	Enhanced fire fighting equipment
	Fire spotter program/red flag program
	◊ Expand to other utilities
	Research on insect/pest mitigation technologies
	Volunteer home inspection program
	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
	Pre-identify shelters/recovery centers/other resources
	Roofing materials/defensive spacing regulations
	Community task forces for planning and education
	Fuel/dead tree removal
	Strategic pre-placement of fire fighting equipment
	Establish FEMA coordination processes based on ICS
	Brush clearings around repeaters
	Research new technologies for identifying/tracking fires
	Procure/deploy backup communications equipments
	"Red Tag" homes in advance of event
	Provide fire-resistant gel to homeowners
	Involve insurance agencies in mitigation programs
	Clear out abandoned vehicles from oases
	Code enforcement
	Codes prohibiting fireworks
	Fuel modification/removal
	Evaluate building codes
	Maintaining catch basins

OTHER HAZARDS

	Improve pipeline maintenance
	Wetlands mosquito mitigation (West Nile Virus)
	Insect control study
	Increase County Vector Control capacities
	General public drought awareness
	◊ Lawn watering rotation
	Develop County drought plan
	Mitigation of landslide-prone areas
	Develop winter storm sheltering plan
	Ease permitting process for building transmission lines
	Evaluate restrictions on dust/dirt/generating activities during wind seasons
	Rotational crop planning/soil stabilization
	Enhance agricultural checkpoint enforcement
	Agriculture - funding of detection programs
	Communications of pipeline maps (based on need to know)
	Improved notification plan on runaway trains
	Improve/maintain blackout notification plan.
	Support business continuity planning for utility outages
	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
	Create a SONGS regional planning group
	◊ Include dirty bomb planning
	Cooling stations - MOUs in place
	Fire Ant eradication program
	White Fly infestation abatement/eradication program
	Develop plan for supplemental water sources
	Public education on low water landscaping
	Salton Sea desalinization
	Establish agriculture security standards (focus on water supply)
	ID mutual aid agreements
	Vulnerability assessment on fiber-optic cable
	Upgrade valves on California aqueduct
	Public education
	◊ Bi-lingual signs
	◊ Blackout information
	Notification system for rail traffic - container contents
	Control and release of terrorism intelligence
	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Kaiser Permanente
Contact: Rick Davis
Phone: (951)427-7282

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

10800 Magnolia Ave. Riverside, Ca.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

X	Unfunded Proposal - funds are not available for the Proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Kaiser Permanente		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO XXXX**	
Current Population in Jurisdiction or Served	25,000	Projected Population in Jurisdiction or Served - in 2010	45,000
Current Sq Miles in Jurisdiction or Served	25	Projected Sq Miles in Jurisdiction or Served - in 2010	25
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	No	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	Uncontrolled expansion of residential and commercial areas within our service area.		
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones		Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Kaiser Permanente**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: **Rick Davis**	**Address:** **10800 Magnolia Ave. Riverside, Ca. 92505**	
Title: **Manager, Environmental Health and Safety**		
Agency: **Kaiser Permanente**		
Phone Number: **(951) 427-7282**	**E-Mail: Rick.E.Davis@kp.org.**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Kaiser Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Kaiser Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Kaiser Hospital Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Kaiser Hospital Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Kaiser Hospital Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Kaiser Hospital Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Kaiser Hospital Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Kaiser Hospital Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Menifee Valley Medical Center

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Menifee Valley Medical Center		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:			
First Name:	Richard	Last Name:	Greener	
Agency Address:	Street:	28400 McCall Boulevard		
	City:	Sun City		
	State:	CA		
	Zip:	92586		
Contact Phone	951-652-2811	Ext. 5076	FAX	
E-mail	rgreener@vhs.dst.ca.us			

Population Served	Square Miles Served

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	
AIRPORT NEXT TO JURISDICTION	
DAIRY INDUSTRY	
POULTRY INDUSTRY	
CROPS/ORCHARDS	
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	
MOBILE HOME PARKS	
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON REINFORCED BUILDINGS	
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	
FOREST AREA NEXT TO JURISDICTION	
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	
RAILROAD TRACKS NEXT TO JURISDICTION	
HAZARDOUS WASTE FACILITIES IN JURISDICTION	YES
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	YES
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Menifee Valley	Dam	Diamond Valey Lake	No	Yes
Menifee Valley	Fault	Elsinore	Yes	No
Menifee Valley	Flood Channel	Line G	Yes	No
Menifee Valley	Lake	Diamond Valley Lake	No	Yes
Menifee Valley	Lake	Lake Skinner	No	Yes
Menifee Valley	River	Murrieta Creek	Yes	No
Menifee Valley	Stream	Warm Springs	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: **Richard Greener** AGENCY: **Menifee Valley Medical Center** DATE: **6/30/04**

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 22**
EARTHQUAKE	4	3	4	3	7
WILDLAND FIRE	3	4	1	3	8
FLOOD	3	3	3	3	9
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	3	13
LANDSLIDES	2	3	2	1	21
INSECT INFESTATION	3	4	2	3	11
EXTREME SUMMER/WINTER WEATHER	2	4	1	4	1
SEVERE WIND EVENT	3	3	1	3	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	4	2
TERRORISM	4	2	4	2	18
OTHER MAN-MADE					
PIPELINE	2	3	1	2	19
AQUEDUCT	2	3	1	2	20
TRANSPORTATION	2	4	2	4	5
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	2	3	6
NUCLEAR ACCIDENT	4	2	4	1	22
TERRORISM	4	2	4	2	17
CIVIL UNREST	2	2	3	3	15
JAIL/PRISON EVENT	1	2	2	2	16
OTHER - PLEASE DESCRIBE BELOW					
BOMB THREAT			4	3	14
INFANT/PEDIATRIC ABDUCTION			2	3	10
EPIDEMIC			3	4	3

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
H	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)
H	SB1953 NPC2 – Stage 1 (essential equipment anchorage/emergency generator)
H	SB1953 – Stage 2 projected 2008 “B” building structurally updated/ “A” building all essential functions removed. (extension requested)
H	Update EMS radio system
H	Underground fuel lines/self control fuel links/leak detection system

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Menifee Valley Medical Center	
Contact:	Richard Greener
Phone:	(951) 652-2811 Ext. 5075

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

28400 McCall Blvd, Sun City, CA 92586

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response(i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Menifee Valley Medical Center		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO XXXX**	
Current Population in Jurisdiction or Served		Projected Population in Jurisdiction or Served - in 2010	
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Menifee Valley Medical Center**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 21, 2004**
Local Point of Contact: **Richard Greener**		**Address:** **28400 McCall Blvd** **Sun City, CA. 92586**
Title: **Director of Safety**		
Agency: **Menifee Valley Medical Center**		
Phone Number: **(951) 652-2811 x 5075**		**Email: rgreener@vhs.dst.ca.us**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.

S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Menifee Valley Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Menifee Valley Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Menifee Valley Medical Center Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Menifee Valley Medical Center Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Menifee Valley Medical Center Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Menifee Valley Medical Center Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Menifee Valley Medical Center Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Menifee Valley Medical Center Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Moreno Valley Community Hospital

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Moreno Valley Community Hospital		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:			
First Name:	Richard	Last Name:	Greener	
Agency Address:	Street:	27300 Iris Ave		
	City:	Moreno Valley		
	State:	Ca.		
	Zip:	92555		
Contact Phone	951-652-2811	Ext. 5075	FAX	
E-mail	rgreener@vhs.dst.ca.us			

Population Served	Square Miles Served

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	
AIRPORT NEXT TO JURISDICTION	
DAIRY INDUSTRY	
POULTRY INDUSTRY	
CROPS/ORCHARDS	
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	
LAKE/RESERVOIR IN JURISDICTION	
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	
MOBILE HOME PARKS	
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON REINFORCED BUILDINGS	
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	
FOREST AREA NEXT TO JURISDICTION	
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	
RAILROAD TRACKS NEXT TO JURISDICTION	
HAZARDOUS WASTE FACILITIES IN JURISDICTION	YES
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	YES

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	**YES**
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	YES
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	YES
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
MORENO VALLEY	Dam	Lake Perris Dam	No	Yes
MORENO VALLEY	Dam	Perris Dam	Yes	No
MORENO VALLEY	Dam	Pigeon Pass Dam	Yes	No
MORENO VALLEY	Fault	San Jacinto Fault	Yes	No
MORENO VALLEY	Flood Channel	Oleander Channel	Yes	No
MORENO VALLEY	Flood Channel	Perris Valley Channel	Yes	No
MORENO VALLEY	Flood Channel	Quincy Flood Channel	Yes	No
MORENO VALLEY	Hazmat Storage Location	Ammonia	Yes	No
MORENO VALLEY	Hazmat Storage Location	Chlorine	Yes	No
MORENO VALLEY	Hazmat Storage Location	Fuel	Yes	No
MORENO VALLEY	Hazmat Storage Location	Hazardous Waste	Yes	No
MORENO VALLEY	Lake	Lake Perris	No	Yes
MORENO VALLEY	Pipeline	High Pressure Gas Line	Yes	No
MORENO VALLEY	Pipeline	Jet Fuel Line	Yes	No
MORENO VALLEY	Railroad Track	Santa Fe Railroad	No	Yes
MORENO VALLEY	Railroad Track	Union Pacific	No	Yes
MORENO VALLEY	Reservoir	Poor Man's Resevoir	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: **Richard Greener** AGENCY: **Moreno Valley Community Hospital** DATE: **6/30/04**

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 22**
EARTHQUAKE	4	3	4	3	7
WILDLAND FIRE	3	4	1	3	8
FLOOD	3	3	3	3	9
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	3	13
LANDSLIDES	2	3	2	1	21
INSECT INFESTATION	3	4	2	3	11
EXTREME SUMMER/WINTER WEATHER	2	4	1	4	1
SEVERE WIND EVENT	3	3	1	3	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	4	2
TERRORISM	4	2	4	2	18
OTHER MAN-MADE					
PIPELINE	2	3	1	2	19
AQUEDUCT	2	3	1	2	20
TRANSPORTATION	2	4	2	4	5
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	2	3	6
NUCLEAR ACCIDENT	4	2	4	1	22
TERRORISM	4	2	4	2	17
CIVIL UNREST	2	2	3	3	15
JAIL/PRISON EVENT	1	2	2	2	16
OTHER - PLEASE DESCRIBE BELOW					
BOMB THREAT			4	3	14
INFANT/PEDIATRIC ABDUCTION			2	3	10
EPIDEMIC			3	4	3

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
H	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)
H	SB1953 NPC2 – Stage 1 (essential equipment anchorage/emergency generator)
H	SB1953 – Stage 2 projected 2008 “B” building structurally updated/ “A” building all essential functions removed. (extension requested)
H	Update EMS radio system
H	Underground fuel lines/self control fuel links/leak detection system

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Moreno Valley Community Hospital	
Contact:	Richard Greener
Phone:	(951) 652-2811 Ext. 5075

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

27300 Iris Ave, Moreno Valley, CA 92555

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response(i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Moreno Valley Community Hospital**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO XXXX**	
Current Population in Jurisdiction or Served		Projected Population in Jurisdiction or Served - in 2010	
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: Moreno Valley Community Hospital	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 21, 2004**
Local Point of Contact: **Richard Greener**	**Address:** 27300 Iris Avenue Moreno Valley CA. 92360	
Title: **Director of Safety**		
Agency: Moreno Valley Community Hospital		
Phone Number: (951) 652-2811 x 5075	**Email: rgreener@vhs.dst.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	

Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, Moreno Valley Community Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Moreno Valley Community Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Moreno Valley Community Hospital Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Moreno Valley Community Hospital Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Moreno Valley Community Hospital Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Moreno Valley Community Hospital Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Moreno Valley Community Hospital Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Moreno Valley Community Hospital Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Parkview Community Hospital

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Parkview Community Hospital		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:			
First Name:	Jan	Last Name:	Sweezer	
Agency Address:	Street:	3865 Jackson,		
	City:	Riverside		
	State:	Ca.		
	Zip:	92503		
Contact Phone	951-688-2211	Ext. 2459	FAX	
E-mail	jsweezer@pchmc.org			

Population Served	0
Square Miles Served	0

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	1/1/2004

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1/1/2004
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	YES
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	NO
MOBILE HOME PARKS	NO
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**YES**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Parkview Hospital	Hazmat Storage Location	Hospital Chemical Storage	Yes	No
Parkview Hospital	Lake	Lake Mathews	No	Yes
Parkview Hospital	Railroad Track	Unio Pacific	No	Yes
Parkview Hospital	Reservoir	Tilden	No	Yes
Parkview Hospital	River	Santa Ana River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Jan Sweezer/ Keith Grindle AGENCY: Parkview Community Hospital DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 22**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	0	0	19
FLOOD	3	3	3	3	5
OTHER NATURAL HAZARDS					
DROUGHT	3	3	1	1	4
LANDSLIDES	2	3	0	0	12
INSECT INFESTATION	3	4	0	0	13
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	3
SEVERE WIND EVENT	3	3	1	3	8
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	0	16
TERRORISM	4	2	4	2	17
OTHER MAN-MADE					
PIPELINE	2	3	0	0	18
AQUEDUCT	2	3	1	3	11
TRANSPORTATION	2	4	2	3	10
BLACKOUTS	3	4	1	2	9
HAZMAT ACCIDENTS	3	3	2	3	7
NUCLEAR ACCIDENT	4	2	4	2	6
TERRORISM	4	2	4	2	2
CIVIL UNREST	2	2	2	2	14
JAIL/PRISON EVENT	1	2	0	0	15
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location

N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
H	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
H	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
H	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
M	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
H	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
M	◊ Enhanced public information
N/A	◊ Road closure compliance
H	◊ Shelter locations
M	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants

N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
H	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
M	Public education program
M	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
M	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders and hospitals
H	◊ Terrorism planning/coordination
H	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
M	◊ dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	Parkview Community Hospital
Contact:	Jan Sweezer/ Keith Grindle
Phone:	951-688-2211

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

Parkview Community Hospital, 3865 Jackson, Riverside, Ca. 92503

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response(i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Parkview Community Hospital		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __XXX__**	
Current Population in Jurisdiction or Served	285,000	Projected Population in Jurisdiction or Served - in 2010	359,000
Current Sq Miles in Jurisdiction or Served	80	Projected Sq Miles in Jurisdiction or Served - in 2010	80
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones	1	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	1
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Parkview Community Hospital**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion:** **September 8, 2004**
Local Point of Contact: **Jan Sweezer**		**Address:** **3865 Jackson** **Riverside, Ca. 92503**
Title:		
Agency: Parkview Community Hospital		
Phone Number: (951) 688-2211 Ex 2459		**E-Mail: jsweezer@pchmc.org**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Parkview Community Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Parkview Community Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Parkview Community Hospital Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Parkview Community Hospital Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Parkview Community Hospital Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Parkview Community Hospital Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Parkview Community Hospital Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Parkview Community Hospital Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Rancho Springs Medical Center

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Rancho Springs Medical Center		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:	Disaster Coordinator		
First Name:	Maureen	Last Name:	Bowlin	
Agency Address:	Street:	25500 Medical Center Drive		
	City:	Murrieta		
	State:	CA		
	Zip:	92562		
Contact Phone	(951) 696-6000		FAX	
E-mail	Maureen.bowlin@uhsinc.com			

Population Served	0
Square Miles Served	0

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	6/1/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	6/1/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	NO
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	NO
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	YES
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	NO
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	YES
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

	YES
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	YES
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	YES
NEAR A FOREST AREA	YES
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Rancho Springs Medical Center	Hazmat Storage Location	Hospital Stirage Site	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Maureen Bowlin(Disaster Coordinator) AGENCY: **Rancho Springs Medical Center** DATE: **6/30/04**

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 22**
EARTHQUAKE	4	3	4	3	7
WILDLAND FIRE	3	4	1	3	8
FLOOD	3	3	3	3	9
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	3	13
LANDSLIDES	2	3	2	1	21
INSECT INFESTATION	3	4	2	3	11
EXTREME SUMMER/WINTER WEATHER	2	4	1	4	1
SEVERE WIND EVENT	3	3	1	3	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	4	2
TERRORISM	4	2	4	2	18
OTHER MAN-MADE					
PIPELINE	2	3	1	2	19
AQUEDUCT	2	3	1	2	20
TRANSPORTATION	2	4	2	4	5
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	2	3	6
NUCLEAR ACCIDENT	4	2	4	1	22
TERRORISM	4	2	4	2	17
CIVIL UNREST	2	2	3	3	15
JAIL/PRISON EVENT	1	2	2	2	16
OTHER - PLEASE DESCRIBE BELOW					
BOMB THREAT			4	3	14
INFANT/PEDIATRIC ABDUCTION			2	3	10
EPIDEMIC			3	4	3

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
H	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)
H	SB1953 NPC2 – Stage 1 (essential equipment anchorage/emergency generator)
H	SB1953 – Stage 2 projected 2008 “B” building structurally updated/ “A” building all essential functions removed. (extension requested)
H	Update EMS radio system
H	Underground fuel lines/self control fuel links/leak detection system

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Rancho Springs Medical Center	
Contact:	Maureen Bowlin(Disaster Coordinator)/Brian Tickel(Safety Officer)
Phone:	951-696-6184

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

25500 Medical Center Drive, Murrieta Ca. 92562

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response(i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003 where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Rancho Springs Medical Center**	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO XXXX**		
Current Population in Jurisdiction or Served		Projected Population in Jurisdiction or Served - in 2010	
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Rancho Springs Medical Center**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 21, 2004**
Local Point of Contact: **Maureen Bowlin RN CEN MICN**		**Address:** **25500 Medical Center Drive, Murrieta Ca. 92562**
Title: **Disaster Coordinator**		
Agency: **Rancho Springs Medical Center**		
Phone Number: **951-696-6184**		**Email: Maureen.Bowlin@uhsinc.com**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required..

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Rancho Springs Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Rancho Springs Medical Center Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Rancho Springs Medical Center Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Rancho Springs Medical Center Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildland Fires: Pages 28 - 40 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Rancho Springs Medical Center Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Rancho Springs Medical Center Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Rancho Springs Medical Center Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Rancho Springs Medical Center Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Riverside Community Hospital

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Riverside Community Hospital		
Type Agency/Jurisdiction:		Hospital		
Contact Person:	Title:	Director Emergency Services		
First Name:	Donnette	Last Name:	Baehr	
Agency Address:	Street:	4445 Magnolia Ave		
	City:	Riverside		
	State:	CA		
	Zip:	92501		
Contact Phone	951-788-3675		FAX	788-3494
E-mail	Donnette.baehr@hcahealthcare.com			

Population Served	
Square Miles Served	

Does your organization have a general plan?	NO
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	2001
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICAION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	YES
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	NO
MOBILE HOME PARKS	NO
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**YES**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Riverside Community Hospital	Hazmat Storage Location	Hospital Chemical Storage	Yes	No
	Lake	Lake Mathews	No	Yes
	Railroad Track	Union Pacific	No	Yes
	Reservoir	Tilden	No	Yes
	River	Santa Ana River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: **Donnette Baehr** AGENCY: **Riverside Community Hospital** DATE: **6/30/04**

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 22**
EARTHQUAKE	4	3	4	3	7
WILDLAND FIRE	3	4	1	3	8
FLOOD	3	3	3	3	9
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	3	13
LANDSLIDES	2	3	2	1	21
INSECT INFESTATION	3	4	2	3	11
EXTREME SUMMER/WINTER WEATHER	2	4	1	4	1
SEVERE WIND EVENT	3	3	1	3	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	4	2
TERRORISM	4	2	4	2	18
OTHER MAN-MADE					
PIPELINE	2	3	1	2	19
AQUEDUCT	2	3	1	2	20
TRANSPORTATION	2	4	2	4	5
BLACKOUTS	3	4	3	4	4
HAZMAT ACCIDENTS	3	3	2	3	6
NUCLEAR ACCIDENT	4	2	4	1	22
TERRORISM	4	2	4	2	17
CIVIL UNREST	2	2	3	3	15
JAIL/PRISON EVENT	1	2	2	2	16
OTHER - PLEASE DESCRIBE BELOW					
BOMB THREAT			4	3	14
INFANT/PEDIATRIC ABDUCTION			2	3	10
EPIDEMIC			3	4	3

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning

H	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
H	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues

N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
L	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
M	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal

H	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
H	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping

N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
M	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)
H	SB1953 NPC2 – Stage 1 (essential equipment anchorage/emergency generator)
H	SB1953 – Stage 2 projected 2008 “B” building structurally updated/ “A” building all essential functions removed. (extension requested)
H	Update EMS radio system
H	Underground fuel lines/self control fuel links/leak detection system

PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Riverside Community Hospital	
Contact:	Donnette Baehr
Phone:	951-788-3675

MITIGATION STRATEGY INFORMATION

Proposal Name:

Countywide Hospital Mitigation Proposal - Emergency Portable Shelters and Treatment Areas

Proposal Location:

Riverside Comm. Hospital, 4445 Magnolia Avenue, Riverside, CA 92501

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning and Response (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Although a hospital in Riverside County has never suffered the dynamic physical damage that was suffered by several hospitals in the Northridge earthquake or in other major earthquakes, the potential for such damage to one or more local hospitals is great. In conducting the countywide hazard assessment, all of the hospitals were found to be at some level of "earthquake risk" because of their proximity to one or more earthquake faults in the county.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

In conducting the hazard assessment as a group, the hospitals in the county determined that one of the most critical issues was the problem of immediately sheltering of critical hospital patients after any disastrous event where the hospital is no longer safe for patients. This event could be an earthquake, flood, hazardous materials event, or other event that would require patients to be removed from the normal protection of their hospital room.

When the hospitals reviewed this type of event, one of the issues they looked at was the ability to quickly transport a large number of critical patients from one hospital to another. I looking at recent events such as the fires in October of 2003, where an entire hospital had to be evacuated because of the impending forest fire, one of the immediate concerns was the amount of time it took to gather enough methods of transportation to move all of the patients. This timeframe was several hours. Because the event was a fire, many of the patients were left inside the hospital. However, had the hospital been damaged from an earthquake, the patients would have been moved outside while awaiting transportation.

Having critical patients awaiting transportation and/or receiving treatment outside for an extended period of time has raised numerous safety, weather related, and welfare issues for those patients. To reduce the impact of the earthquake on the patients in the hospitals, the hospitals have determined that an important mitigation effort would be the purchase of several portable shelters that could be used in the event of an earthquake or other similar event. These tents could also be used as "surge capacity tents" in the event of a disaster not directly affecting the patients in the hospital, but causing a large number of victims to come to the hospital. These tents would remain portable so that they could be transported around the county in the event of a hospital receiving major damage.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Riverside Community Hospital		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __XXX**	
Current Population in Jurisdiction or Served	285,000	Projected Population in Jurisdiction or Served - in 2010	359,000
Current Sq Miles in Jurisdiction or Served	80	Projected Sq Miles in Jurisdiction or Served - in 2010	80
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones	1	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	1
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Riverside Community Hospital**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion:** **September 8, 2004**
Local Point of Contact: **Donnette Baehr**		**Address:** **4445 Magnolia Avenue** **Riverside, CA 92501**
Title: **Director Emergency Services**		
Agency: Riverside Community Hospital		
Phone Number: (951) 788-3675		**E-Mail: donnette.baehr@hcahealthcare.com**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Riverside Community Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Riverside Community Hospital Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Riverside Community Hospital Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Riverside Community Hospital Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Riverside Community Hospital Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Riverside Community Hospital Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Riverside Community Hospital Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Riverside Community Hospital Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

SUBMITTING SCHOOL DISTRICTS

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Alvord Unified School District

RIVERSIDE COUNTY JURISDICTIONAL HAZARD INVENTORY

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Alvord Unified School District			
Type Agency/Jurisdiction:		School District			
Contact Person:	Title:	Interim Risk Manager			
First Name:	Sherry	Last Name:	Kaib		
Agency Address:	Street:	10365 Keller Avenue			
	City:	Riverside			
	State:	CA			
	Zip:	92505			
Contact Phone	951	509-5011	FAX	951 351-7554	
E-mail	skaib@alvord.k12.ca.us				

Population Served	22,000
Square Miles Served	7

Does your organization have a general plan?	Yes
Does your organization have a safety component to the general plan?	Yes
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	Yes
Do you have a recovery annex or section in your plan?	No
Do you have a terrorism/WMD annex or section in your plan?	No

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	No
AIRPORT NEXT TO JURISDICTION	Yes
DAIRY INDUSTRY	No
POULTRY INDUSTRY	No
CROPS/ORCHARDS	Yes
DAMS IN JURISDICTION	No
DAMS NEXT TO JURISDICTION	No
LAKE/RESERVOIR IN JURISDICTION	No
LAKE/RESERVOIR NEAR JURISDICTION	Yes
JURISDICTION IN FLOOD PLAIN	Yes
CONTROLLED FLOOD CONTROL CHANNEL	No
UNCONTROLLED FLOOD CONTROL CHANNEL	No
EARTHQUAKE FAULTS IN JURISDICTION	No
EARTHQUAKE FAULTS NEXT TO JURISDICTION	Yes
MOBILE HOME PARKS	Yes
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	No
ROADWAY CROSSING RIVER/STREAM	No
NON REINFORCED BUILDINGS	
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	Yes
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	Yes
FOREST AREA IN JURISDICTION	No
FOREST AREA NEXT TO JURISDICTION	No
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	No
MAJOR GAS/OIL PIPELINES IN JURISDICTION	Yes
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	No
RAILROAD TRACKS IN JURISDICTION	Yes
RAILROAD TRACKS NEXT TO JURISDICTION	Yes
HAZARDOUS WASTE FACILITIES IN JURISDICTION	No
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	No
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	No
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	No

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**Yes**
NEAR FLOOD PLAIN	**Yes**
NEAR RAILROAD TRACKS	**Yes**
NEAR A DAM	**Yes**
UPSTREAM FROM A DAM	**No**
DOWNSTREAM FROM A DAM	**Yes**
DOWNSTREAM OF A LAKE	**Yes**
DOWNSTREAM FROM A RESERVOIR	**No**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**No**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**No**
ON AN EARTHQUAKE FAULT	**No**
NEAR AN EARTHQUAKE FAULT	**Yes**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**No**
IN A FOREST AREA	**No**
NEAR A FOREST AREA	**No**
NEAR A MAJOR HIGHWAY	**Yes**
A HAZARDOUS WASTE FACILITY	**No**
NEAR A HAZARDOUS WASTE FACILITY	**No**
A HAZARDOUS STORAGE FACILITY	**No**
NEAR A HAZARDOUS STORAGE FACILITY	**No**
NON REINFORCED BUILDINGS	**No**
A MAJOR GAS/OIL PIPELINE	**No**
NEAR A MAJOR GAS/OIL PIPELINE	**Yes**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**No**
HAVE BEEN DAMAGED BY FLOOD	**No**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**No**
HAVE BEEN DAMAGED BY FOREST FIRE	**No**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**No**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**No**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**No**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	No
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	No
COULD BE CONSIDERED A BIO-HAZARD RISK	No

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Alvord Unified School District	Hazmat Storage Location	Hospital Chemical Storage	Yes	No
	Lake	Lake Mathews	No	Yes
	Railroad Track	Union Pacific	No	Yes
	Reservoir	Tilden	No	Yes
	River	Santa Ana River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Sherry Kaib AGENCY: Alvord Unified School District DATE: July 15, 2004

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	1	1	4
FLOOD	3	3	3	2	2
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	3	15
LANDSLIDES	2	3	2	2	14
INSECT INFESTATION	3	4	3	4	10
EXTREME SUMMER/WINTER WEATHER	2	4	2	4	6
SEVERE WIND EVENT	3	3	3	4	3
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	4	16
TERRORISM	4	2	4	2	17
OTHER MAN-MADE					
PIPELINE	2	3	2	3	5
AQUEDUCT	2	3	0	0	18
TRANSPORTATION	2	4	2	4	12
BLACKOUTS	3	4	3	4	11
HAZMAT ACCIDENTS	3	3	3	3	7
NUCLEAR ACCIDENT	4	2	4	2	9
TERRORISM	4	2	4	2	8
CIVIL UNREST	2	2	3	2	13
JAIL/PRISON EVENT	1	2	1	2	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
M	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
M	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections
M	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location

L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
H	Backup water supplies for hospitals
H	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
M	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
H	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
L	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
L	Redundancy
L	Mobile repeaters

FLOODS

L	Update development policies for flood plains
M	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete

L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
L	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
M	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
M	Hardening water towers
M	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
M	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
M	Traffic light protection
M	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
M	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment
L	Fire spotter program/red flag program

	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
L	Code enforcement
L	Codes prohibiting fireworks
L	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
L	Increase County Vector Control capacities
L	General public drought awareness
	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
M	Ease permitting process for building transmission lines
M	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement

L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
M	Create a SONGS regional planning group
	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
L	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
M	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
L	Public education
	◊ Bi-lingual signs
	◊ Blackout information
L	Notification system for rail traffic - container contents
L	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Alvord Unified School District
Contact: Sherry Kaib
Phone: (951) 509-5083

MITIGATION STRATEGY INFORMATION

Proposal Name:

Update of current disaster plan

Proposal Location:

10365 Keller Avenue, Riverside, CA 92505

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

We need to update our Disaster Preparedness Plan since it has not been updated since 1992. In conjunction with County OES we will up date our district wide and site Disaster Preparedness plan in coordination with our district and site administrators. We would also like to establish SEMS training in our district.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Alvord Unified School District		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __X__**	
Current Population in Jurisdiction or Served	19,000	Projected Population in Jurisdiction or Served - in 2010	21,000
Current Sq Miles in Jurisdiction or Served	30	Projected Sq Miles in Jurisdiction or Served - in 2010	30
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	3	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	3
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	21	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	25
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Alvord USD**	**Title/Lead Jurisdiction Of Multi-Jurisdictional Plan:** **Riverside County Operational Area**	**Date Of Completion:** **9/24/04**
Local Point Of Contact: **Sherry Kaib**	**Address:** **10365 Keller Ave** **Riverside, CA 92505-1349**	
Title: Risk Manager		
Agency: **Alvord USD**		
Phone Number: **(951) 509-5011**	**E-Mail:** **skaib@alvord.k12.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part 1, Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes - Part II Alvord Unified School District Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Dam failure Pgs 85 – 93 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Hazmat incidents Pgs 94 – 101 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Weather Pages 67 – 76 Part II Alvord Unified School District Section -		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part II Alvord Unified School District Section -	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part I, page 24-27 and Part II - Alvord Unified School District Section - Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Alvord Unified School District Section -	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Alvord Unified School District Section - Supplemental Questionnaire for	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Beaumont Unified School District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Beaumont Unified School District		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Director of Facilities Planning		
First Name:	Greg	Last Name:	Bowers	
Agency Address:	Street:	500 Grace Ave.		
	City:	Beaumont		
	State:	CA		
	Zip:	92223		
Contact Phone	951/845-1631		FAX	951/769-7527
E-mail	bgowers@beaumontusd.k12.ca.us			
Population Served	20,000	Square Miles Served		110

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	2/10/2004
Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2/10/2004
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**NO**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**NO**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**YES**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	YES
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Beaumont USD	Fault	unknown	Yes	Yes
Beaumont USD	Pipeline	unknown	Yes	Yes
Beaumont USD	Railroad Track	unknown	Yes	Yes

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Gregory J. Bowers AGENCY: Beaumont Unified School District DATE: September 30, 2004

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	3	3	5
FLOOD	3	3	3	3	4
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	3	3
LANDSLIDES	2	3	2	2	10
INSECT INFESTATION	3	4	2	3	9
EXTREME SUMMER/WINTER WEATHER	2	4	3	4	6
SEVERE WIND EVENT	3	3	4	4	2
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	3	3	11
TERRORISM	4	2	3	2	7
OTHER MAN-MADE					
PIPELINE	2	3	4	2	8
AQUEDUCT	2	3	2	2	15
TRANSPORTATION	2	4	2	2	14
BLACKOUTS	3	4	2	3	13
HAZMAT ACCIDENTS	3	3	3	3	12
NUCLEAR ACCIDENT	4	2	4	2	16
TERRORISM	4	2	3	2	17
CIVIL UNREST	2	2	2	2	18
JAIL/PRISON EVENT	1	2	1	2	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
H	Generate new literature for dissemination to:
H	◊ Government employees
NA	◊ Businesses
NA	◊ Hotel/motel literature
NA	◊ Local radio stations for education
NA	◊ Public education via utilities
NA	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
NA	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
NA	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
NA	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
NA	Install earthquake cutoffs at reservoirs
NA	Install earthquake-warning devices at critical facilities
NA	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
NA	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
NA	◊ Mobile home parks
NA	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)
NA	Pre - identify empty commercial space for seismic re-location
NA	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
NA	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
NA	Backup water supplies for hospitals

H	Evaluate pipeline seismic resiliency
NA	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
NA	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
H	Website with mitigation/contractor/retrofitting information
H	◊ Links to jurisdictions
H	◊ Alerting information
H	◊ Volunteer information
NA	Evaluate depths of aquifers/wells for adequacy during quakes
NA	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
H	Strengthen/harden
H	Relocate
H	Redundancy
H	Mobile repeaters

FLOODS

NA	Update development policies for flood plains
H	Public education on locations of flood plains
H	Develop multi-jurisdictional working group on floodplain management
NA	Develop greenbelt requirements in new developments
NA	Update weather pattern/flood plain maps
NA	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
NA	Required water flow/runoff plans for new development
NA	Perform GIS mapping of flood channels, etc.
H	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
NA	Create map of flood channels/diversions/water systems etc
H	Require digital floor plans on new non-residential construction
H	Upgrade dirt embankments to concrete
NA	Conduct countywide needs study on drainage capabilities
NA	Increase number of pumping stations
NA	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
H	◊ Evacuation documentation
H	◊ Re-examine historical flooding data for potential street re-design
H	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
H	◊ Publicize flood plain information (website?)

H	◊ Install warning/water level signage
H	◊ Enhanced public information
H	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
H	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
NA	Vegetation restoration programs
H	Ensure critical facilities are hardened/backed up
NA	Hardening water towers
NA	Terrorism Surveillance - cameras at reservoirs/dams
NA	Riverbed maintenance
NA	Evaluate existing lift stations for adequacy
H	Acquisition of property for on-site retention
H	Evaluate regulations on roof drainage mechanisms
NA	Erosion-resistant plants
NA	Traffic light protection
NA	Upkeep of diversionary devices
NA	Install more turn-off valves on pipelines
NA	Backup generation facilities
NA	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
H	◊ Networking of agencies for weed abatement
NA	Develop strategic plan for forest management
NA	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
NA	Identify hydrants with equipment ownership information
NA	Enhanced fire fighting equipment
NA	Fire spotter program/red flag program
NA	◊ Expand to other utilities
NA	Research on insect/pest mitigation technologies
NA	Volunteer home inspection program
H	Public education program
H	◊ Weather reporting/alerting
H	◊ Building protection
H	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
NA	Roofing materials/defensive spacing regulations
H	Community task forces for planning and education
NA	Fuel/dead tree removal
NA	Strategic pre-placement of fire fighting equipment
NA	Establish FEMA coordination processes based on ICS
NA	Brush clearings around repeaters
NA	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
NA	"Red Tag" homes in advance of event
NA	Provide fire-resistant gel to homeowners
NA	Involve insurance agencies in mitigation programs
NA	Clear out abandoned vehicles from oases
NA	Code enforcement
NA	Codes prohibiting fireworks
NA	Fuel modification/removal
NA	Evaluate building codes
H	Maintaining catch basins

OTHER HAZARDS

NA	Improve pipeline maintenance
H	Wetlands mosquito mitigation (West Nile Virus)
H	Insect control study
NA	Increase County Vector Control capacities
NA	General public drought awareness
NA	◊ Lawn watering rotation
NA	Develop County drought plan
NA	Mitigation of landslide-prone areas
NA	Develop winter storm sheltering plan
NA	Ease permitting process for building transmission lines
H	Evaluate restrictions on dust/dirt/generating activities during wind seasons
NA	Rotational crop planning/soil stabilization
NA	Enhance agricultural checkpoint enforcement
NA	Agriculture - funding of detection programs
H	Communications of pipeline maps (based on need to know)
H	Improved notification plan on runaway trains
NA	Improve/maintain blackout notification plan.
NA	Support business continuity planning for utility outages
NA	Terrorism training/equipment for first responders
NA	◊ Terrorism planning/coordination
NA	◊ Staffing for terrorism mitigation
NA	Create a SONGS regional planning group
NA	◊ Include dirty bomb planning
NA	Cooling stations - MOUs in place
NA	Fire Ant eradication program
NA	White Fly infestation abatement/eradication program
NA	Develop plan for supplemental water sources
NA	Public education on low water landscaping
NA	Salton Sea desalinization
NA	Establish agriculture security standards (focus on water supply)
NA	ID mutual aid agreements
NA	Vulnerability assessment on fiber-optic cable
NA	Upgrade valves on California aqueduct
H	Public education
H	◊ Bi-lingual signs
H	◊ Blackout information
NA	Notification system for rail traffic - container contents
NA	Control and release of terrorism intelligence
NA	Develop prison evacuation plan (shelter in place?)

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Beaumont Unified School District
Contact: Gregory J. Bowers, Executive Director of Facilities Planning
Phone: (951) 845-1631

MITIGATION STRATEGY INFORMATION

Proposal Name:

District-Wide Emergency Preparedness

Proposal Location:

All Beaumont Unified School District facilities including but not limited to all K-12 school campuses, alternative education campuses, adult education campuses, the District Office, Transportation, Maintenance and Operstions, and Child Nutritional Services sites.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
X	Development and implementation of mitigation education programs
	Development or improvement of warning systems
X	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

Each school and District facility within the District, on a regular basis and as required by law, participates in a District-wide disaster drill as well as individual site disaster drill. Included, but not limited to, these drills include duck and cover, fire drills, lock-downs, etc. as mandated by California law. In addition, the governing board has recently updated and adopted new policies and procedures that address mitigation strategies in the event of a disaster. Each year the board re-adopts the district wide Emergency Preparedness and conducts a District-wide drill involving all school facilities. Site staff are trained in Standardized Emergency Management System (SEMS) procedures as well as Safe School Plans that will be implemented in handling disaster/crisis situations.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

There is a definite continual need to train and prepare staff for a disaster or crisis situation. Planning through regularly scheduled drills and training with increase the implement action success in the event of a real emergency. Our main purpose is to be ready and able in the face of a disaster. Being prepared will result in a reduction in personal injury or death and property loss.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	x	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Beaumont Unified School District**	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____NO XXXX_**		
Current Population in Jurisdiction or Served	**5304**	Projected Population in Jurisdiction or Served - in 2010	**9845**
Current Sq Miles in Jurisdiction or Served	**110**	Projected Sq Miles in Jurisdiction or Served - in 2010	**110**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**Yes**	If yes, please list ordinance or regulation number. Board Policy 3516 (Emergencies & Preparedness Plan, Administrative Regulation 3516 (Emergencies & Disaster Preparedness Plan), AR 3516.1 (Fire Drills & Fires), AR 3516.2 (Bomb Treats), AR 3516.3 (Earthquake Procedure System), and AR 3516.5 (Emergency Schedules).	
What is the number one land issue your agency will face in the next five years	Acquisition of school sites due to land development and unprecedented growth.		
Approximate Number of Homes/Apts/etc.	**NA**	Projected Number of Homes/Apts/etc.- in 2010	**NA**
Approximate Total Residential Value	**NA**	Projected Residential Total Value - in 2010	**NA**
Approximate Number of Commercial Businesses	**NA**	Projected Number of Commercial Businesses - in 2010	**NA**
Approximate Percentage of Homes/Apts/etc in flood hazard zones	**NA**	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	**NA**
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	**NA**	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	**NA**
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	**NA**	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	**NA**
Approximate Percentage of Commercial Businesses in flood hazard zones	**NA**	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	**NA**
Approximate Percentage of Commercial Businesses in earthquake hazard zones	**NA**	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	**NA**
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	**NA**	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	**NA**
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**16**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**25**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**16**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**25**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**3**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**YES**	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? **YES**			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Beaumont USD**	**Title/Lead Jurisdiction Of Multi-Jurisdictional Plan:** **Riverside County Operational Area**	**Date Of Completion:** **9/24/04**
Local Point Of Contact: Gregory J. Bowers	**Address:** 500 Grace Ave. Beaumont, Ca. 92223	
Title: Executive Director Facilities Planning Department		
Agency: **Beaumont USD**		
Phone Number: (951) 845-1631, Ext. 338	**E-Mail:** gbowers@beaumontusd.k12.ca.us	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.

S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part 1, Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes - Part II Beaumont Unified School District Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Dam failure Pgs 85 – 93 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Hazmat incidents Pgs 94 – 101 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Weather Pages 67 – 76 Part II Beaumont Unified School District Section -		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part II Beaumont Unified School District Section -	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part I, page 24-27 and Part II - Beaumont Unified School District Section - Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Beaumont Unified School District Section -	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Beaumont Unified School District Section - Supplemental Questionnaire for	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Lake Elsinore Unified School District

RIVERSIDE COUNTY JURISDICTIONAL HAZARD INVENTORY

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Lake Elsinore Unified School District		
Type Agency/Jurisdiction:		School District		
Contact Person:	Title:	Safety Coordinator		
First Name:	Geneva	Last Name:	Krag	
Agency Address:	Street:	545 Chaney St.		
	City:	Lake Elsinore		
	State:	CA		
	Zip:	92530		
Contact Phone	951-253-7028		FAX	951-245-6609
E-mail	geneva.krag@leusd.k12.ca.us			

Population Served	20,000	Square Miles Served	124

Does your organization have a general plan?	yes
Does your organization have a safety component to the general plan?	yes
What year was your plan last updated?	2004

Does your organization have a disaster/emergency operations plan?	yes
What year was your plan last updated?	2004
Do you have a recovery annex or section in your plan?	no
Do you have a terrorism/WMD annex or section in your plan?	yes

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**yes**
AIRPORT NEXT TO JURISDICTION	
DAIRY INDUSTRY	
POULTRY INDUSTRY	
CROPS/ORCHARDS	
DAMS IN JURISDICTION	
DAMS NEXT TO JURISDICTION	**yes**
LAKE/RESERVOIR IN JURISDICTION	**yes**
LAKE/RESERVOIR NEAR JURISDICTION	
JURISDICTION IN FLOOD PLAIN	**yes**
CONTROLLED FLOOD CONTROL CHANNEL	
UNCONTROLLED FLOOD CONTROL CHANNEL	**yes**
EARTHQUAKE FAULTS IN JURISDICTION	
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**yes**
MOBILE HOME PARKS	
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON REINFORCED BUILDINGS	
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**yes**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	**yes**
FOREST AREA NEXT TO JURISDICTION	
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**yes**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	
RAILROAD TRACKS NEXT TO JURISDICTION	
HAZARDOUS WASTE FACILITIES IN JURISDICTION	
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**yes**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**yes**
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	**yes**
DOWNSTREAM OF A LAKE	**yes**
DOWNSTREAM FROM A RESERVOIR	**yes**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**yes**
ON AN EARTHQUAKE FAULT	**yes**
NEAR AN EARTHQUAKE FAULT	**yes**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**yes**
IN A FOREST AREA	**yes**
NEAR A FOREST AREA	**yes**
NEAR A MAJOR HIGHWAY	**yes**
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	**yes**
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	**yes**
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	**yes**
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	**yes**
DOWNSTREAM OF A LAKE	**yes**
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**yes**
ON AN EARTHQUAKE FAULT	**yes**
NEAR AN EARTHQUAKE FAULT	**yes**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**yes**
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	**yes**
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	**yes**
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	
COULD BE CONSIDERED A BIO-HAZARD RISK	

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
LAKE ELSINORE	Dam	Canyon Lake Dam	No	No
LAKE ELSINORE	Dam	Diamond Valley Lake Dam	No	No
LAKE ELSINORE	Dam	Lake Hemet Dam	No	No
LAKE ELSINORE	Dam	Lake Perris Dam	No	No
LAKE ELSINORE	Fault	Elsinore Fault	Yes	No
LAKE ELSINORE	Flood Channel	Lake Elsinore Outflow Channel	Yes	No
LAKE ELSINORE	Lake	Canyon Lake	No	Yes
LAKE ELSINORE	Lake	Lake Elsinore	Yes	No
LAKE ELSINORE	River	San Jacinto River	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Geneva Krag AGENCY: Lake Elsinore Unified School District DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	2	2	2
FLOOD	3	3	3	1	4
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	3	3
LANDSLIDES	2	3	0	0	5
INSECT INFESTATION	3	4	2	3	11
EXTREME SUMMER/WINTER WEATHER	2	4	1	1	13
SEVERE WIND EVENT	3	3	2	2	12
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	0	15
TERRORISM	4	2	1	1	14
OTHER MAN-MADE					
PIPELINE	2	3	0	0	17
AQUEDUCT	2	3	0	0	18
TRANSPORTATION	2	4	1	2	10
BLACKOUTS	3	4	2	2	8
HAZMAT ACCIDENTS	3	3	3	1	9
NUCLEAR ACCIDENT	4	2	4	2	19
TERRORISM	4	2	4	2	7
CIVIL UNREST	2	2	3	2	6
JAIL/PRISON EVENT	1	2	1	1	16
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

L	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
NA	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
NA	Evaluate re-enforcing reservoir concrete bases
NA	Evaluate EOCs for seismic stability
NA	Install earthquake cutoffs at reservoirs
NA	Install earthquake-warning devices at critical facilities
NA	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
NA	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
NA	Pre - identify empty commercial space for seismic re-location
NA	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
NA	Backup water supplies for hospitals

NA	Evaluate pipeline seismic resiliency
M	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
NA	Evaluate adequacy of reservoir capacity for sprinkler systems
NA	Training/standardization for contractors performing retrofitting
NA	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
NA	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
NA	Harden repeater sites
M	Continue existing interoperability project
NA	Strengthen/harden
NA	Relocate
NA	Redundancy
NA	Mobile repeaters

FLOODS

NA	Update development policies for flood plains
NA	Public education on locations of flood plains
NA	Develop multi-jurisdictional working group on floodplain management
NA	Develop greenbelt requirements in new developments
NA	Update weather pattern/flood plain maps
NA	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
NA	Required water flow/runoff plans for new development
NA	Perform GIS mapping of flood channels, etc.
NA	Install vehicular crossing gates/physical barriers for road closure
L	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
H	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
NA	Conduct countywide needs study on drainage capabilities
NA	Increase number of pumping stations
NA	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
NA	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)

	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
M	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
NA	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
NA	Hardening water towers
NA	Terrorism Surveillance - cameras at reservoirs/dams
NA	Riverbed maintenance
NA	Evaluate existing lift stations for adequacy
NA	Acquisition of property for on-site retention
NA	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
NA	Traffic light protection
NA	Upkeep of diversionary devices
NA	Install more turn-off valves on pipelines
NA	Backup generation facilities
NA	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
NA	Develop strategic plan for forest management
NA	Public education on wildfire defense
NA	Encourage citizen surveillance and reporting
NA	Identify hydrants with equipment ownership information
NA	Enhanced fire fighting equipment
NA	Fire spotter program/red flag program
	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
NA	Volunteer home inspection program
NA	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
NA	Roofing materials/defensive spacing regulations
H	Community task forces for planning and education
NA	Fuel/dead tree removal
NA	Strategic pre-placement of fire fighting equipment
NA	Establish FEMA coordination processes based on ICS
NA	Brush clearings around repeaters

NA	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
NA	"Red Tag" homes in advance of event
NA	Provide fire-resistant gel to homeowners
M	Involve insurance agencies in mitigation programs
NA	Clear out abandoned vehicles from oases
NA	Code enforcement
NA	Codes prohibiting fireworks
NA	Fuel modification/removal
NA	Evaluate building codes
NA	Maintaining catch basins

OTHER HAZARDS

NA	Improve pipeline maintenance
NA	Wetlands mosquito mitigation (West Nile Virus)
NA	Insect control study
NA	Increase County Vector Control capacities
NA	General public drought awareness
	◊ Lawn watering rotation
NA	Develop County drought plan
NA	Mitigation of landslide-prone areas
NA	Develop winter storm sheltering plan
NA	Ease permitting process for building transmission lines
NA	Evaluate restrictions on dust/dirt/generating activities during wind seasons
NA	Rotational crop planning/soil stabilization
NA	Enhance agricultural checkpoint enforcement
NA	Agriculture - funding of detection programs
NA	Communications of pipeline maps (based on need to know)
NA	Improved notification plan on runaway trains
NA	Improve/maintain blackout notification plan.
NA	Support business continuity planning for utility outages
NA	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
NA	Create a SONGS regional planning group
	◊ Include dirty bomb planning
NA	Cooling stations - MOUs in place
M	Fire Ant eradication program
NA	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
NA	Public education on low water landscaping
NA	Salton Sea desalinization
NA	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
NA	Vulnerability assessment on fiber-optic cable

NA	Upgrade valves on California aqueduct
M	Public education
	◊ Bi-lingual signs
	◊ Blackout information
NA	Notification system for rail traffic - container contents
NA	Control and release of terrorism intelligence
NA	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	Lake Elsinore Unified School District
Contact:	Geneva Krag, Safety Coordinator
Phone:	951-253-7028

MITIGATION STRATEGY INFORMATION

Proposal Name:

District-wide earthquake response training and functional drill

Proposal Location:

All school sites and district office locations in the District.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
X	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	Each school site has individually participated in duck, cover, hold drills, fire drills, and lockdown drills on a periodic basis as required by California law. Each school site staff has had training in the structure of SEMS and how it works. However, there has not been a mandatory district-wide coordinated earthquake response drill in over four years. The entire school district is in the immediate proximety of two major active earthquake faults.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

As a result of the Mitigation Assessment by District staff and as part of the District's mitigation effort to enhance it's disaster response capabilities and reduce the potential loss of lives to students and staff, the District has established a requirement for all District sites to participate in a yearly functional earthquake exercise during the month of September. 2004 will be the first of these yearly events and will be held on September 30, 2004. Before each yearly drill, there will be training of staff and pre-planning coordination to comply with the Standardized Emergency Management System Emergency Response Plans already in place at each site and the District Office.

The need for district-wide drill planning, training and execution is obvious. The costs of these drills are measured in employee time throughout the District, training materials, communications materials (radios) and disaster supplies and c-bins for the supplies. The Safety Coordinator's planning and training time is the most significant individual time investment. With nearly 2,000 full time employees, the investment in individual time for these drills adds up to a significant investment. The savings to the District and community as a whole is measured in loss control.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Lake Elsinore USD	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __XXX__**		
Current Population in Jurisdiction or Served	20,000	Projected Population in Jurisdiction or Served - in 2010	25,000
Current Sq Miles in Jurisdiction or Served	120	Projected Sq Miles in Jurisdiction or Served - in 2010	120
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	YES	If yes, please list ordinance or regulation number. Board Policy # 5142 and # 0451	
What is the number one land issue your agency will face in the next five years	Uncontrolled development within the district boundaries		
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	20	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	22
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	26	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	29
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	2	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	5
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?		Yes	

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: Lake Elsinore Unified School District	Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County Operational Area	Date of Completion: 9/24/04
Local Point of Contact: Geneva Krag	Address: 545 Chaney Street Lake Elsinore, CA. 92530	
Title: Safety Coordinator		
Agency: Lake Elsinore Unified School District		
Phone Number: (951) 245-8275	E-Mail: geneva.krag@leusd.k12.ca.us	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part 1, Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes - Part II Lake Elsinore USD Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
RISK ASSESSMENT				

Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Landslides Pgs 77 – 80 Dam failure Pgs 85 – 93 Hazmat incidents Pgs 94 – 101 Highway emergencies Pgs 102 – 110 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pgs 119 – 124 Part II Lake Elsinore USD Section -		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part II Lake Elsinore USD Section -	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part I, page 24-27 and Part II - Lake Elsinore USD Section - Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Lake Elsinore USD Section -	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Lake Elsinore USD Section - Supplemental Questionnaire for	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Moreno Valley Unified School District

LOCAL JURISDICTION HAZARD INVENTORY

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Moreno Valley USD		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Director		
First Name:	John	Last Name:	Baldaray	
Agency Address:	Street:	13911 Perris Blvd		
	City:	Moreno Valley		
	State:	CA		
	Zip:	92553		
Contact Phone	951 571-7827		FAX	
E-mail	jbaldaray@mvusd.k12.ca.us			

Population Served	37,817
Square Miles Served	50

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	9/5/2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	9/5/2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**NO**
AIRPORT NEXT TO JURISDICTION	**YES**
DAIRY INDUSTRY	**YES**
POULTRY INDUSTRY	**YES**
CROPS/ORCHARDS	**YES**
DAMS IN JURISDICTION	**YES**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**YES**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**YES**
UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**YES**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**NO**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**YES**
RAILROAD TRACKS IN JURISDICTION	**NO**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**YES**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**YES**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**YES**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**YES**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**YES**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	YES
NEAR A DAM	YES
UPSTREAM FROM A DAM	YES
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	YES
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	YES
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
Moreno Valley, USD	Dam	Lake Perris Dam	No	Yes
Moreno Valley, USD	Dam	Perris Dam	No	Yes
Moreno Valley, USD	Dam	Pigeon Pass Dam	Yes	No
Moreno Valley, USD	Fault	San Jacinto Fault	Yes	No
Moreno Valley, USD	Flood Channel	Oleander Channel	No	Yes
Moreno Valley, USD	Flood Channel	Perris Valley Channel	No	Yes
Moreno Valley, USD	Flood Channel	Quincy Flood Channel	Yes	No
Moreno Valley, USD	Hazmat Storage Location	Transportation Fuel	Yes	No
Moreno Valley, USD	Lake	Lake Perris	No	Yes
Moreno Valley, USD	Pipeline	High Pressure Gas Line	Yes	No
Moreno Valley, USD	Pipeline	Jet Fuel Line	Yes	No
Moreno Valley, USD	Railroad Track	Santa Fe Railroad	No	Yes
Moreno Valley, USD	Railroad Track	Union Pacific	No	Yes
Moreno Valley, USD	Reservoir	Poor Man's Reservoir	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: John Baldaray AGENCY: Moreno Valley USD DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**3**	**1**
WILDLAND FIRE	3	4	**1**	**4**	**5**
FLOOD	3	3	**1**	**2**	**9**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**1**	**3**	**16**
LANDSLIDES	2	3	**1**	**2**	**17**
INSECT INFESTATION	3	4	**0**	**2**	**19**
EXTREME SUMMER/WINTER WEATHER	2	4	**1**	**3**	**6**
SEVERE WIND EVENT	3	3	**1**	**3**	**18**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**2**	**3**	**15**
TERRORISM	4	2	**4**	**2**	**12**
OTHER MAN-MADE					
PIPELINE	2	3	**2**	**3**	**13**
AQUEDUCT	2	3	**2**	**3**	**14**
TRANSPORTATION	2	4	**2**	**3**	**10**
BLACKOUTS	3	4	**2**	**4**	**7**
HAZMAT ACCIDENTS	3	3	**2**	**3**	**4**
NUCLEAR ACCIDENT	4	2	**3**	**2**	**2**
TERRORISM	4	2	**4**	**2**	**3**
CIVIL UNREST	2	2	**1**	**2**	**8**
JAIL/PRISON EVENT	1	2	**1**	**2**	**11**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
M	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
M	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
M	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
M	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)

L	Pre - identify empty commercial space for seismic re-location
M	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
H	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
H	Backup water supplies for hospitals
H	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
H	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
H	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
H	Continue existing interoperability project
M	Strengthen/harden
M	Relocate
H	Redundancy
M	Mobile repeaters

FLOODS

H	Update development policies for flood plains
H	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
H	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction

M	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
M	Increase number of pumping stations
M	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
M	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
M	Hardening water towers
H	Terrorism Surveillance - cameras at reservoirs/dams
H	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
H	Traffic light protection
L	Upkeep of diversionary devices
H	Install more turn-off valves on pipelines
H	Backup generation facilities
H	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
H	Develop strategic plan for forest management
M	Public education on wildfire defense
L	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment

M	Fire spotter program/red flag program
	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
H	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
M	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
M	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
H	Involve insurance agencies in mitigation programs
M	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
M	Fuel modification/removal
H	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
H	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
L	Increase County Vector Control capacities
L	General public drought awareness
	◊ Lawn watering rotation
M	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
M	Rotational crop planning/soil stabilization

M	Enhance agricultural checkpoint enforcement
M	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
H	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
H	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
M	Public education on low water landscaping
L	Salton Sea desalinization
H	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
M	Upgrade valves on California aqueduct
H	Public education
	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	MORENO VALLEY USD
Contact:	JOHN BALDARAY
Phone:	951-571-7827

MITIGATION STRATEGY INFORMATION

Proposal Name:

COMMUNICATION MODIFICATION

Proposal Location:

ALL SCHOOLS WITHIN THE DISTRICT

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
X	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

The current communication system for district-wide emergency is severely lacking. The current system (besides normal equipment, i.e. phones, email, fax, etc.) consist of handheld radios that have proven to be inadequate during district-wide emergencies.

The communication traffic would limit the district quick reaction to those with immediate needs. Also, immediate and confidential communication with site administrators is almost nil.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The purpose of the proposal would be to update the School District's communication plan by researching how best to supplement or replace current equipment.

The proposal will include the review of our current plan and new technology to make communication more efficient and to help speed recovery.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

YES	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Moreno Valley USD		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO XXX**	
Current Population in Jurisdiction or Served	38000	Projected Population in Jurisdiction or Served - in 2010	42000
Current Sq Miles in Jurisdiction or Served	56	Projected Sq Miles in Jurisdiction or Served - in 2010	56
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	SITES FOR NEW SCHOOLS		
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones		Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	40	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	45
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	3	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Moreno Valley Unified School District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 15, 2004**
Local Point of Contact: **John Baldaray**	**Address:** **13911 Perris Blvd.** **Moreno Valley, CA 92553**	
Title: **Director, Warehouse/Emergency Operations**		
Agency: Moreno Valley Unified School District		
Phone Number: (951) 571-7827	**E-Mail: jbaldaray@mvusd.k12.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	

Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Part II, Moreno Valley Unified School District Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Moreno Valley Unified School District Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Moreno Valley Unified School District Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Moreno Valley Unified School District Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pages 28 – 40 Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Moreno Valley Unified School District Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Moreno Valley Unified School District Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Moreno Valley Unified School District Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Moreno Valley Unified School District Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Menifee Unified School District

RIVERSIDE COUNTY JURISDICTIONAL HAZARD INVENTORY

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Menifee Union School District		
Type Agency/Jurisdiction:		School District		
Contact Person:	Title:	Director of Facilities		
First Name:	Bruce	Last Name:	Shaw	
Agency Address:	Street:	30205 Menifee Rd		
	City:	Menifee		
	State:	CA		
	Zip:	92584		
Contact Phone	951-672-1851		FAX	951-672-1385
E-mail	bshaw@menifeeusd.k12.ca.us dwood@menifeeusd.k12.ca.us			

Population Served	Approx 40 k	Square Miles Served	56

Does your organization have a general plan?	Yes
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	N/A

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2004
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	YES
POULTRY INDUSTRY	YES
CROPS/ORCHARDS	YES
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	NO
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	UNK
BRIDGES IN FLOOD PLAIN	UNK
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	UNK
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	UNK
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	UNK
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	UNK
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	UNK

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**YES**
NEAR A HAZARDOUS WASTE FACILITY	**YES**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**YES**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	YES
DOWNSTREAM OF A LAKE	YES
DOWNSTREAM FROM A RESERVOIR	YES
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	YES
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	YES

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Menifee USD	Dam	Diamond Valey Lake	No	Yes
Menifee USD	Fault	Elsinore	Yes	No
Menifee USD	Flood Channel	Line G	Yes	No
Menifee USD	Lake	Diamond Valley Lake	No	Yes
Menifee USD	Lake	Lake Skinner	No	Yes
Menifee USD	River	Murrieta Creek	Yes	No
Menifee USD	Stream	Warm Springs	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Bruce Shaw AGENCY: Menifee Union School District DATE: 6-29-04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	2
WILDLAND FIRE	3	4	3	4	1
FLOOD	3	3	3	3	5
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	4	4
LANDSLIDES	2	3	2	2	12
INSECT INFESTATION	3	4	2	4	11
EXTREME SUMMER/WINTER WEATHER	2	4	3	4	3
SEVERE WIND EVENT	3	3	3	3	6
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	2	13
TERRORISM	4	2	4	3	16
OTHER MAN-MADE					
PIPELINE	2	3	2	2	8
AQUEDUCT	2	3	1	1	19
TRANSPORTATION	2	4	3	4	7
BLACKOUTS	3	4	3	4	9
HAZMAT ACCIDENTS	3	3	3	3	10
NUCLEAR ACCIDENT	4	2	4	2	18
TERRORISM	4	2	4	2	15
CIVIL UNREST	2	2	1	1	14
JAIL/PRISON EVENT	1	2	1	1	17
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
M	◊ Government employees
L	◊ Businesses
N/A	◊ Hotel/motel literature
M	◊ Local radio stations for education
L	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
N/A	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
L	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
M	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location

N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
N/A	◊ Alerting information
N/A	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
L	Harden repeater sites
H	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
M	Redundancy
H	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete

N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
H	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
H	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
N/A	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
H	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
N/A	Encourage citizen surveillance and reporting
H	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program

N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
N/A	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
N/A	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
N/A	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
M	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
N/A	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
N/A	Evaluate building codes
H	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
N/A	General public drought awareness
N/A	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement

N/A	Agriculture - funding of detection programs
N/A	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
N/A	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
N/A	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	Menifee Union School District
Contact:	Bruce Shaw
Phone:	951-672-1851

MITIGATION STRATEGY INFORMATION

Proposal Name:

Menifee Union School District

Proposal Location:

District-Wide

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
X	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History — List any previous disaster related events (dates, costs, etc)

N/A

Description of Mitigation Goal Narrative: Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

AS A PUBLIC AGENCY SERVING THE CHILDREN OF THIS COMMUNITY, WE MUST ALWAYS STRIVE TO CONTINUALLY DEVELOP AND IMPROVE OUR DISASTER PREPAREDNESS

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Menifee Union School District	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __X__**		
Current Population in Jurisdiction or Served	40,000	Projected Population in Jurisdiction or Served - in 2010	67,084
Current Sq Miles in Jurisdiction or Served	56	Projected Sq Miles in Jurisdiction or Served - in 2010	56
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. District Disaster Plan	
What is the number one land issue your agency will face in the next five years	Land acquisition for school sites		
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	0	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? Yes			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: Menifee Union School District	Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County Operational Area	Date of Completion: 9/24/04
Local Point of Contact: Bruce Shaw	Address: 30205 Menifee Road Menifee , CA . 92584	
Title: Facilities Coordinator		
Agency: Menifee Union School District		
Phone Number: (951) 672-1851	E-Mail: bshaw@menifeeusd.k12.ca.us	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part 1, Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		

Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes - Part II Menifee USD Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Landslides Pgs 77 – 80 Dam failure Pgs 85 – 93 Hazmat incidents Pgs 94 – 101 Highway emergencies Pgs 102 – 110 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pgs 119 – 124 Part II Menifee USD Section -		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part II Menifee USD Section -	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part I, page 24-27 and Part II - Menifee USD Section - Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Menifee USD Section -	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Menifee USD Section - Supplemental Questionnaire for	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Riverside Unified School District

RIVERSIDE COUNTY JURISDICTIONAL HAZARD INVENTORY

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Riverside Unified School District		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Assistant of Support-Operations		
First Name:	Kirk	Last Name:	Lewis	
Agency Address:	Street:	3380 14th Street		
	City:	Riverside		
	State:	Ca		
	Zip:	92501		
Contact Phone	951-788-7154		FAX	
E-mail	klewis@rusd.k12.ca.us			

Population Served	42,347
Square Miles Served	93

Does your organization have a general plan?	NO
Does your organization have a safety component to the general plan?	N/A
What year was your plan last updated?	N/A

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2004
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	
DAIRY INDUSTRY	
POULTRY INDUSTRY	
CROPS/ORCHARDS	
DAMS IN JURISDICTION	
DAMS NEXT TO JURISDICTION	
LAKE/RESERVOIR IN JURISDICTION	
LAKE/RESERVOIR NEAR JURISDICTION	**YES**
JURISDICTION IN FLOOD PLAIN	
CONTROLLED FLOOD CONTROL CHANNEL	
UNCONTROLLED FLOOD CONTROL CHANNEL	
EARTHQUAKE FAULTS IN JURISDICTION	
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON REINFORCED BUILDINGS	
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	
FOREST AREA NEXT TO JURISDICTION	
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**YES**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	
HAZARDOUS WASTE FACILITIES IN JURISDICTION	
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Riverside Unified School District				
	Lake	Lake Mathews	No	Yes
	Railroad Track	Union Pacific	No	Yes
	Reservoir	Tilden	No	Yes
	River	Santa Ana River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Kirk Lewis AGENCY: Riverside Unified School District DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**3**	**1**
WILDLAND FIRE	3	4	**2**	**2**	**16**
FLOOD	3	3	**2**	**3**	**8**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**2**	**3**	**9**
LANDSLIDES	2	3	**1**	**3**	**12**
INSECT INFESTATION	3	4	**3**	**3**	**17**
EXTREME SUMMER/WINTER WEATHER	2	4	**1**	**3**	**18**
SEVERE WIND EVENT	3	3	**1**	**3**	**19**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**3**	**3**	**15**
TERRORISM	4	2	**2**	**2**	**13**
OTHER MAN-MADE					
PIPELINE	2	3	**3**	**3**	**2**
AQUEDUCT	2	3	**1**	**3**	**7**
TRANSPORTATION	2	4	**2**	**3**	**10**
BLACKOUTS	3	4	**3**	**4**	**3**
HAZMAT ACCIDENTS	3	3	**4**	**3**	**4**
NUCLEAR ACCIDENT	4	2	**4**	**1**	**5**
TERRORISM	4	2	**3**	**2**	**6**
CIVIL UNREST	2	2	**4**	**2**	**11**
JAIL/PRISON EVENT	1	2	**1**	**1**	**14**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
H	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
M	◊ Hotel/motel literature
H	◊ Local radio stations for education
H	◊ Public education via utilities
H	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
L	Develop a dam inundation plan for new Diamond Valley Reservoir
H	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
L	◊ Mobile home parks
H	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
L	Incorporate County geologist data into planning

M	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
M	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
M	◊ Alerting information
L	◊ Volunteer information
I	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
M	Harden repeater sites
M	Continue existing interoperability project
M	Strengthen/harden
L	Relocate
M	Redundancy
M	Mobile repeaters

FLOODS

L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
L	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
L	Create map of flood channels/diversions/water systems etc
L	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete
L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided

M	◊ Publicize flood plain information (website?)
M	◊ Install warning/water level signage
H	◊ Enhanced public information
H	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
L	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
M	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
L	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
L	Enhanced fire fighting equipment
L	Fire spotter program/red flag program
L	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
M	Public education program
L	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
L	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS

L	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
M	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
L	Clear out abandoned vehicles from oases
M	Code enforcement
M	Codes prohibiting fireworks
L	Fuel modification/removal
L	Evaluate building codes
L	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
L	Increase County Vector Control capacities
M	General public drought awareness
M	◊ Lawn watering rotation
M	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
M	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement
M	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
M	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
L	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
M	Cooling stations - MOUs in place
L	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements

M	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
H	Public education
H	◊ Bi-lingual signs
H	◊ Blackout information
H	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Riverside Unified School District	
Contact:	Dr. Kirk Lewis
Phone:	(951) 788-7154

MITIGATION STRATEGY INFORMATION

Proposal Name:

Seismic Retrofit of School District Administration Building

Proposal Location:

3380 14th St., Riverside, CA 92501

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

The Administration Building for the school district was originally built approximately forty years ago. Since the original construction, the building has had several internal tenant improvements; however it has never been completely retrofitted to meet current earthquake standards. This building serves as the Emergency Operations Center for the district during any major event or major disaster. The building is located in an earthquake prone area of Riverside County. Should an earthquake of 6.5 or higher occur, the potential for significant structural failure of the building is high.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

The Administration Building would be evaluated to determine the amount of seismic retrofitting needed to bring the building up to current earthquake safety building codes. This study would include the general seismic structural stability of the building for a 6.5 earthquake. Upon completion of the study, funding sources would be identified for the seismic retrofitting.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

	Unfunded Proposal - funds are not available for the Proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Pre-Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Riverside Unified School District	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO XXX**		
Current Population in Jurisdiction or Served	**42,347**	Projected Population in Jurisdiction or Served - in 2010	**48,000**
Current Sq Miles in Jurisdiction or Served	**93**	Projected Sq Miles in Jurisdiction or Served - in 2010	**93**
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	**YES**	If yes, please list ordinance or regulation number. School District Disaster Plan	
What is the number one land issue your agency will face in the next five years	New School Site acquisition and development		
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	**0**	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	**0**
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	**49**	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	**56**
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	**0**	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	**0**
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	**YES**	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? YES			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: Riverside Unified School District	Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES	Date of Completion: September 15, 2004
Local Point of Contact: Dr. Kirk Lewis	Address: 3380 14th St. Riverside, CA 92501	
Title: Assistant Supt. - Operations		
Agency: Riverside Unified School District		
Phone Number: (951) 788-7154	E-Mail: klewis@rusd.k12.ca.us	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES	Part II, Riverside Unified School District Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Riverside Unified School District Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II Riverside Unified School District Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Riverside Unified School District Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pages 28 – 40 Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, Riverside Unified School District Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, Riverside Unified School District Section	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II Riverside Unified School District Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Riverside Unified School District Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

San Jacinto Unified School District

LOCAL JURISDICTION HAZARD INVENTORY

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		San Jacinto USD		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Maintenance Supervisor		
First Name:	Charles	Last Name:	Pilkington	
Agency Address:	Street:	2045 S. San Jacinto Ave.		
	City:	San Jacinto		
	State:	CA		
	Zip:	92583		
Contact Phone	951-654-7769		FAX	951-487-7771
E-mail	cpilkington@sanjacinto.k12.ca.us			

Population Served	6,713	Square Miles Served	100

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	3/1/2002

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	3/1/2002
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	YES
POULTRY INDUSTRY	YES
CROPS/ORCHARDS	YES
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	NO
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	NO
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	NO
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary				
Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
San Jacinto USD	Fault	San Jacinto Fault	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Charles Pilkington AGENCY: San Jacinto Unified School District DATE : 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**2**	**1**
WILDLAND FIRE	3	4	**1**	**2**	**3**
FLOOD	3	3	**2**	**2**	**2**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**1**	**3**	**6**
LANDSLIDES	2	3	**0**	**0**	**19**
INSECT INFESTATION	3	4	**0**	**0**	**18**
EXTREME SUMMER/WINTER WEATHER	2	4	**1**	**4**	**5**
SEVERE WIND EVENT	3	3	**1**	**3**	**4**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**1**	**2**	**12**
TERRORISM	4	2	**1**	**2**	**11**
OTHER MAN-MADE					
PIPELINE	2	3	**1**	**1**	**17**
AQUEDUCT	2	3	**1**	**1**	**16**
TRANSPORTATION	2	4	**1**	**2**	**13**
BLACKOUTS	3	4	**1**	**3**	**7**
HAZMAT ACCIDENTS	3	3	**1**	**1**	**15**
NUCLEAR ACCIDENT	4	2	**1**	**1**	**10**
TERRORISM	4	2	**3**	**2**	**9**
CIVIL UNREST	2	2	**2**	**2**	**8**
JAIL/PRISON EVENT	1	2	**1**	**2**	**14**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
M	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
M	◊ Public education via utilities
M	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
M	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
M	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
M	◊ Bridges/dams/pipelines
M	◊ Government buildings/schools
L	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location

L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
H	Mapping of liquefaction zones
H	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
M	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
M	Harden repeater sites
M	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
L	Redundancy
L	Mobile repeaters

FLOODS

H	Update development policies for flood plains
H	Public education on locations of flood plains
H	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
H	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
L	Upgrade dirt embankments to concrete

L	Conduct countywide needs study on drainage capabilities
L	Increase number of pumping stations
L	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
M	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
M	◊ Road closure compliance
M	◊ Shelter locations
M	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
L	Evaluate regulations on roof drainage mechanism
M	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
L	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
L	Develop strategic plan for forest management
L	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
L	Fire spotter program/red flag program

L	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
L	◊ Building protection
L	◊ Respiration
L	Pre-identify shelters/recovery centers/other resources
L	Roofing materials/defensive spacing regulations
L	Community task forces for planning and education
L	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
L	Establish FEMA coordination processes based on ICS
M	Brush clearings around repeaters
L	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
L	"Red Tag" homes in advance of event
L	Provide fire-resistant gel to homeowners
M	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
M	Code enforcement
M	Codes prohibiting fireworks
L	Fuel modification/removal
L	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

L	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
L	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
M	Evaluate restrictions on dust/dirt/generating activities during wind seasons
M	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement

L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
L	◊ Terrorism planning/coordination
L	◊ Staffing for terrorism mitigation
L	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
L	Cooling stations - MOUs in place
M	Fire Ant eradication program
L	White Fly infestation abatement/eradication program
L	Develop plan for supplemental water sources
L	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
L	Control and release of terrorism intelligence
L	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: San Jacinto Unified School District
Contact: Charles Pilkington
Phone: 951-654-7769

MITIGATION STRATEGY INFORMATION

Proposal Name:

New Emergency Operations Center Building/ Upgrade of Emegency Communications Systems

Proposal Location:

2045 S. San Jacinto Ave., San Jacinto, Ca. 92583

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

	List any previous disaster related events (dates, costs, etc)
Proposal/Event History	We need to build a new permanent building to replace the seventeen year old trailer now being used for the EOC and to upgrade existing emergency communications systems.

	Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.
Description of Mitigation Goal Narrative:	The purpose of this proposal would be to build a permanent building close to but separate from the District Office to be used as the Emergency Operations Center. Our existing EOC is an older trailer that isn't as natural disaster resistant as a permanent structure would be. Also we have members of R.A.C.E.S. housed in one end of the trailer and would like to get involvement with the Riverside County Sheriffs Department so space is an issue. We need to upgrade our emergency equipment, telephone and radio systems. We want better communication within the District but also the capability to communicate with county and state using the Western Disaster Network. With such a building during a disaster we would be better able to help not only our school district but also the community.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: San Jacinto USD	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __X__**		
Current Population in Jurisdiction or Served	7,400	Projected Population in Jurisdiction or Served - in 2010	10,800
Current Sq Miles in Jurisdiction or Served	100	Projected Sq Miles in Jurisdiction or Served - in 2010	100
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	no	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	The impact of new homes on the planned school site development		
Approximate Number of Homes/Apts/etc.	N/A	Projected Number of Homes/Apts/etc.- in 2010	N/A
Approximate Total Residential Value	N/A	Projected Residential Total Value - in 2010	N/A
Approximate Number of Commercial Businesses	N/A	Projected Number of Commercial Businesses - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in flood hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in flood hazard zones	N/A	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in earthquake hazard zones	N/A	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	N/A	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	N/A
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	16 sites	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	22 sites
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	16 sites	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	22 sites
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? Yes			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **San Jacinto Unified School District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 15, 2004**

Local Point of Contact: **Charles Pilkington**	**Address:** **2045 S. San Jacinto Ave.** **San Jacinto, Ca. 92583**
Title: **Maintenance Supervisor**	
Agency: San Jacinto Unified School District	
Phone Number: (951) 654-7769	**E-Mail: cpilkington@sanjacinto.k12.ca.us**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	**M**	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.	**M**	
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, San Jacinto Unified School District Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, San Jacinto Unified School District Section	**N**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	PART II San Jacinto Unified School District Section, Supplemental Questionnaire	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, San Jacinto Unified School District Section	**S**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pages 28 – 40 Flooding Pages 41 – 53 Earthquakes Pages 54 – 66 Weather Pages 67 – 76 Dam failure Pages 85 – 93 Hazmat incidents Pages 94 – 101 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Airline / airport emergencies Pages 102 – 110 Pipeline/Aqueduct incidents Pages 111 – 114 Blackout Pages 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Part II, San Jacinto Unified School District Section	**S**	
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Yes, Part II, San Jacinto Unified School District Section	**S**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**S**	

	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & PART II San Jacinto Unified School District Supplemental Questionnaire	**S**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, San Jacinto Unified School District Section	**N**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143	**S**	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**S**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143	**S**	

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Riverside County Office of Education, Children, and Family Services

LOCAL JURISDICTION HAZARD INVENTORY

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Riverside Co. Office of Education Children and Family Services		
Type Agency/Jurisdiction:		County Agency		
Contact Person:	Title:	Program Development Specialist		
First Name:	Larry	Last Name:	Hernandez	
Agency Address:	Street:	4164 Brockton Ave.		
	City:	Riverside		
	State:	CA		
	Zip:	92502-0868		
Contact Phone	951-826-6302		FAX	951-826-4479
E-mail	lhernandez@rcoe.k12.ca.us			

Population Served	10,000
Square Miles Served	7,200

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**YES**
DAIRY INDUSTRY	**YES**
POULTRY INDUSTRY	**YES**
CROPS/ORCHARDS	**YES**
DAMS IN JURISDICTION	**YES**
DAMS NEXT TO JURISDICTION	**YES**
LAKE/RESERVOIR IN JURISDICTION	**YES**
LAKE/RESERVOIR NEAR JURISDICTION	**YES**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**NO**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**YES**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Riverside Co. Educ Child & Family	Fault	lake elsinore	Yes	Yes
Riverside Co. Educ Child & Family	River	santa ana	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participant

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: L. Hernandez AGENCY: Riverside Co. Office of Education Children Family Svcs. DATE: 6-30-04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**4**	**3**	**1**
WILDLAND FIRE	3	4	**3**	**4**	**2**
FLOOD	3	3	**3**	**3**	**3**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**3**	**3**	**9**
LANDSLIDES	2	3	**1**	**1**	**17**
INSECT INFESTATION	3	4	**1**	**1**	**11**
EXTREME SUMMER/WINTER WEATHER	2	4	**2**	**4**	**3**
SEVERE WIND EVENT	3	3	**3**	**3**	**8**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**4**	**4**	**12**
TERRORISM	4	2	**1**	**1**	**15**
OTHER MAN-MADE					
PIPELINE	2	3	**1**	**1**	**12**
AQUEDUCT	2	3	**1**	**1**	**14**
TRANSPORTATION	2	4	**3**	**2**	**10**
BLACKOUTS	3	4	**3**	**4**	**6**
HAZMAT ACCIDENTS	3	3	**3**	**3**	**7**
NUCLEAR ACCIDENT	4	2	**1**	**1**	**8**
TERRORISM	4	2	**2**	**1**	**11**
CIVIL UNREST	2	2	**2**	**1**	**11**
JAIL/PRISON EVENT	1	2	**1**	**1**	**16**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
M	◊ Government employees
H	◊ Businesses
N/A	◊ Hotel/motel literature
L	◊ Local radio stations for education
N/A	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
N/A	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
N/A	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
M	◊ Government buildings/schools
L	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
N/A	Ensure Uniform Building Code compliance
N/A	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
N/A	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
N/A	◊ Alerting information
N/A	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
N/A	Continue existing interoperability project
	Strengthen/harden
H	Relocate
H	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
L	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
M	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
M	Increase sandbag distribution capacities
N/A	Develop pre-planned response plan for floods
H	◊ Evacuation documentation
H	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)

N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
N/A	Evaluate regulations on roof drainage mechanisms
N/A	Erosion-resistant plants
M	Traffic light protection
	Upkeep of diversionary devices
	Install more turn-off valves on pipelines
H	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

N/A	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
	Develop strategic plan for forest management
M	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
H	Volunteer home inspection program
H	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
N/A	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
N/A	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
N/A	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters

N/A	Research new technologies for identifying/tracking fires
N/A	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
N/A	Code enforcement
L	Codes prohibiting fireworks
N/A	Fuel modification/removal
N/A	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

N/A	Improve pipeline maintenance
	Wetlands mosquito mitigation (West Nile Virus)
	Insect control study
	Increase County Vector Control capacities
	General public drought awareness
	◊ Lawn watering rotation
	Develop County drought plan
	Mitigation of landslide-prone areas
	Develop winter storm sheltering plan
	Ease permitting process for building transmission lines
	Evaluate restrictions on dust/dirt/generating activities during wind seasons
	Rotational crop planning/soil stabilization
	Enhance agricultural checkpoint enforcement
	Agriculture - funding of detection programs
	Communications of pipeline maps (based on need to know)
	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
N/A	Terrorism training/equipment for first responders
N/A	◊ Terrorism planning/coordination
N/A	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
L	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
N/A	Develop plan for supplemental water sources
N/A	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
N/A	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
N/A	Public education
N/A	◊ Bi-lingual signs
M	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Riverside County Office of Education-Children and Family Services
Contact: Larry Hernandez
Phone: (951) 826-6673

MITIGATION STRATEGY INFORMATION

Proposal Name:

Earthquake Mitigation for Centerbased and State Preschool Programs

Proposal Location:

Riverside County

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History: List any previous disaster related events (dates, costs, etc)

Description of Mitigation Goal Narrative: Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

According to State licensing there is no enforcement for mitigation of pre-Kindegarden programs that fall under Title 22 regulations. Therefore it is our goal to retrofit any classroom with with the appropiate materials needed to reduce injury that may be caused by en earthquake event. At current the Children and Family Services Emergency Preparedness Program provides training for teachers and staff . Also there is a puppet show to train preK children in duck , cover and hold. Program is in its fifth year.It is our understanding that there is no other type of program similar in nature to ours throughout the state of California.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency: Riverside County Office of Education-CFS

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds
y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Riverside County Office of Education Children and Family Services	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO x**		
Current Population in Jurisdiction or Served	208,000	Projected Population in Jurisdiction or Served - in 2010	308,000
Current Sq Miles in Jurisdiction or Served	200,000	Projected Sq Miles in Jurisdiction or Served - in 2010	201,000
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	yes	If yes, please list ordinance or regulation number. Calif. Ed Code Title 22	
What is the number one land issue your agency will face in the next five years	costs		
Approximate Number of Homes/Apts/etc.	200,000	Projected Number of Homes/Apts/etc.- in 2010	300,000
Approximate Total Residential Value	2 billion	Projected Residential Total Value - in 2010	4 billion
Approximate Number of Commercial Businesses	100,000	Projected Number of Commercial Businesses - in 2010	200,000
Approximate Percentage of Homes/Apts/etc in flood hazard zones	25%	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	30%
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	100%	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	100%
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	20%	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	30%
Approximate Percentage of Commercial Businesses in flood hazard zones	10%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	20%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	5%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	10%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	25%	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	35%
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	100%	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	100%
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	5%	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	10%
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes? yes			

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Riverside County Office of Education-Children and Family Services**	**Title/Lead Jurisdiction Of Multi-Jurisdictional Plan:** **Riverside County Operational Area**	**Date Of Completion:** **9/24/04**
Local Point Of Contact: **Larry Hernandez**	**Address:** **3939 Thirteenth Street** **Riverside, CA 92502**	
Title: **Program Development Specialist-Emergency Services**		
Agency: **Riverside County Office of Education-Children and Family Services**		
Phone Number: **(951) 826-6302**	**E-Mail:** **lhernandez@rcoe.k12.ca.us**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part 1, Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes - Part II Riverside Co. Office of Education Children's Services Unit Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Dam failure Pgs 85 – 93 Transportation Incidents Pages 102 – 110 Rail line emergencies Pages 102 – 110 Hazmat incidents Pgs 94 – 101 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pages 119 – 124 Nuclear incidents Pages 125 – 128 Terrorism Pages 135 – 139 Weather Pages 67 – 76 Part II Riverside Co. Office of Education Children's Services Unit Section -		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part II Riverside Co. Office of Education Children's Services Unit Section -	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part I, page 24-27 and Part II - Riverside Co. Office of Education Children's Services Unit Section - Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Riverside Co. Office of Education Children's Services Unit Section -	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Riverside Co. Office of Education Children's Services Unit Section - Supplemental Questionnaire for	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II, Riverside Co. Office of Education Children's Services Unit Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & Riverside Co. Office of Education Children's Services Unit Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Riverside Co. Office of Education Children's Services Unit Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

SUBMITTING
SPECIAL DISTRICTS

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

SPECIAL FIRE DISTRICTS

Idyllwild Fire Protection District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Idyllwild Fire Protection District		
Type Agency/Jurisdiction:		Fire Protection District		
Contact Person:	Title:	Fire Chief		
First Name:	Michael	Last Name:	Norris	
Agency Address:	Street:	P.O. Box 656		
	City:	Idyllwild		
	State:	CA		
	Zip:	92549-0656		
Contact Phone	(951) 659-2153		FAX	(951) 659-2153
E-mail	Mikenorris@idyllwildfire.org			

Population Served	3000
Square Miles Served	5

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	2003

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2003
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

	YES
AIRPORT IN JURISDICTION	No
AIRPORT NEXT TO JURISDICTION	No
DAIRY INDUSTRY	No
POULTRY INDUSTRY	No
CROPS/ORCHARDS	No
DAMS IN JURISDICTION	No
DAMS NEXT TO JURISDICTION	No
LAKE/RESERVOIR IN JURISDICTION	No
LAKE/RESERVOIR NEAR JURISDICTION	Yes
JURISDICTION IN FLOOD PLAIN	No
CONTROLLED FLOOD CONTROL CHANNEL	NO
UNCONTROLLED FLOOD CONTROL CHANNEL	No
EARTHQUAKE FAULTS IN JURISDICTION	No
EARTHQUAKE FAULTS NEXT TO JURISDICTION	Yes
MOBILE HOME PARKS	Yes
NON-REINFORCED FREEWAY BRIDGES	No
NON-REINFORCED BRIDGES	No
BRIDGES IN FLOOD PLAIN	No
BRIDGES OVER OR ACROSS RIVER/STREAM	Yes
ROADWAY CROSSING RIVER/STREAM	No
NON REINFORCED BUILDINGS	Yes
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	No
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	No
FOREST AREA IN JURISDICTION	Yes
FOREST AREA NEXT TO JURISDICTION	Yes
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	No
MAJOR GAS/OIL PIPELINES IN JURISDICTION	No
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	No
RAILROAD TRACKS IN JURISDICTION	No
RAILROAD TRACKS NEXT TO JURISDICTION	No
HAZARDOUS WASTE FACILITIES IN JURISDICTION	No
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	No
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	Yes
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	Yes

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

	YES
IN A FLOOD PLAIN	No
NEAR FLOOD PLAIN	No
NEAR RAILROAD TRACKS	No
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	No
DOWNSTREAM OF A LAKE	Yes
DOWNSTREAM FROM A RESERVOIR	Yes
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	Yes
NEAR A FOREST AREA	Yes
NEAR A MAJOR HIGHWAY	Yes
A HAZARDOUS WASTE FACILITY	No
NEAR A HAZARDOUS WASTE FACILITY	No
A HAZARDOUS STORAGE FACILITY	Yes
NEAR A HAZARDOUS STORAGE FACILITY	Yes
NON REINFORCED BUILDINGS	Yes
A MAJOR GAS/OIL PIPELINE	No
NEAR A MAJOR GAS/OIL PIPELINE	No

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	NO
HAVE BEEN DAMAGED BY FLOOD	No
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	No
HAVE BEEN DAMAGED BY FOREST FIRE	No
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	No
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	No
HAVE BEEN IMPACTED BY A PIPELINE EVENT	No

EMERGENCY OPERATIONS INFORMATION	YES
DOES YOUR ORGANIZATION HAVE AN EOC	Yes
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	No
NEAR FLOOD PLAIN	No
NEAR RAILROAD TRACKS	No
NEAR A DAM	No
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	No
DOWNSTREAM OF A LAKE	No
DOWNSTREAM FROM A RESERVOIR	No
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	No
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	No
ON AN EARTHQUAKE FAULT	No
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	No
IN A FOREST AREA	Yes
NEAR A FOREST AREA	Yes
NEAR A MAJOR HIGHWAY	Yes
A HAZARDOUS WASTE FACILITY	No
NEAR A HAZARDOUS WASTE FACILITY	No
A HAZARDOUS STORAGE FACILITY	No
NEAR A HAZARDOUS STORAGE FACILITY	Yes
NON REINFORCED BUILDINGS	Yes
A MAJOR GAS/OIL PIPELINE	No
NEAR A MAJOR GAS/OIL PIPELINE	No

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	Yes
COULD BE CONSIDERED A BIO-HAZARD RISK	No

Specific Hazards Summary				
Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Idyllwild Fire Protection Dist.	Wildland Fire	Various Vegetation	Yes	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Michael Norris AGENCY: Idyllwild Fire Protection District DATE: August 31, 2004

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	4
WILDLAND FIRE	3	4	4	4	1
FLOOD	3	3	2	2	15
OTHER NATURAL HAZARDS					
DROUGHT	3	3	4	4	2
LANDSLIDES	2	3	2	2	11
INSECT INFESTATION	3	4	4	4	3
EXTREME SUMMER/WINTER WEATHER	2	4	3	3	9
SEVERE WIND EVENT	3	3	3	4	7
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	2	14
TERRORISM	4	2	4	4	5
OTHER MAN-MADE					
PIPELINE	2	3	0	0	17
AQUEDUCT	2	3	0	0	18
TRANSPORTATION	2	4	2	2	12
BLACKOUTS	3	4	2	2	13
HAZMAT ACCIDENTS	3	3	4	3	8
NUCLEAR ACCIDENT	4	2	4	1	10
TERRORISM	4	2	4	4	6
CIVIL UNREST	2	2	1	1	16
JAIL/PRISON EVENT	1	2	0	0	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
L	◊ Government employees
M	◊ Businesses
M	◊ Hotel/motel literature
M	◊ Local radio stations for education
M	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
N/A	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
H	◊ Mobile home parks
M	Develop educational materials on structural reinforcement and home inspections
H	Ensure Uniform Building Code compliance
H	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
M	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals

N/A	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
H	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
L	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
L	◊ Alerting information
L	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
H	Continue existing interoperability project
H	Strengthen/harden
H	Relocate
H	Redundancy
H	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
H	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
M	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
L	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
L	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
H	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
M	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
H	◊ Evacuation documentation
H	◊ Re-examine historical flooding data for potential street re-design
H	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
M	◊ Publicize flood plain information (website?)
H	◊ Install warning/water level signage
H	◊ Enhanced public information
H	◊ Road closure compliance
H	◊ Shelter locations
H	◊ Pre-event communications
	Look at County requirements for neighborhood access
H	◊ Secondary means of ingress/egress
L	Vegetation restoration programs
H	Ensure critical facilities are hardened/backed up
H	Hardening water towers
H	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
L	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
L	Traffic light protection
L	Upkeep of diversionary devices
L	Install more turn-off valves on pipelines
M	Backup generation facilities
H	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
H	◊ Networking of agencies for weed abatement
H	Develop strategic plan for forest management
H	Public education on wildfire defense
H	Encourage citizen surveillance and reporting
H	Identify hydrants with equipment ownership information
H	Enhanced fire fighting equipment
H	Fire spotter program/red flag program
H	◊ Expand to other utilities
H	Research on insect/pest mitigation technologies
H	Volunteer home inspection program
H	Public education program
H	◊ Weather reporting/alerting
H	◊ Building protection
H	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
H	Roofing materials/defensive spacing regulations
H	Community task forces for planning and education
H	Fuel/dead tree removal
H	Strategic pre-placement of fire fighting equipment
H	Establish FEMA coordination processes based on ICS
H	Brush clearings around repeaters
H	Research new technologies for identifying/tracking fires
H	Procure/deploy backup communications equipments
H	"Red Tag" homes in advance of event
H	Provide fire-resistant gel to homeowners
H	Involve insurance agencies in mitigation programs
H	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
H	Fuel modification/removal
H	Evaluate building codes
H	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
L	Wetlands mosquito mitigation (West Nile Virus)
L	Insect control study
L	Increase County Vector Control capacities
L	General public drought awareness
L	◊ Lawn watering rotation
L	Develop County drought plan
L	Mitigation of landslide-prone areas
L	Develop winter storm sheltering plan
L	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
L	Rotational crop planning/soil stabilization
L	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
L	Improved notification plan on runaway trains
L	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
H	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
L	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
H	ID mutual aid agreements
H	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Blackout information
L	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Idyllwild Fire Protection District
Contact: Mike Norris
Phone: 951-659-2153

MITIGATION STRATEGY INFORMATION

Proposal Name:

Seismic Retrofit of Fire Station

Proposal Location:

Idyllwild Fire Protection District Fire Station

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	The IFPD's has only one fire station in the district. This station provides primary fire and medical response to this mountain community. The station was build in the early 1980's and has not been reviewed for seismic stability since construction. The Fire Station is located between two major faults in Riverside County. Should a earthquake of 6.5 or higher occur on either fault, the effect on the community of Idyllwild could be disastrous. With this being the only fire station in this mountainous area, an earthquake causing damage the station to a point that fire personnel or equipment are not able to respond, would greatly endanger all of the residents in this community.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the Proposal, any history related to the Proposal. List the activities necessary for its completion in the narrative section below.

The fire station would be evaluated to determine the amount of seismic retrofitting needed to bring the building up to current earthquake safety building codes. This study would include the general seismic structural stability of the building for a 6.5 earthquake. The study would also determine the stability of the equipment bay doors to determine if they would remain operational in a 6.5 earthquake. Upon completion of the study, funding sources would be identified for the seismic retrofitting.

Does your jurisdiction have primary responsibility for the Proposal? If not, what agency does?

Yes	X	No		

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this Proposal

	Unfunded Proposal - funds are not available for the Proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Yes	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Idyllwild Fire Protection District		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES ____ NO _X_**	
Current Population in Jurisdiction or Served	3,000	Projected Population in Jurisdiction or Served - in 2010	4,500
Current Sq Miles in Jurisdiction or Served	5 Sq miles	Projected Sq Miles in Jurisdiction or Served - in 2010	4 Sq miles
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	No	If yes, please list ordinance or regulation number. Covered under the County of Riverside Ordinances	
What is the number one land issue your agency will face in the next five years		Expansion of residential and commercial locations within the fire interface zone	
Approximate Number of Homes/Apts/etc.	1500	Projected Number of Homes/Apts/etc.- in 2010	1800
Approximate Total Residential Value	$3.75 million	Projected Residential Total Value - in 2010	$ 5 million
Approximate Number of Commercial Businesses	100	Projected Number of Commercial Businesses - in 2010	135
Approximate Percentage of Homes/Apts/etc in flood hazard zones	0	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	0
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	100%	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	100%
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	100%	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in flood hazard zones	0	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	0
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	100%	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	100%
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	4	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	4
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	4	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	4
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Idyllwild Fire Protection District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County**	**Date of Completion:** **9/14/04**
Local Point of Contact:	**Address:** Idyllwild Fire Protection District 54160 Maranatha Dr. PO Box 656 Idyllwild, CA 92549-0656	
Title: **Mike Norris, Fire Chief**		
Agency: **Idyllwild Fire Protection District**		
Phone Number: **(951) 659-2153**	**E-Mail: mikenorris@idyllwildfire.org**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	Part I pages 3-7	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes Part II Idyllwild Fire Protection District Section Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Yes Part II Idyllwild Fire Protection District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Landslides Pgs 77 – 80 Insect Infestation Pgs 81 – 84 Hazmat incidents Pgs 94 – 101 Highway emergencies Pgs 102 – 110 Blackout Pgs 115 – 118 Terrorism Pgs 135 – 139 Part II Idyllwild Fire Protection District Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[Yes]** If yes, where in MJP: Part II Idyllwild Fire Protection District Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part II Idyllwild Fire Protection District Section	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part II Idyllwild Fire Protection District Section	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part II Idyllwild Fire Protection District Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part II Idyllwild Fire Protection District Section Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Part II Idyllwild Fire Protection District Section Hazard Mitigation Strategy Proposal	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I pages 38-101		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part II Idyllwild Fire Protection District Section Supplemental Questionnaire	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.			

JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Elsinore Valley Municipal Water District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Elsinore Valley Municipal Water District		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Director of Human Resources		
First Name:	David	Last Name:	Bell	
Agency Address:	Street:	31315 Chaney		
	City:	Lake Elsinore		
	State:	CA		
	Zip:	92531		
Contact Phone	951-674-3146		FAX	951-674-8376
E-mail	dbell@evmwd.net			

Population Served	100,000
	96

Does your organization have a general plan?	Yes
Does your organization have a safety component to the general plan?	Yes
What year was your plan last updated?	2003

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	2004
Do you have a recovery annex or section in your plan?	Yes
Do you have a terrorism/WMD annex or section in your plan?	Yes

HAZARD IDENTIFICATION QUESTINNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**No**
AIRPORT NEXT TO JURISDICTION	**No**
DAIRY INDUSTRY	**No**
POULTRY INDUSTRY	**No**
CROPS/ORCHARDS	**Yes**
DAMS IN JURISDICTION	**Yes**
DAMS NEXT TO JURISDICTION	**Yes**
LAKE/RESERVOIR IN JURISDICTION	**Yes**
LAKE/RESERVOIR NEAR JURISDICTION	**Yes**
JURISDICTION IN FLOOD PLAIN	**Yes**
CONTROLLED FLOOD CONTROL CHANNEL	**Yes**
UNCONTROLLED FLOOD CONTROL CHANNEL	**Yes**
EARTHQUAKE FAULTS IN JURISDICTION	**Yes**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**Yes**
MOBILE HOME PARKS	**Yes**
NON-REINFORCED FREEWAY BRIDGES	**No**
NON-REINFORCED BRIDGES	**No**
BRIDGES IN FLOOD PLAIN	**Yes**
BRIDGES OVER OR ACROSS RIVER/STREAM	**Yes**
ROADWAY CROSSING RIVER/STREAM	**Yes**
NON REINFORCED BUILDINGS	**No**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**Yes**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**Yes**
FOREST AREA IN JURISDICTION	**Yes**
FOREST AREA NEXT TO JURISDICTION	**Yes**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**Yes**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**Yes**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**Yes**
RAILROAD TRACKS IN JURISDICTION	**Yes**
RAILROAD TRACKS NEXT TO JURISDICTION	**Yes**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**Yes**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**Yes**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**Yes**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**Yes**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

	YES
IN A FLOOD PLAIN	Yes
NEAR FLOOD PLAIN	Yes
NEAR RAILROAD TRACKS	Yes
NEAR A DAM	Yes
UPSTREAM FROM A DAM	Yes
DOWNSTREAM FROM A DAM	Yes
DOWNSTREAM OF A LAKE	Yes
DOWNSTREAM FROM A RESERVOIR	Yes
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	Yes
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	Yes
ON AN EARTHQUAKE FAULT	Yes
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	Yes
IN A FOREST AREA	Yes
NEAR A FOREST AREA	Yes
NEAR A MAJOR HIGHWAY	Yes
A HAZARDOUS WASTE FACILITY	Yes
NEAR A HAZARDOUS WASTE FACILITY	Yes
A HAZARDOUS STORAGE FACILITY	Yes
NEAR A HAZARDOUS STORAGE FACILITY	Yes
NON REINFORCED BUILDINGS	No
A MAJOR GAS/OIL PIPELINE	No
NEAR A MAJOR GAS/OIL PIPELINE	Yes

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	No
HAVE BEEN DAMAGED BY FLOOD	No
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	No
HAVE BEEN DAMAGED BY FOREST FIRE	No
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	No
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	No
HAVE BEEN IMPACTED BY A PIPELINE EVENT	No

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	Yes
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	No
NEAR FLOOD PLAIN	Yes
NEAR RAILROAD TRACKS	No
NEAR A DAM	No
UPSTREAM FROM A DAM	No
DOWNSTREAM FROM A DAM	No
DOWNSTREAM OF A LAKE	No
DOWNSTREAM FROM A RESERVOIR	No
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	No
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	Yes
ON AN EARTHQUAKE FAULT	Yes
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	Yes
IN A FOREST AREA	No
NEAR A FOREST AREA	Yes
NEAR A MAJOR HIGHWAY	Yes
A HAZARDOUS WASTE FACILITY	Yes
NEAR A HAZARDOUS WASTE FACILITY	Yes
A HAZARDOUS STORAGE FACILITY	No
NEAR A HAZARDOUS STORAGE FACILITY	No
NON REINFORCED BUILDINGS	No
A MAJOR GAS/OIL PIPELINE	No
NEAR A MAJOR GAS/OIL PIPELINE	No

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	Yes
COULD BE CONSIDERED A BIO-HAZARD RISK	Yes

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Elsinore Valley MWD	Dam	Canyon Lake Dam	No	No
Elsinore Valley MWD	Dam	Diamond Valley Lake Dam	No	No
Elsinore Valley MWD	Dam	Lake Hemet Dam	No	No
Elsinore Valley MWD	Dam	Lake Perris Dam	No	No
Elsinore Valley MWD	Fault	Elsinore Fault	Yes	No
Elsinore Valley MWD	Flood Channel	Lake Elsinore Outflow Channel	Yes	No
Elsinore Valley MWD	Lake	Canyon Lake	No	Yes
Elsinore Valley MWD	Lake	Lake Elsinore	Yes	No
Elsinore Valley MWD	River	San Jacinto River	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: David Bell AGENCY: Elsinore Valley Municipal Water District DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	3	3	1
WILDLAND FIRE	3	4	2	2	4
FLOOD	3	3	2	2	3
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	2	2
LANDSLIDES	2	3	1	1	15
	3	4	1	1	16
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	7
SEVERE WIND EVENT	3	3	1	1	8
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	1	1	14
TERRORISM	4	2	1	1	13
OTHER MAN-MADE					
PIPELINE	2	3	1	2	5
AQUEDUCT	2	3	0	0	12
TRANSPORTATION	2	4	0	0	17
BLACKOUTS	3	4	1	2	9
HAZMAT ACCIDENTS	3	3	1	2	11
NUCLEAR ACCIDENT	4	2	2	2	10
TERRORISM	4	2	3	1	6
CIVIL UNREST	2	2	0	0	18
JAIL/PRISON EVENT	1	2	0	0	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
N/A	◊ Government employees
N/A	◊ Businesses
N/A	◊ Hotel/motel literature
N/A	◊ Local radio stations for education
N/A	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
N/A	◊ Training and maintenance
N/A	Procure earthquake-warning devices for critical facilities
L	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
N/A	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
N/A	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals

M	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
N/A	◊ Alerting information
N/A	◊ Volunteer information
H	Evaluate depths of aquifers/wells for adequacy during quakes
H	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
H	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
N/A	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)

N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
N/A	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
N/A	Evaluate regulations on roof drainage mechanisms
N/A	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
N/A	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

N/A	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
N/A	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
N/A	◊ Respiration
N/A	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
N/A	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
N/A	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters

N/A	Research new technologies for identifying/tracking fires
N/A	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
N/A	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
N/A	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
	General public drought awareness
H	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
L	Agriculture - funding of detection programs
	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
H	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
N/A	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable

N/A	Upgrade valves on California aqueduct
N/A	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Elsinore Valley Municipal Water District
Contact: David Bell
Phone: 951-294-1382

MITIGATION STRATEGY INFORMATION

Proposal Name:

Loss of single point-of failure

Proposal Location:

Booster stations, reservoir or distribution system pipeline within the District's service area.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
X	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

This event would typically occur when a booster station or reservoir serving one of the ridge zones is lost, and there is no regularly connected alternative facility serving the same zone. This has not occurred within the district; however, given the fact that we are located in a high earthquake zone, we need to address this situation.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

For the district facilities, update the SCADA system to ensure that all failures due to an earthquake will be detected.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	Y	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: Elsinore Valley Municipal Water District		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __XX__**	
Current Population in Jurisdiction or Served	100, 000	Projected Population in Jurisdiction or Served - in 2010	140,000
Current Sq Miles in Jurisdiction or Served	96	Projected Sq Miles in Jurisdiction or Served - in 2010	96
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	No	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	N/A		
Approximate Number of Homes/Apts/etc.	None	Projected Number of Homes/Apts/etc.- in 2010	None
Approximate Total Residential Value	N/A	Projected Residential Total Value - in 2010	N/A
Approximate Number of Commercial Businesses	None	Projected Number of Commercial Businesses - in 2010	None
Approximate Percentage of Homes/Apts/etc in flood hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in flood hazard zones	N/A	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in earthquake hazard zones	N/A	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	N/A	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	N/A
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	20	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	20
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	7	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	7
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	13	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	13
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Elsinore Valley Municipal Water District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan:** **Riverside County OES**	**Date of Completion:** **September 10, 2004**
Local Point of Contact: **David Bell**	**Address:** **31315 Chaney Street** **Lake Elsinore, CA 92531**	
Title: **Director of Human Resources**		
Agency: **Elsinore Valley Municipal Water District**		
Phone Number: **951-294-1382**	**E-Mail:** **dbell@evmwd.net**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II - EVMWD	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Part II - EVMWD Supplemental Questionnaire - No ordinances	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part ! Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Dam failure Pgs 85 – 93 Hazmat incidents Pgs 94 – 101 Highway emergencies Pgs 102 – 110 Rail line emergencies Pgs 102 – 110 Airline / airport emergencies Pgs 102 – 110 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Toxic pollution Pgs 119 – 124 Nuclear incidents Pgs 125 – 128 Terrorism Pgs 135 – 139		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II, EVMWD Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	

	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & EVMWD Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, EVMWD Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Home Gardens County Water District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Home Gardens County Water District		
Type Agency/Jurisdiction:		Special District		
Contact Person:	Title:	General Manager		
First Name:	Karl	Last Name:	Schalow	
Agency Address:	Street:	3832 N. Grant St		
	City:	Corona		
	State:	CA		
	Zip:	92879		
Contact Phone	951-737-4741		FAX	951-737-9478
E-mail	HGCWD@PCMAJIC.NET			

Population Served	3,033	Square Miles Served	4.1

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	1986

Does your organization have a disaster/emergency operations plan?	NO
What year was your plan last updated?	
Do you have a recovery annex or section in your plan?	
Do you have a terrorism/WMD annex or section in your plan?	

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	
AIRPORT NEXT TO JURISDICTION	
DAIRY INDUSTRY	
POULTRY INDUSTRY	
CROPS/ORCHARDS	
DAMS IN JURISDICTION	
DAMS NEXT TO JURISDICTION	
LAKE/RESERVOIR IN JURISDICTION	
LAKE/RESERVOIR NEAR JURISDICTION	
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	
EARTHQUAKE FAULTS IN JURISDICTION	
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	
FOREST AREA NEXT TO JURISDICTION	
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	YES
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	NO
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
Home Gardens County WD	Dam	Lake Mathews	No	Yes
	Dam	Prado	No	Yes
	Fault	Elsinore	Yes	Yes
	Flood Channel	Mabey Canyon	Yes	No
	Flood Channel	Temescal Creek	Yes	Yes
	Hazmat Manufacturing Facility	Corona Energy Partners	No	Yes
	Hazmat Manufacturing Facility	Corona Products	No	Yes
	Hazmat Manufacturing Facility	Dart Containers	No	Yes
	Hazmat Manufacturing Facility	G & S Associates	No	Yes
	Hazmat Manufacturing Facility	Golden Cheese	No	Yes
	Hazmat Manufacturing Facility	GTM, Inc.	No	Yes
	Hazmat Manufacturing Facility	Hi-Country	No	Yes
	Hazmat Manufacturing Facility	US Battery	No	Yes
	Hazmat Manufacturing Facility	Watson Pharmaceuticals	No	Yes
	Hazmat Storage Location	Advanced Fuel Filtration	No	Yes
	Hazmat Storage Location	All American Asphalt	No	Yes
	Hazmat Storage Location	Liston Aluminum	No	Yes
	Hazmat Storage Location	United Agri Products	No	Yes
	Lake	Lake Mathews	No	Yes
	Pipeline	Four Corners Oil Pipline	Yes	No
	Pipeline	Natural Gas	Yes	No
	Railroad Track	BNSF	Yes	No
	Reservoir	Lake Mathews	No	Yes
	River	Santa Ana River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: HOME GARDENS AGENCY: COUNTY WATER DISTRICT DATE: 8/23/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	2	2	10
FLOOD	3	3	1	1	9
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	3	11
LANDSLIDES	2	3	1	1	12
INSECT INFESTATION	3	4	3	4	13
EXTREME SUMMER/WINTER WEATHER	2	4	2	4	3
SEVERE WIND EVENT	3	3	3	3	4
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	0	19
TERRORISM	4	2	0	0	6
OTHER MAN-MADE					
PIPELINE	2	3	4	4	2
AQUEDUCT	2	3	0	0	18
TRANSPORTATION	2	4	0	0	17
BLACKOUTS	3	4	3	4	5
HAZMAT ACCIDENTS	3	3	0	0	15
NUCLEAR ACCIDENT	4	2	0	0	16
TERRORISM	4	2	3	2	7
CIVIL UNREST	2	2	0	0	8
JAIL/PRISON EVENT	1	2	0	0	14
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

N/A	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
L	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
M	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
N/A	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
N/A	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
H	Backup water supplies for hospitals

M	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
N/A	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

L	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction
N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
N/A	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided

	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
N/A	Evaluate regulations on roof drainage mechanisms
N/A	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
N/A	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

H	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
N/A	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment
N/A	Fire spotter program/red flag program
	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
N/A	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
N/A	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment

N/A	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
N/A	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
N/A	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
N/A	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
M	General public drought awareness
	◊ Lawn watering rotation
M	Develop County drought plan
N/A	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
L	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization

N/A	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
N/A	Public education
	◊ Bi-lingual signs
	◊ Blackout information
N/A	Notification system for rail traffic - container contents
M	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Home Gardens County Water District
Contact: Karl Schalow
Phone: (951) 737-4741

MITIGATION STRATEGY INFORMATION

Proposal Name:

TANK TELEMERTRY AND VALVE MODIFICATION

Proposal Location:

TANK SITE

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
X	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

Our water tank is primary water storage for the district. In the past two years, there have been three incidents of pipeline failure in supply lines being feed by this tank.. Although the failures were caused by human error, in each incident the water level of the tank was reduced by 25%. In two incidents and by 50% in one, the damage to these smaller pipelines was less than the potential damage the 16" pipeline from the tank to the system could cause in an earthquake. This tank is the districts primary backup to support firefighting efforts.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The proposed mitigation strategy is to upgrade the existing telemetry system at the tank site. The upgrade of the system would include an alerting system and an automatic shut-off value. The alerting system would notify the district of a immediate and high volume loss of water from the tank. In addition, the sensor would automatically close the release value controlling the release of water from the tank. By automatically closing the release valve, there would be a lower flood threat level to the homes in the area of the break and the loss of water would be limited.The cost of the system upgraded greatly out ways the potential loss of property should the pipe be damaged in an earthquake.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL HAZARD MITIGATION ANALYSIS PROJECT
OPTIONAL COST-BENEFIT ANALYSIS WORKSHEET

Jurisdiction:	Home Gardens County Water District
Contact:	Karl Schalow
Phone:	(951) 737-4741
Proposal Name:	TANK TELEMETRY AND VALVE MODIFICATION
Proposal Location:	TANK SITE

Estimated Proposal Costs
List the projected total cost of the mitigation proposal. Although these are estimated costs, some care should be taken to ensure the values are as accurate and comprehensive as possible.

Benefit/Loss Costs *- The projected cost of the event should it happen.*
These costs are determined by projecting the potential damage and losses as a result of the event and include:

3. Direct Losses - Losses linked directly to a hazard event including response costs and all damages.

4. Indirect Losses - All losses other than direct losses and can include potential economic losses due to the closure of a damaged facilities, as well as non financial losses such as loss of historical resources, pain, and suffering.

LOSS/BENEFITS FACTORS

PROJECT COSTS		(List potential losses)	NUMBERS	COST
Labor	1000.00	1. Structures		
Materials		a. Destroyed	2.00	50000.00
Land Acquisition		b. Damaged	4.00	100000.00
Contract Services	25000.00	2. Lives		
Other Costs (Please List):		a. Injured		
		b. Deceased		
		3. Agriculture		
		a. Animals Injured		
		b. Animals Deceased		
		c. Crops Destroyed		
		4. Infrastructure		
		a. Destroyed		80000.00
		b. Damaged		
		5. Economic Loss -Water Loss Value		1362.68
		6. Response Costs		600.00
		7. Other Losses or Costs (Please List)		
Total Proposal Cost:	26000.00	Total Loss Projection:		681983.68

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Home Gardens County Water District**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO X**	
Current Population in Jurisdiction or Served	780	Projected Population in Jurisdiction or Served - in 2010	900
Current Sq Miles in Jurisdiction or Served	54	Projected Sq Miles in Jurisdiction or Served - in 2010	54
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	No	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	N/A		
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones		Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	3	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	5
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	2	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	2
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Home Gardens Water District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 15, 2004**
Local Point of Contact: **Karl Schalow**		**Address:** **3832 N.Grant St.** **Corona, Ca. 92879**
Title: General Manager		
Agency: Home Gardens Water District		
Phone Number: (951) 737-4741		**E-Mail: hgcwd@pcmagic.net**

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Home Gardens Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Home Gardens Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Home Gardens Water District Section, Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Home Gardens Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Part II, Home Gardens Water District Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II, Home Gardens Water District Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & Home Gardens Water District Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				

Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Home Gardens Water District Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Lee Lake Water District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Lee Lake Water District		
Type Agency/Jurisdiction:		Other Agency CA Water District/Riverside County		
Contact Person:	Title:	General Manager		
First Name:	John	Last Name:	Pastore	
Agency Address:	Street:	22646 Temescal Canyon Road		
	City:	Corona		
	State:	CA		
	Zip:	92883		
Contact Phone	951-277-1414		FAX	951-277-1419
E-mail	llwdjp@att.net			

Population Served	4200	Square Miles Served	10.5

Does your organization have a general plan?	No
Does your organization have a safety component to the general plan?	No
What year was your plan last updated?	NA

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	7/8/04
Do you have a recovery annex or section in your plan?	No
Do you have a terrorism/WMD annex or section in your plan?	No

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**No**
AIRPORT NEXT TO JURISDICTION	**No**
DAIRY INDUSTRY	**No**
POULTRY INDUSTRY	**No**
CROPS/ORCHARDS	**No**
DAMS IN JURISDICTION	**No**
DAMS NEXT TO JURISDICTION	**No**
LAKE/RESERVOIR IN JURISDICTION	**No**
LAKE/RESERVOIR NEAR JURISDICTION	**Yes**
JURISDICTION IN FLOOD PLAIN	**Yes**
CONTROLLED FLOOD CONTROL CHANNEL	**Yes**
UNCONTROLLED FLOOD CONTROL CHANNEL	**No**
EARTHQUAKE FAULTS IN JURISDICTION	**Yes**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**Yes**
MOBILE HOME PARKS	**Yes**
NON-REINFORCED FREEWAY BRIDGES	**No**
NON-REINFORCED BRIDGES	**Yes**
BRIDGES IN FLOOD PLAIN	**Yes**
BRIDGES OVER OR ACROSS RIVER/STREAM	**Yes**
ROADWAY CROSSING RIVER/STREAM	**Yes**
NON REINFORCED BUILDINGS	**No**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**Yes**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**Yes**
FOREST AREA IN JURISDICTION	**Yes**
FOREST AREA NEXT TO JURISDICTION	**Yes**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**No**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**No**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**No**
RAILROAD TRACKS IN JURISDICTION	**No**
RAILROAD TRACKS NEXT TO JURISDICTION	**No**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**No**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**No**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**No**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**No**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**No**
NEAR FLOOD PLAIN	**Yes**
NEAR RAILROAD TRACKS	**No**
NEAR A DAM	**No**
UPSTREAM FROM A DAM	**No**
DOWNSTREAM FROM A DAM	**Yes**
DOWNSTREAM OF A LAKE	**Yes**
DOWNSTREAM FROM A RESERVOIR	**No**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**Yes**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**No**
ON AN EARTHQUAKE FAULT	**No**
NEAR AN EARTHQUAKE FAULT	**Yes**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**No**
IN A FOREST AREA	**No**
NEAR A FOREST AREA	**Yes**
NEAR A MAJOR HIGHWAY	**Yes**
A HAZARDOUS WASTE FACILITY	**No**
NEAR A HAZARDOUS WASTE FACILITY	**No**
A HAZARDOUS STORAGE FACILITY	**No**
NEAR A HAZARDOUS STORAGE FACILITY	**No**
NON REINFORCED BUILDINGS	**No**
A MAJOR GAS/OIL PIPELINE	**No**
NEAR A MAJOR GAS/OIL PIPELINE	**No**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**No**
HAVE BEEN DAMAGED BY FLOOD	**No**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**No**
HAVE BEEN DAMAGED BY FOREST FIRE	**No**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**No**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**No**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**No**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	No
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	Yes
COULD BE CONSIDERED A BIO-HAZARD RISK	No

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
Lee Lake Water District	Dam	Lake Mathews	No	Yes
	Dam	Prado	No	Yes
	Fault	Elsinore	Yes	Yes
	Flood Channel	Mabey Canyon	Yes	No
	Flood Channel	Temescal Creek	Yes	Yes
	Hazmat Manufacturing Facility	Corona Energy Partners	No	Yes
	Hazmat Manufacturing Facility	Corona Products	No	Yes
	Hazmat Manufacturing Facility	Dart Containers	No	Yes
	Hazmat Manufacturing Facility	G & S Associates	No	Yes
	Hazmat Manufacturing Facility	Golden Cheese	No	Yes
	Hazmat Manufacturing Facility	GTM, Inc.	No	Yes
	Hazmat Manufacturing Facility	Hi-Country	No	Yes
	Hazmat Manufacturing Facility	US Battery	No	Yes
	Hazmat Manufacturing Facility	Watson Pharmaceuticals	No	Yes
	Hazmat Storage Location	Advanced Fuel Filtration	No	Yes
	Hazmat Storage Location	All American Asphalt	No	Yes
	Hazmat Storage Location	Liston Aluminum	No	Yes
	Hazmat Storage Location	United Agri Products	No	Yes
	Lake	Lake Mathews	No	Yes
	Pipeline	Four Corners Oil Pipline	Yes	No
	Pipeline	Natural Gas	Yes	No
	Railroad Track	BNSF	Yes	No
	Reservoir	Lake Mathews	No	Yes
	River	Santa Ana River	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: John Pastore AGENCY: Lee Lake Water District DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	2	3	3
WILDLAND FIRE	3	4	1	3	8
FLOOD	3	3	3	3	1
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	2	10
LANDSLIDES	2	3	0	0	
INSECT INFESTATION	3	4	0	0	
EXTREME SUMMER/WINTER WEATHER	2	4	1	4	4
SEVERE WIND EVENT	3	3	1	3	9
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	0	
TERRORISM	4	2	0	0	
OTHER MAN-MADE					
PIPELINE	2	3	1	3	5
AQUEDUCT	2	3	1	3	6
TRANSPORTATION	2	4	0	0	
BLACKOUTS	3	4	1	3	7
HAZMAT ACCIDENTS	3	3	0	0	
NUCLEAR ACCIDENT	4	2	0	0	
TERRORISM	4	2	4	2	2
CIVIL UNREST	2	2	0	0	
JAIL/PRISON EVENT	1	2	0	0	
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
H	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
N/A	◊ Hotel/motel literature
N/A	◊ Local radio stations for education
H	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
L	◊ Consider integration with radio notification systems
L	◊ Upgrade alerting and warning systems for hearing impaired
L	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
M	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
N/A	Ensure Uniform Building Code compliance
N/A	◊ Update to current compliance when retrofitting
H	Insurance coverage on public facilities
H	Funding for non-structural abatement (Earthquake kits, etc.)

L	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
H	Evaluate pipeline seismic resiliency
H	Pre-positioning of temporary response structures
L	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
H	Training/standardization for contractors performing retrofitting
H	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
N/A	◊ Alerting information
N/A	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
N/A	Continue existing interoperability project
N/A	Strengthen/harden
H	Relocate
H	Redundancy
H	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
H	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction

N/A	Upgrade dirt embankments to concrete
H	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
H	Increase sandbag distribution capacities
H	Develop pre-planned response plan for floods
H	◊ Evacuation documentation
L	◊ Re-examine historical flooding data for potential street re-design
L	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
N/A	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
M	Hardening water towers
M	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
N/A	Evaluate regulations on roof drainage mechanisms
N/A	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
N/A	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES NOTE: There was no information received regarding Wildfires

	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
	Develop strategic plan for forest management
	Public education on wildfire defense
	Encourage citizen surveillance and reporting
	Identify hydrants with equipment ownership information
	Enhanced fire fighting equipment

	Fire spotter program/red flag program
	◊ Expand to other utilities
	Research on insect/pest mitigation technologies
	Volunteer home inspection program
	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
	Pre-identify shelters/recovery centers/other resources
	Roofing materials/defensive spacing regulations
	Community task forces for planning and education
	Fuel/dead tree removal
	Strategic pre-placement of fire fighting equipment
	Establish FEMA coordination processes based on ICS
	Brush clearings around repeaters
	Research new technologies for identifying/tracking fires
	Procure/deploy backup communications equipments
	"Red Tag" homes in advance of event
	Provide fire-resistant gel to homeowners
	Involve insurance agencies in mitigation programs
	Clear out abandoned vehicles from oases
	Code enforcement
	Codes prohibiting fireworks
	Fuel modification/removal
	Evaluate building codes
	Maintaining catch basins

OTHER HAZARDS

H	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
H	General public drought awareness
M	◊ Lawn watering rotation
H	Develop County drought plan
N/A	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization

N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
H	Improve/maintain blackout notification plan.
H	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
M	Public education on low water landscaping
N/A	Salton Sea desalinization
N/A	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
H	Upgrade valves on California aqueduct
H	Public education
H	◊ Bi-lingual signs
H	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	LEE LAKE WATER DISTRICT
Contact:	JOHN PASTORE
Phone:	951 277-1414

MITIGATION STRATEGY INFORMATION

Proposal Name:

LEE LAKE WATER DISTRICT FLOOD PROTECTION PROJECT

Proposal Location:

22646 TEMESCAL CANYON ROAD, CORONA CA 92883

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
x	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

1998 STORM FLOWS IN TEMESCAL CREEK THREATENED TO FLOOD THE TREATMENT FACILITY AT THIS LOCATION AND CAUSED EXTENSIVE EROSION TO ADJOINING PROPERTY.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

THE PROXIMITY OF THE DISTRICT'S $17 MILLION SEWAGE TREATMENT FACILITY TO THE TEMESCAL CREEK SUBJECTS IT TO FLOODING AND EROSION FROM THE CREEK DURING A SIGNIFICANT STORM EVENT. THE PROJECT WILL CONSIST OF AN EARTHEN AND ROCK DIKE, APPROX. 1200 LF LONG THAT WILL BE CONSTRUCTED ALONG THE WESTERLY BANK OF THE TEMESCAL CREEK TO PROTECT THE SEWAGE TREATMENT FACILITY. THE PROJECT WILL HAVE TO BE DESIGNED AND THE NECESSARY PERMITS AND ENVIRONMENTAL CLEARANCES OBTAINED.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **LEE LAKE WATER DISTRICT**	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __X__**		
Current Population in Jurisdiction or Served	6800	Projected Population in Jurisdiction or Served - in 2010	9800
Current Sq Miles in Jurisdiction or Served	10.5	Projected Sq Miles in Jurisdiction or Served - in 2010	10.5
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	NO	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	NA		
Approximate Number of Homes/Apts/etc.	2200	Projected Number of Homes/Apts/etc.- in 2010	6200
Approximate Total Residential Value	NA	Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses	23	Projected Number of Commercial Businesses - in 2010	50
Approximate Percentage of Homes/Apts/etc in flood hazard zones	0	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	0
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	NA	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	NA
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	NA	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	NA
Approximate Percentage of Commercial Businesses in flood hazard zones	25	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	25
Approximate Percentage of Commercial Businesses in earthquake hazard zones	NA	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	NA
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	NA	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	NA
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	NA	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	NA
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	NA	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	NA
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Lee Lake Water District**	**Title/Lead Jurisdiction Of Multi-Jurisdictional Plan:** **Riverside County Operational Area**	**Date Of Completion:** **9/24/04**
Local Point Of Contact: **JOHN PASTORE**	**Address:** **22646 TEMESCAL CANYON ROAD** **CORONA., CA.92883**	
Title: **General Manager**		
Agency: **Lee Lake Water District**		
Phone Number: **(951) 277-1414**	**E-Mail:** **Llwdjp@Att.Net**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part 1, Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Yes - Part II Lee Lake Water District Section - Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Wildfire Pgs 28 – 40 Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Dam failure Pgs 85 – 93 Hazmat incidents Pgs 94 – 101 Pipeline/Aqueduct incidents Pgs 111 – 114 Blackout Pgs 115 – 118 Part II Lee Lake Water District Section -		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes - Part II Lee Lake Water District Section -	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & Lee Lake Water District Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Lee Lake Water District Section -	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Lee Lake Water District Section - Supplemental Questionnaire for	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Mission Springs Water District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Mission Springs Water District		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Service Supervisor		
First Name:	Dave	Last Name:	Pargeon	
Agency Address:	Street:	66575 Second Street		
	City:	Desert Hot Springs		
	State:	CA		
	Zip:	92240		
Contact Phone	760-329-6448		FAX	760-329-2482
E-mail	dpargeon@mswd.org			

Population Served	25,000	Square Miles Served	135

Does your organization have a general plan?	NO
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	2004
Do you have a recovery annex or section in your plan?	YES
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	YES
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	NO

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Mission Springs Water District	Aqueduct	Metropolitan Municipal Water District	Yes	No
Mission Springs Water District	Fault	Banning	Yes	No
Mission Springs Water District	Fault	Garnet Hill	Yes	No
Mission Springs Water District	Fault	Mission Creek	Yes	No
Mission Springs Water District	Pipeline	unknown	Yes	No
Mission Springs Water District	Railroad Track	unknown	No	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Dave Pargeon AGENCY: Mission Springs Water District DATE: 9/2/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	4	1
WILDLAND FIRE	3	4	2	2	7
FLOOD	3	3	3	2	2
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	2	3
LANDSLIDES	2	3	2	1	10
INSECT INFESTATION	3	4	1	1	17
EXTREME SUMMER/WINTER WEATHER	2	4	2	4	8
SEVERE WIND EVENT	3	3	2	4	9
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	2	2	12
TERRORISM	4	2	2	2	12-13
OTHER MAN-MADE					
PIPELINE	2	3	3	2	4
AQUEDUCT	2	3	4	2	5
TRANSPORTATION	2	4	2	2	14
BLACKOUTS	3	4	3	3	6
HAZMAT ACCIDENTS	3	3	2	2	15
NUCLEAR ACCIDENT	4	2	4	2	16
TERRORISM	4	2	4	2	11
CIVIL UNREST	2	2	1	1	18
JAIL/PRISON EVENT	1	2	1	1	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
H	◊ Government employees
H	◊ Businesses
H	◊ Hotel/motel literature
H	◊ Local radio stations for education
H	◊ Public education via utilities
H	◊ Identify/create television documentary content
	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
H	Provide training to hospital staffs
H	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
M	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
M	◊ Mobile home parks
M	Develop educational materials on structural reinforcement and home inspections
	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities
M	Funding for non-structural abatement (Earthquake kits, etc.)
M	Pre - identify empty commercial space for seismic re-location

M	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
H	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
M	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
M	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
M	◊ Links to jurisdictions
M	◊ Alerting information
M	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
H	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
M	Harden repeater sites
M	Continue existing interoperability project
M	Strengthen/harden
M	Relocate
M	Redundancy
M	Mobile repeaters

FLOODS

M	Update development policies for flood plains
M	Public education on locations of flood plains
M	Develop multi-jurisdictional working group on floodplain management
M	Develop greenbelt requirements in new developments
M	Update weather pattern/flood plain maps
M	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
M	Install vehicular crossing gates/physical barriers for road closure
M	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc
M	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete

M	Conduct countywide needs study on drainage capabilities
M	Increase number of pumping stations
M	Increase sandbag distribution capacities
	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
	Warning systems - ensure accurate information provided
M	◊ Publicize flood plain information (website?)
M	◊ Install warning/water level signage
M	◊ Enhanced public information
M	◊ Road closure compliance
M	◊ Shelter locations
M	◊ Pre-event communications
	Look at County requirements for neighborhood access
M	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
M	Hardening water towers
H	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
M	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
M	Erosion-resistant plants
M	Traffic light protection
M	Upkeep of diversionary devices
H	Install more turn-off valves on pipelines
H	Backup generation facilities
H	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
M	Develop strategic plan for forest management
M	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
M	Enhanced fire fighting equipment
	Fire spotter program/red flag program

M	◊ Expand to other utilities
M	Research on insect/pest mitigation technologies
M	Volunteer home inspection program
	Public education program
M	◊ Weather reporting/alerting
M	◊ Building protection
M	◊ Respiration
H	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
M	Strategic pre-placement of fire fighting equipment
M	Establish FEMA coordination processes based on ICS
M	Brush clearings around repeaters
M	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipments
M	"Red Tag" homes in advance of event
M	Provide fire-resistant gel to homeowners
M	Involve insurance agencies in mitigation programs
M	Clear out abandoned vehicles from oases
M	Code enforcement
M	Codes prohibiting fireworks
M	Fuel modification/removal
M	Evaluate building codes
M	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
M	Increase County Vector Control capacities
	General public drought awareness
H	◊ Lawn watering rotation
H	Develop County drought plan
M	Mitigation of landslide-prone areas
M	Develop winter storm sheltering plan
H	Ease permitting process for building transmission lines
H	Evaluate restrictions on dust/dirt/generating activities during wind seasons
M	Rotational crop planning/soil stabilization
M	Enhance agricultural checkpoint enforcement

M	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
M	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
H	◊ Staffing for terrorism mitigation
	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
M	Cooling stations - MOUs in place
M	Fire Ant eradication program
M	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
H	Public education on low water landscaping
M	Salton Sea desalinization
M	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
M	Vulnerability assessment on fiber-optic cable
M	Upgrade valves on California aqueduct
	Public education
H	◊ Bi-lingual signs
H	◊ Blackout information
M	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
M	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Mission Springs Water District	
Contact:	Dave Pargeon
Phone:	760-329-6448

MITIGATION STRATEGY INFORMATION

Proposal Name:

Reservoir eartquake Modification/Installation of seismic shutoff valves

Proposal Location:

Entire District

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

Destruction of Overhill Reservoir and replacement of all main lines in Painted Hills area due to Painted Hills (Palm Springs) Earthquake in 1986. High Desert View Reservoir Damage and main line replacement and repairs due to 1992 Landers and Big bear Earthquakes.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

To help prevent the loss of storage water during Earthquakes. Begin a systematic review of critical storage facilities and the need for seismic shutoff valves on a first need basis such as the Terrace Reservoir storage farm.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Mission Springs Water District**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO X**	
Current Population in Jurisdiction or Served	25,000	Projected Population in Jurisdiction or Served - in 2010	45,000
Current Sq Miles in Jurisdiction or Served	135	Projected Sq Miles in Jurisdiction or Served - in 2010	135
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	N/A		
Approximate Number of Homes/Apts/etc.	10,000	Projected Number of Homes/Apts/etc.- in 2010	18,000
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses	600	Projected Number of Commercial Businesses - in 2010	1,100
Approximate Percentage of Homes/Apts/etc in flood hazard zones	100	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	100
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	100	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	100
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	0	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	0
Approximate Percentage of Commercial Businesses in flood hazard zones	100	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	100
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	48	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	56
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	48	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	56
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Mission Springs Water District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County**	**Date of Completion: 9/27/04**
Local Point of Contact: **Dave Pargon**	**Address:** **66572 2nd Street.** **Desert Hot Springs, CA. 92240**	
Title: Service Supervisor		
Agency: San Mission Springs Water District		
Phone Number: (760) 329-6445	**E-Mail: dpargeon@mswd.org**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Mission Springs Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Mission Springs Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Mission Springs Water District Section, Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Murrieta County Water District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Murrieta County Water District		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	GM		
First Name:	Wayne	Last Name:	Spencer	
Agency Address:	Street:	PO Box 949		
	City:	Murrieta		
	State:	CA		
	Zip:	92564		
Contact Phone	951-677-7667		FAX	951-677-5499
E-mail	wspencer@murritawater.com			

Population Served	6,500	Square Miles Served	7

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	5/10/2004

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	5/10/2004
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

Information Updated 10/13/04

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	NO
LAKE/RESERVOIR NEAR JURISDICTION	NO
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	NO
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	YES
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	NO
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	YES
MAJOR GAS/OIL PIPELINES IN JURISDICTION	NO
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	NO
RAILROAD TRACKS IN JURISDICTION	NO
RAILROAD TRACKS NEXT TO JURISDICTION	NO
HAZARDOUS WASTE FACILITIES IN JURISDICTION	YES
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**YES**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**YES**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	YES
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	YES
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	YES
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	YES
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	YES
A HAZARDOUS STORAGE FACILITY	YES
NEAR A HAZARDOUS STORAGE FACILITY	YES
NON REINFORCED BUILDINGS	YES
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Murrieta County Water District	Flood Channel	Murrieta Creek	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Murrieta County Water District AGENCY: Water and Sewer DATE: 6-14-04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1a
WILDLAND FIRE	3	4	0	0	0
FLOOD	3	3	3	3	2
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	3	7
LANDSLIDES	2	3	3	1	5
INSECT INFESTATION	3	4	0	0	0
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	8
SEVERE WIND EVENT	3	3	0	0	0
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	3	4
TERRORISM	4	2	4	2	11
OTHER MAN-MADE					
PIPELINE	2	3	2	3	9
AQUEDUCT	2	3	0	0	0
TRANSPORTATION	2	4	1	1	12
BLACKOUTS	3	4	2	2	10
HAZMAT ACCIDENTS	3	3	3	3	6
NUCLEAR ACCIDENT	4	2	4	2	3
TERRORISM	4	2	4	2	1b
CIVIL UNREST	2	2	1	1	13
JAIL/PRISON EVENT	1	2	0	0	0
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
H	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
NA	Provide training to hospital staffs
NA	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
H	Install earthquake-warning devices at critical facilities
NA	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
NA	Develop educational materials on structural reinforcement and home inspections
NA	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
NA	Funding for non-structural abatement (Earthquake kits, etc.)
NA	Pre - identify empty commercial space for seismic re-location
NA	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
NA	Mapping of liquefaction zones
NA	Incorporate County geologist data into planning
NA	Backup water supplies for hospitals

H	Evaluate pipeline seismic resiliency
NA	Pre-positioning of temporary response structures
NA	Fire sprinkler ordinance for all structures
NA	Evaluate adequacy of reservoir capacity for sprinkler systems
NA	Training/standardization for contractors performing retrofitting
NA	Website with mitigation/contractor/retrofitting information
NA	◊ Links to jurisdictions
NA	◊ Alerting information
NA	◊ Volunteer information
H	Evaluate depths of aquifers/wells for adequacy during quakes
NA	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
H	Harden repeater sites
NA	Continue existing interoperability project
H	Strengthen/harden
NA	Relocate
H	Redundancy
NA	Mobile repeaters

FLOODS

NA	Update development policies for flood plains
NA	Public education on locations of flood plains
NA	Develop multi-jurisdictional working group on floodplain management
NA	Develop greenbelt requirements in new developments
NA	Update weather pattern/flood plain maps
H	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
H	Required water flow/runoff plans for new development
NA	Perform GIS mapping of flood channels, etc.
NA	Install vehicular crossing gates/physical barriers for road closure
NA	Maintenance of storm sewers/flood channels
NA	Create map of flood channels/diversions/water systems etc
NA	Require digital floor plans on new non-residential construction
NA	Upgrade dirt embankments to concrete
NA	Conduct countywide needs study on drainage capabilities
H	Increase number of pumping stations
NA	Increase sandbag distribution capacities
NA	Develop pre-planned response plan for floods
NA	◊ Evacuation documentation
NA	◊ Re-examine historical flooding data for potential street re-design
M	Training for city/county PIOs about flood issues
NA	Warning systems - ensure accurate information provided
NA	◊ Publicize flood plain information (website?)

NA	◊ Install warning/water level signage
NA	◊ Enhanced public information
NA	◊ Road closure compliance
NA	◊ Shelter locations
NA	◊ Pre-event communications
NA	Look at County requirements for neighborhood access
NA	◊ Secondary means of ingress/egress
NA	Vegetation restoration programs
H	Ensure critical facilities are hardened/backed up
H	Hardening water towers
H	Terrorism Surveillance - cameras at reservoirs/dams
NA	Riverbed maintenance
H	Evaluate existing lift stations for adequacy
NA	Acquisition of property for on-site retention
NA	Evaluate regulations on roof drainage mechanisms
NA	Erosion-resistant plants
NA	Traffic light protection
NA	Upkeep of diversionary devices
H	Install more turn-off valves on pipelines
H	Backup generation facilities
NA	Identify swift water rescue capabilities across County

WILDFIRES

NA	Aggressive weed abatement program
NA	◊ Networking of agencies for weed abatement
NA	Develop strategic plan for forest management
NA	Public education on wildfire defense
NA	Encourage citizen surveillance and reporting
NA	Identify hydrants with equipment ownership information
NA	Enhanced fire fighting equipment
NA	Fire spotter program/red flag program
NA	◊ Expand to other utilities
NA	Research on insect/pest mitigation technologies
NA	Volunteer home inspection program
NA	Public education program
NA	◊ Weather reporting/alerting
NA	◊ Building protection
NA	◊ Respiration
NA	Pre-identify shelters/recovery centers/other resources
NA	Roofing materials/defensive spacing regulations
NA	Community task forces for planning and education
NA	Fuel/dead tree removal
NA	Strategic pre-placement of fire fighting equipment
NA	Establish FEMA coordination processes based on ICS
NA	Brush clearings around repeaters

NA	Research new technologies for identifying/tracking fires
NA	Procure/deploy backup communications equipments
NA	"Red Tag" homes in advance of event
NA	Provide fire-resistant gel to homeowners
NA	Involve insurance agencies in mitigation programs
NA	Clear out abandoned vehicles from oases
NA	Code enforcement
NA	Codes prohibiting fireworks
NA	Fuel modification/removal
NA	Evaluate building codes
NA	Maintaining catch basins

OTHER HAZARDS

H	Improve pipeline maintenance
NA	Wetlands mosquito mitigation (West Nile Virus)
NA	Insect control study
NA	Increase County Vector Control capacities
M	General public drought awareness
NA	◊ Lawn watering rotation
H	Develop **DISTRICT/**County drought plan
NA	Mitigation of landslide-prone areas
NA	Develop winter storm sheltering plan
NA	Ease permitting process for building transmission lines
NA	Evaluate restrictions on dust/dirt/generating activities during wind seasons
NA	Rotational crop planning/soil stabilization
NA	Enhance agricultural checkpoint enforcement
NA	Agriculture - funding of detection programs
H	Communications of pipeline maps (based on need to know)
NA	Improved notification plan on runaway trains
NA	Improve/maintain blackout notification plan.
NA	Support business continuity planning for utility outages
NA	Terrorism training/equipment for first responders
NA	◊ Terrorism planning/coordination
NA	◊ Staffing for terrorism mitigation
NA	Create a SONGS regional planning group
NA	◊ Include dirty bomb planning
NA	Cooling stations - MOUs in place
NA	Fire Ant eradication program
NA	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
M	Public education on low water landscaping
NA	Salton Sea desalinization
NA	Establish agriculture security standards (focus on water supply)
NA	ID mutual aid agreements
NA	Vulnerability assessment on fiber-optic cable

NA	Upgrade valves on California aqueduct
NA	Public education
NA	◊ Bi-lingual signs
NA	◊ Blackout information
NA	Notification system for rail traffic - container contents
NA	Control and release of terrorism intelligence
NA	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #1

Jurisdiction:	Murrieta County Water District
Contact:	Wayne Spencer
Phone:	951-677-7667

MITIGATION STRATEGY INFORMATION

Proposal Name:

Grizzly Tank modification

Proposal Location:

Gateway Dr., Murrieta, CA

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

The Grizzly water tank storage facility is the only storage for our 1430 pressure zone and it has only one supply line to and from it. The floods of 1993 and 1996 experienced failures in the system that resulted in the tank in our other pressure zone draining significantly before it could be turned off. The existing water level alarm system is antiquated and there is no automatic shutoff mechanism. Severe earthquake damages could create a major water loss for this portion of the District and its customers.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The telemetry needs to be upgraded and an automatic shutoff mechanism installed in the supply line from the storage tank. The telemetry would be more accurate in reporting water loss than now exists and the automatic shutoff would prevent unecessary loss of water due to delays of staff responding to a water loss due to no alert or unaccessable due to flooding.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #2

Jurisdiction: Murrieta County Water District
Contact: Wayne Spencer
Phone: 951-677-7667

MITIGATION STRATEGY INFORMATION

Proposal Name:

Los Alamos import water connection

Proposal Location:

Los Alamos Rd., Murrieta, CA

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

Past emergencies have resulted in significant water losses to the system. We recently installed a connection with a neighboring district for emergency water supplies. That connection has reduced the severity of water loss in other parts of the district during emergencies. Damage or cessation of that connection due to earthquake or flood damage would jeopardize water availability for the district as a whole.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

Installation of a backup connection would safeguard the access to emergency water in the event of natural disasters depleting district water production, storage or access to existing emergency water.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	Y	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #3

Jurisdiction:	Murrieta County Water District
Contact:	Wayne Spencer
Phone:	951-677-7667

MITIGATION STRATEGY INFORMATION

Proposal Name:

Alson Pump Station upgrade

Proposal Location:

Washington Ave. Murrieta, CA

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	The Alson pump station is the only pump station to get our source water to the 1430 pressure zone storage tank and customers. It currently has no back up unit and if an earthquake or other emergency happens to terminate its service, even for a short time, the whole pressure zone would be without water in a short amount of time depending on the volumn in the storage tank. This has been an issue with several power outages in the past that, although managed with a temp generator, gave us the awareness of the need for another pump system. Additionally the telemetry system is antiquated and is not accurate or trustworthy in reporting if the facility is functional.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

A backup/emergency pump system is necessary to ensure continued flow of water to the 1430 pressure zone in case the primary pump fails due to earthquakes or earthquake related events. Upgrade of the telemetry would ensure accurate and timely reporting of the status of the pump.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

X	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #4

Jurisdiction: Murrieta County Water District	
Contact:	Wayne Spencer
Phone:	951-677-7667

MITIGATION STRATEGY INFORMATION

Proposal Name:

Olga Gordon Tank modification

Proposal Location:

Ivy Street, Murrieta, CA

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

The Gordon water tank storage facility is the only storage for our 1280 pressure zone and it has only one supply line to and from it that also runs under the Murrieta creek. The floods of 1993 and 1996 experienced failures in the system that resulted in the tank draining significantly before it could be turned off. The existing alarm system is antiquated and there is no automatic shutoff mechanism. A severe flood or earthquake damages could create a major water loss for the District and its customers.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The telemetry needs to be upgraded and an automatic shutoff mechanism installed in the supply line from the storage tank. The telemetry would be more accurate in reporting water loss than now exists and the automatic shutoff would prevent unecessary loss of water in that part of the district due to delays of staff responding to a water loss due to no alert or unaccessable due to flooding.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

X	Unfunded proposal - funds are not available for the proposal at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Murrieta County Water District**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __X__**	
Current Population in Jurisdiction or Served		Projected Population in Jurisdiction or Served - in 2010	
Current Sq Miles in Jurisdiction or Served		Projected Sq Miles in Jurisdiction or Served - in 2010	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?		If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years			
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones		Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones		Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Murrieta Water District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion:**
Local Point of Contact: **Wayne Spencer**	**Address:** **P.O. Box 949** **Murrieta, CA.**	
Title: General Manager		
Agency: **Murrieta Water District**		
Phone Number: (951) 677-7667	**E-Mail: wspencer@murrietawater.com**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation	Part II - Murrieta Water Part II- Murrieta Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	Supplemental Questionnaire		
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II - Murrieta Water District Section Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Part II - Murrieta Water District Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II - Murrieta Water District Section Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I, Earthquakes: pages 54-66; Flood: pages 41-53; Wildland fire: pages 28-40; Extreme weather: pages 67-76 and Part II Murrieta Water District Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II Murrieta Water District Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part I, Earthquakes: pages 54-66; Flood: pages 41-53; Wildland fire: pages 28-40; Extreme weather: pages 67-76	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part I, Earthquakes: pages 61-64; Flood: pages 48-50; Wildland fire: pages 34-37; Extreme weather: pages 72-76	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part I, Earthquakes: pages 61-64; Flood: pages 48-50; Wildland fire: pages 34-37; Extreme weather: pages 72-76	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part I, page 24-27 and Part II - Murrieta Water District Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Murrieta Water District Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Murrieta Water District Supplemental Questionnaire	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Rancho California Water District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Rancho California Water District		
Type Agency/Jurisdiction:		California Water District		
Contact Person:	Title:	Planning & Capital Proposal Manager		
First Name:	Andrew	Last Name:	Webster	
Agency Address:	Street:	42135 Winchester Road	P.O Box 9017	
	City:	Temecula		
	State:	California		
	Zip:	92590		
Contact Phone	951-296-6900		FAX	951-296-6863
E-mail	webstera@ranchowater.com			

Population Served	105,000
Square Miles Served	156

Does your organization have a general plan?	Yes
Does your organization have a safety component to the general plan?	Yes
What year was your plan last updated?	2002

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	2002
Do you have a recovery annex or section in your plan?	Yes
Do you have a terrorism/WMD annex or section in your plan?	Yes

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**No**
AIRPORT NEXT TO JURISDICTION	**Yes**
DAIRY INDUSTRY	**No**
POULTRY INDUSTRY	**No**
CROPS/ORCHARDS	**Yes**
DAMS IN JURISDICTION	**Yes**
DAMS NEXT TO JURISDICTION	**Yes**
LAKE/RESERVOIR IN JURISDICTION	**Yes**
LAKE/RESERVOIR NEAR JURISDICTION	**Yes**
JURISDICTION IN FLOOD PLAIN	**No**
CONTROLLED FLOOD CONTROL CHANNEL	**Yes**
UNCONTROLLED FLOOD CONTROL CHANNEL	**Yes**
EARTHQUAKE FAULTS IN JURISDICTION	**Yes**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**Yes**
MOBILE HOME PARKS	**Yes**
NON-REINFORCED FREEWAY BRIDGES	**No**
NON-REINFORCED BRIDGES	**No**
BRIDGES IN FLOOD PLAIN	**Yes**
BRIDGES OVER OR ACROSS RIVER/STREAM	**Yes**
ROADWAY CROSSING RIVER/STREAM	**Yes**
NON REINFORCED BUILDINGS	**No**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**Yes**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**Yes**
FOREST AREA IN JURISDICTION	**No**
FOREST AREA NEXT TO JURISDICTION	**Yes**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**Yes**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**Yes**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**Yes**
RAILROAD TRACKS IN JURISDICTION	**No**
RAILROAD TRACKS NEXT TO JURISDICTION	**No**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**No**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**No**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**Yes**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**Yes**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**Yes**
NEAR FLOOD PLAIN	**Yes**
NEAR RAILROAD TRACKS	**No**
NEAR A DAM	**Yes**
UPSTREAM FROM A DAM	**No**
DOWNSTREAM FROM A DAM	**Yes**
DOWNSTREAM OF A LAKE	**Yes**
DOWNSTREAM FROM A RESERVOIR	**Yes**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**Yes**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**Yes**
ON AN EARTHQUAKE FAULT	**Yes**
NEAR AN EARTHQUAKE FAULT	**Yes**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**Yes**
IN A FOREST AREA	**Yes**
NEAR A FOREST AREA	**No**
NEAR A MAJOR HIGHWAY	**Yes**
A HAZARDOUS WASTE FACILITY	**No**
NEAR A HAZARDOUS WASTE FACILITY	**No**
A HAZARDOUS STORAGE FACILITY	**No**
NEAR A HAZARDOUS STORAGE FACILITY	**No**
NON REINFORCED BUILDINGS	**No**
A MAJOR GAS/OIL PIPELINE	**No**
NEAR A MAJOR GAS/OIL PIPELINE	**No**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**No**
HAVE BEEN DAMAGED BY FLOOD	**Yes**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**Yes**
HAVE BEEN DAMAGED BY FOREST FIRE	**Yes**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**No**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**No**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**Yes**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	Yes
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	No
NEAR FLOOD PLAIN	Yes
NEAR RAILROAD TRACKS	No
NEAR A DAM	No
UPSTREAM FROM A DAM	No
DOWNSTREAM FROM A DAM	Yes
DOWNSTREAM OF A LAKE	No
DOWNSTREAM FROM A RESERVOIR	No
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	No
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	Yes
ON AN EARTHQUAKE FAULT	No
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	Yes
IN A FOREST AREA	No
NEAR A FOREST AREA	No
NEAR A MAJOR HIGHWAY	Yes
A HAZARDOUS WASTE FACILITY	No
NEAR A HAZARDOUS WASTE FACILITY	No
A HAZARDOUS STORAGE FACILITY	No
NEAR A HAZARDOUS STORAGE FACILITY	No
NON REINFORCED BUILDINGS	No
A MAJOR GAS/OIL PIPELINE	No
NEAR A MAJOR GAS/OIL PIPELINE	No

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	Yes
COULD BE CONSIDERED A BIO-HAZARD RISK	Yes

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Rancho California WD	Dam	Diamond Valley Reservoir	No	Yes
	Fault	Earthquake Fault	Yes	Yes
	Hazmat Manufacturing Facility	International Rectifier	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

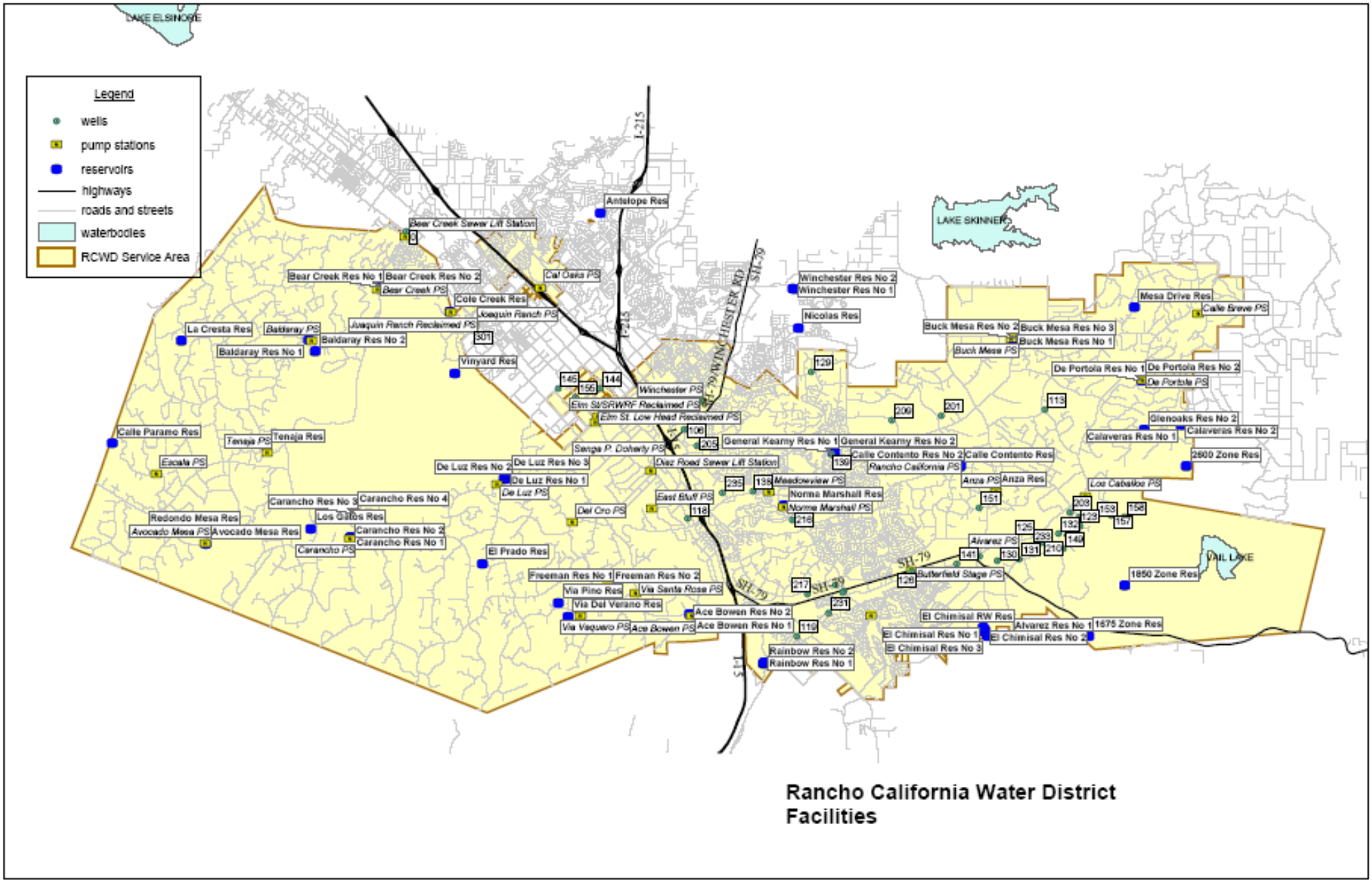
During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Andrew L. Webster. P. E. AGENCY: Rancho California Water District DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	3	3	1
WILDLAND FIRE	3	4	2	2	4
FLOOD	3	3	2	2	3
OTHER NATURAL HAZARDS					
DROUGHT	3	3	2	3	2
LANDSLIDES	2	3	1	1	16
	3	4	1	1	15
EXTREME SUMMER/WINTER WEATHER	2	4	2	3	8
SEVERE WIND EVENT	3	3	2	2	7
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	1	1	14
TERRORISM	4	2	1	1	13
OTHER MAN-MADE					
PIPELINE	2	3	1	3	5
AQUEDUCT	2	3	0	0	12
TRANSPORTATION	2	4	0	0	17
BLACKOUTS	3	4	1	2	9
HAZMAT ACCIDENTS	3	3	1	2	11
NUCLEAR ACCIDENT	4	2	2	2	10
TERRORISM	4	2	3	2	6
CIVIL UNREST	2	2	0	0	18
JAIL/PRISON EVENT	1	2	0	0	19
OTHER - PLEASE DESCRIBE BELOW					



Rancho California Water District
Facilities

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

H	Aggressive public education campaign in light of predictions
	Generate new literature for dissemination to:
N/A	◊ Government employees
N/A	◊ Businesses
N/A	◊ Hotel/motel literature
N/A	◊ Local radio stations for education
N/A	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
N/A	◊ Training and maintenance
N/A	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
H	Evaluate re-enforcing reservoir concrete bases
H	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
N/A	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
H	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
	Ensure Uniform Building Code compliance
N/A	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)

N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
N/A	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
M	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
N/A	◊ Alerting information
N/A	◊ Volunteer information
H	Evaluate depths of aquifers/wells for adequacy during quakes
H	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

H	Communications Interoperability
N/A	Harden repeater sites
H	Continue existing interoperability project
N/A	Strengthen/harden
N/A	Relocate
N/A	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction

N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
N/A	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
N/A	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
N/A	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
N/A	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
N/A	Evaluate regulations on roof drainage mechanisms
N/A	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
N/A	Install more turn-off valves on pipelines
N/A	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

N/A	Aggressive weed abatement program
N/A	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
N/A	Encourage citizen surveillance and reporting
N/A	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment

N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
N/A	◊ Respiration
N/A	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
N/A	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
N/A	Establish FEMA coordination processes based on ICS
N/A	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
N/A	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
N/A	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
N/A	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
N/A	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

H	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
	General public drought awareness
H	◊ Lawn watering rotation
N/A	Develop County drought plan
N/A	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization

N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
NA	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
N/A	Support business continuity planning for utility outages
	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
	Create a SONGS regional planning group
M	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
H	Public education on low water landscaping
N/A	Salton Sea desalinization
NA	Establish agriculture security standards (focus on water supply)
N/A	ID mutual aid agreements
NA	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #1

Jurisdiction:	Rancho California Water District
Contact:	Andy Webster
Phone:	(951) 296-6900

MITIGATION STRATEGY INFORMATION

Proposal Name:

Groundwater Basin Management

Proposal Location:

District's service area

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
X	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
X	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
X	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

Drought can and has been a very real hazard to the District because it is in the business of selling water to customers. If there is less local water available to sell, the District incurs higher costs due to purchases of imported water. Southern California has a history of severe droughts. There have been six severe extended droughts within the last 400 years (the most severe drought lasted from approximately 1650 to 1700). Recent droughts include 1976-77 and 1987-92. The District has adopted a water conservation ordinance that established the policy and conservation measures needed during drought conditions. The U.S. Weather Service is forecasting 20 more years of below average rainfall. If the current drought extends for the period that the U.S. Weather Service is currently forecasting, the District may have difficulty in meeting its water supply demands.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

Optimize the groundwater management plan for the District with a goal to generate more future water supply to the District's customers. This will be completed in two phases. The first phase will be a study to evaluate the potential alternatives for optimizing the groundwater management plan and generate recommendations on construction projects to implement to complete the optimization. The second phase will be the design and construction of the recommended projects to optimize the groundwater management plan. Projects could include recharging the aquifers with raw and/or recycled water, generating more recycled water by expanding the recycled water treatment plant, or selling more recycled water to customers to reduce potable water demands.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #2

Jurisdiction:	Rancho California Water District
Contact:	Andy Webster
Phone:	(951) 296-6900

MITIGATION STRATEGY INFORMATION

Proposal Name:

Fire Resistant Vegetation

Proposal Location:

All facilities owned by the District.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
X	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

	List any previous disaster related events (dates, costs, etc)
Proposal/Event History	While the District's only damage caused from fire has been minor (one reservoir's paint was burned), there have been some major wildfires around the District's service area.

Description of Mitigation Goal Narrative:	Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.
	For all the District's facilities, to reduce potential fire hazard, vegetation should be adequately irrigated and consist of fire resistant landscape, if possible. Also, there should be a setback from the facility to any native vegetation, susceptable to burning, to minimize the potential for fire damage.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #3

Jurisdiction: Rancho California Water District
Contact: Andy Webster
Phone: (951) 296-6900

MITIGATION STRATEGY INFORMATION

Proposal Name:

Harden Facilities for Earthquake

Proposal Location:

Pump Stations within the District's service area.

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
X	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

While there have been many earthquakes in and around the District's service area, fortunately, no earthquakes have caused damage to any of the District's facilities at this time. However, there are several earthquake faults within the District's service area. The consequencs of a major earthquake from these faults could be damaging to the District's facilities.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

For the District's pump stations, the facilities should be evaluated and then hardened against potential earthquake movement. This may include bolting down the MCC cabinet and fuel storage tanks (if applicable). Also, flexible couplings may be added to critical pipelines joints entering/exiting the facility.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	Y	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #4

Jurisdiction:	Rancho California Water District
Contact:	Andy Webster
Phone:	(951) 296-6900

MITIGATION STRATEGY INFORMATION

Proposal Name:

Reservoir Inlet Seismic Retrofit

Proposal Location:

Rancho California Water District reservoir sites

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
X	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
X	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

While there have been many earthquakes in and around the District's service area, fortunately, no earthquakes have caused damage to any of the District's facilities at this time. However, there are several earthquake faults within the District's service area. The consequencs of a major earthquake from these faults could be damaging to the District's facilities.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

For the District's steel tank reservoirs, retrofit the inlet/outlet with a flexible coupling to allow movement of the inlet/outlet piping relative to the tank during an earthquake. This would eliminate the likelyhood of the piping shearing and the tank draining and flooding property downstream of the reservoir. The District has 39 steel reservoirs and 13 of the reservoirs already have the flexible coupling, leaving 26 reservoirs to be retrofitted.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL #5

Jurisdiction: Rancho California Water District
Contact: Andy Webster
Phone: (951) 296-6900

MITIGATION STRATEGY INFORMATION

Proposal Name:

Reservoir Inlet Seismic Retrofit

Proposal Location:

Rancho California Water District reservoir sites

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
X	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
X	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History

List any previous disaster related events (dates, costs, etc)

While there have been many earthquakes in and around the District's service area, fortunately, no earthquakes have caused damage to any of the District's facilities at this time. However, there are several earthquake faults within the District's service area. The consequencs of a major earthquake from these faults could be damaging to the District's facilities.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

For the District's steel tank reservoirs, retrofit the inlet/outlet with a flexible coupling to allow movement of the inlet/outlet piping relative to the tank during an earthquake. This would eliminate the likelyhood of the piping shearing and the tank draining and flooding property downstream of the reservoir. The District has 39 steel reservoirs and 13 of the reservoirs already have the flexible coupling, leaving 26 reservoirs to be retrofitted.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

X	Unfunded project - funds are not available for the project at this time
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Rancho California Water District**	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __XX__**		
Current Population in Jurisdiction or Served	105,000	Projected Population in Jurisdiction or Served - in 2010	125,000
Current Sq Miles in Jurisdiction or Served	156	Projected Sq Miles in Jurisdiction or Served - in 2010	156
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Resolution No. 91-5-8 – Water Conservation Program Emergency Response Plan	
What is the number one land issue your agency will face in the next five years	Not Applicable (N/A)		
Approximate Number of Homes/Apts/etc.	None	Projected Number of Homes/Apts/etc.- in 2010	None
Approximate Total Residential Value	N/A	Projected Residential Total Value - in 2010	N/A
Approximate Number of Commercial Businesses	None	Projected Number of Commercial Businesses - in 2010	None
Approximate Percentage of Homes/Apts/etc in flood hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in flood hazard zones	N/A	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in earthquake hazard zones	N/A	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	N/A	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	N/A
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	20-25	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	20-25
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	122	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	125
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Human, technical, and fiscal resources available are:
The jurisdiction has standards that are published in the "Standard Specifications and Standard Drawings for Water and Sanitary Sewer Facilities" dated 7/1/1999.

The jurisdiction hired an engineering consultant, Kennedy/Jenks, to assist in the development of their Hazard Mitigation Plan. Kennedy/Jenks Consultants has been providing engineering services to a wide range of municipal clients since 1919, and employs more than 400 professionals from offices throughout the West. The jurisdiction has worked with Kennedy/Jenks for many years and the consultant is familiar with the jurisdiction's facilities and also the various tools, such as HAZUS, that can be used to complete the Hazard Mitigation Plan.

Fiscal resources for the Jurisdiction include the following:

- revenue from water sales
- fees for new facilities from local developers
- meter availability charges on undeveloped property
- a percentage of local property taxes
- Federal and State Agency grants and loans
- investment income
- if necessary, local bond measures

Local mitigation funding possibilities:
Through the California Department of Water Resources, local grants and/or loans are available for water conservation, groundwater management, and studies and activities to enhance local water supply reliability. Proposal eligibility depends on the type of organization(s) applying and participating in the project and the specific type of study or project. More than one grant or loan may be appropriate for a proposed activity. The following website lists the index of potential grants for the Jurisdiction: www.grantsloans.water.ca.gov/index.cfm.

The Jurisdiction currently documents the comprehensive land use planning and capital improvements planning using a Water Facilities Master Plan, which was last updated by the Jurisdiction in September 1997. In general, the Jurisdiction's Water Facilities Master Plan is updated every 10-15 years, along with the updated land use plans and recommended capital improvement programs.
After the Jurisdiction officially adopts the Hazard Mitigation Plan, the Jurisdiction will use the Water Facilities Master Plan mechanism to have the mitigation strategies integrated into it. Specifically, the capital improvement planning that occurs in the future will contribute to the goals in the Hazard Mitigation Plan. The planning committee for the Hazard Mitigation Plan will work with the capital improvement planners to implement high benefit/low cost mitigation projects.

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Rancho California Water District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan:** **Riverside County OES**	**Date of Completion:** **September 10, 2004**
Local Point of Contact: **Andrew Webster**	**Address:** **42135 Winchester Road** **PO Box 9017** **Temecula, Ca 92589-9017**	
Title: **Planning & Capital Projects Manager**		
Agency: **Rancho California Water District**		
Phone Number: **(951) 296-6900**	**E-Mail:** **WebsterA@ranchowater.com**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and	Part II - Rancho California Water	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	District Section Supplemental Questionnaire		***"Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II - Rancho California Water District Section Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Part II - Rancho California Water District Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II - Rancho California Water District Section Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I, Earthquakes: pages 54-66; Flood: pages 41-53; Wildland fire: pages 28-40; Extreme weather: pages 67-76 and Part II Rancho California Water District Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II Rancho California Water District Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part I, Earthquakes: pages 54-66; Flood: pages 41-53; Wildland fire: pages 28-40; Extreme weather: pages 67-76	**[N] [S]**	

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part I, Earthquakes: pages 61-64; Flood: pages 48-50; Wildland fire: pages 34-37; Extreme weather: pages 72-76	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part I, Earthquakes: pages 61-64; Flood: pages 48-50; Wildland fire: pages 34-37; Extreme weather: pages 72-76	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part I, page 24-27 and Part II - Rancho California Water District Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II - Rancho California Water District Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143 and Part II - Rancho California Water District Supplemental Questionnaire	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDED COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

San Gorgonio Pass Water Agency

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		San Gorgonio Pass Water Agency		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Administrative Assistant		
First Name:	Peg	Last Name:	Noble	
Agency Address:	Street:	1210 Beaumont Ave.		
	City:	Beaumont		
	State:	CA		
	Zip:	92223		
Contact Phone	951 845-2577	FAX	951 845-0281	
E-mail	pnoble@sgpwa.com			

Population Served	54,000
Square Miles Served	220

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	NO
What year was your plan last updated?	11/1/1993

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	11/1/1993
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	**YES**
AIRPORT NEXT TO JURISDICTION	**NO**
DAIRY INDUSTRY	**NO**
POULTRY INDUSTRY	**NO**
CROPS/ORCHARDS	**YES**
DAMS IN JURISDICTION	**NO**
DAMS NEXT TO JURISDICTION	**NO**
LAKE/RESERVOIR IN JURISDICTION	**NO**
LAKE/RESERVOIR NEAR JURISDICTION	**NO**
JURISDICTION IN FLOOD PLAIN	**YES**
CONTROLLED FLOOD CONTROL CHANNEL	**NO**
UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
EARTHQUAKE FAULTS IN JURISDICTION	**YES**
EARTHQUAKE FAULTS NEXT TO JURISDICTION	**YES**
MOBILE HOME PARKS	**YES**
NON-REINFORCED FREEWAY BRIDGES	**NO**
NON-REINFORCED BRIDGES	**NO**
BRIDGES IN FLOOD PLAIN	**NO**
BRIDGES OVER OR ACROSS RIVER/STREAM	**NO**
ROADWAY CROSSING RIVER/STREAM	**NO**
NON REINFORCED BUILDINGS	**NO**
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	**YES**
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	**YES**
FOREST AREA IN JURISDICTION	**YES**
FOREST AREA NEXT TO JURISDICTION	**YES**
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	**NO**
MAJOR GAS/OIL PIPELINES IN JURISDICTION	**NO**
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	**NO**
RAILROAD TRACKS IN JURISDICTION	**YES**
RAILROAD TRACKS NEXT TO JURISDICTION	**YES**
HAZARDOUS WASTE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	**NO**
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	**NO**

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**YES**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**YES**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	NO
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	NO
NEAR RAILROAD TRACKS	NO
NEAR A DAM	NO
UPSTREAM FROM A DAM	NO
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	NO
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	NO
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary				
Jurisdiction	**Hazard Type**	**Hazard Name**	**In Jurisdiction?**	**Adjacent to Jurisdiction?**
San Gorgonio Pass Water Agency	Fault	unknown	Yes	Yes
San Gorgonio Pass Water Agency	Flood Channel	unknown	Yes	Yes
San Gorgonio Pass Water Agency	Pipeline	East Branch Extension of SWP	Yes	Yes
San Gorgonio Pass Water Agency	Railroad Track	unknown	Yes	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Peg Noble AGENCY: San Gorgonio Pass Water Agency DATE: 6/30/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	**3**	**3**	**1**
WILDLAND FIRE	3	4	**3**	**4**	**8**
FLOOD	3	3	**2**	**3**	**2**
OTHER NATURAL HAZARDS					
DROUGHT	3	3	**2**	**3**	**9**
LANDSLIDES	2	3	**2**	**2**	**15**
INSECT INFESTATION	3	4	**2**	**2**	**16**
EXTREME SUMMER/WINTER WEATHER	2	4	**2**	**3**	**10**
SEVERE WIND EVENT	3	3	**2**	**3**	**11**
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	**2**	**2**	**17**
TERRORISM	4	2	**2**	**2**	**18**
OTHER MAN-MADE					
Failure of PIPELINE	2	3	**2**	**2**	**3**
Failure of AQUEDUCT	2	3	**2**	**2**	**4**
Stoppage of TRANSPORTATION	2	4	**2**	**0**	**19**
BLACKOUTS	3	4	**2**	**3**	**5**
HAZMAT ACCIDENTS	3	3	**2**	**3**	**6**
NUCLEAR ACCIDENT	4	2	**2**	**1**	**7**
TERRORISM	4	2	**2**	**2**	**12**
CIVIL UNREST	2	2	**2**	**2**	**13**
JAIL/PRISON EVENT	1	2	**2**	**2**	**14**
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

L	Aggressive public education campaign in light of predictions
L	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
L	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
N/A	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
N/A	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
N/A	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
N/A	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)

N/A	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
N/A	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

L	Communications Interoperability
L	Harden repeater sites
M	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
M	Redundancy
N/A	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
	Public education on locations of flood plains
	Develop multi-jurisdictional working group on floodplain management
	Develop greenbelt requirements in new developments
	Update weather pattern/flood plain maps
	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
	Required water flow/runoff plans for new development
	Perform GIS mapping of flood channels, etc.
	Install vehicular crossing gates/physical barriers for road closure
	Maintenance of storm sewers/flood channels
	Create map of flood channels/diversions/water systems etc
	Require digital floor plans on new non-residential construction

	Upgrade dirt embankments to concrete
	Conduct countywide needs study on drainage capabilities
	Increase number of pumping stations
	Increase sandbag distribution capacities
N/A	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage
	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
L	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
N/A	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
N/A	Acquisition of property for on-site retention
	Evaluate regulations on roof drainage mechanisms
	Erosion-resistant plants
	Traffic light protection
N/A	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

M	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
M	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment

N/A	Fire spotter program/red flag program
	◊ Expand to other utilities
L	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
N/A	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
M	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
	Establish FEMA coordination processes based on ICS
	Brush clearings around repeaters
	Research new technologies for identifying/tracking fires
	Procure/deploy backup communications equipments
	"Red Tag" homes in advance of event
	Provide fire-resistant gel to homeowners
	Involve insurance agencies in mitigation programs
	Clear out abandoned vehicles from oases
	Code enforcement
	Codes prohibiting fireworks
	Fuel modification/removal
	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
M	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
M	Increase County Vector Control capacities
M	General public drought awareness
	◊ Lawn watering rotation
M	Develop County drought plan
N/A	Mitigation of landslide-prone areas
	Develop winter storm sheltering plan
	Ease permitting process for building transmission lines
	Evaluate restrictions on dust/dirt/generating activities during wind seasons
	Rotational crop planning/soil stabilization

	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
H	Public education on low water landscaping
N/A	Salton Sea desalinization
M	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
L	Vulnerability assessment on fiber-optic cable
H	Upgrade valves on California aqueduct
N/A	Public education
	◊ Bi-lingual signs
	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: San Gorgonio Pass Water Agency	
Contact:	Peg Noble
Phone:	951 845-2577

MITIGATION STRATEGY INFORMATION

Proposal Name:

Earthquake Early Warning System

Proposal Location:

1210 Beaumont Ave., Beaumont, CA 92223

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

The San Grogonio Pass Water Agency water system is controlled through a central control station. The control station has the ability to remotely control the flow of water through Agency pipelines. In past earthquakes, there has been a delay in controlling the water flow after an earthquake has occurred.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The proposed mitigation strategy is to install an earthquake early warning device in the control station to allow operators to begin to react to an earthquake before the earthquake actually occurs. Although the pre-alert time may only be a few minutes, it is felt that those extra minutes can be used to start the process of controlling the water flow in the pipeline, reducing the potential for a large loss of water or pipeline damage. The cost of the system upgrade greatly out weighs the potential loss of property should the pipeline be damaged in an earthquake.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	x	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **San Gorgonio Pass Water Agency**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO XX_____**	
Current Population in Jurisdiction or Served	53,800	Projected Population in Jurisdiction or Served - in 2010	68,800
Current Sq Miles in Jurisdiction or Served	220	Projected Sq Miles in Jurisdiction or Served - in 2010	220
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	No	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	Obtaining suitable land for spreading and banking State Water Proposal water.		
Approximate Number of Homes/Apts/etc.		Projected Number of Homes/Apts/etc.- in 2010	
Approximate Total Residential Value		Projected Residential Total Value - in 2010	
Approximate Number of Commercial Businesses		Projected Number of Commercial Businesses - in 2010	
Approximate Percentage of Homes/Apts/etc in flood hazard zones		Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones		Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones		Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in flood hazard zones		Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in earthquake hazard zones		Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones		Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	3
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	2	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	5
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	1
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **San Gorgonio Pass Water Agency**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County**	**Date of Completion: 9/27/04**
Local Point of Contact: Peg Noble	**Address:** **1210 Beaumont Ave.** **Beaumont, CA 92223**	
Title: Administrative Assistant		
Agency: San Gorgonio Pass Water Agency		
Phone Number: 951 845-2577	**E-Mail: pnoble@sgpwa.com**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, San Gorgonio Pass Water Agency Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, San Gorgonio Pass Water Agency Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	San Gorgonio Pass Water Agency Section, Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, San Gorgonio Pass Water Agency Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Nuclear incidents Pgs 125 – 128 Part II, San Gorgonio Pass Water Agency Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II, San Gorgonio Pass Water Agency Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & San Gorgonio Pass Water Agency Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*

MITIGATION STRATEGY				
Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, San Gorgonio Pass Water Agency Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Valley Sanitary District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Valley Sanitary District		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	General Manager		
First Name:	Rex	Last Name:	Sharp	
Agency Address:	Street:	45-500 Van Buren Street		
	City:	Indio		
	State:	CA		
	Zip:	92201		
Contact Phone	760 347-2356		FAX	760 347-9979
E-mail	vsdrex@uia.net			

Population Served	52,000	Square Miles Served	20

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	6/1/1999

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	6/1/1999
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	NO

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	NO
AIRPORT NEXT TO JURISDICTION	NO
DAIRY INDUSTRY	NO
POULTRY INDUSTRY	NO
CROPS/ORCHARDS	NO
DAMS IN JURISDICTION	NO
DAMS NEXT TO JURISDICTION	NO
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	NO
UNCONTROLLED FLOOD CONTROL CHANNEL	NO
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	NO
NON-REINFORCED BRIDGES	NO
BRIDGES IN FLOOD PLAIN	NO
BRIDGES OVER OR ACROSS RIVER/STREAM	NO
ROADWAY CROSSING RIVER/STREAM	NO
NON REINFORCED BUILDINGS	NO
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	NO
FOREST AREA NEXT TO JURISDICTION	NO
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	NO
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	NO

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**YES**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	**NO**
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	**NO**
NEAR FLOOD PLAIN	**NO**
NEAR RAILROAD TRACKS	**NO**
NEAR A DAM	**NO**
UPSTREAM FROM A DAM	**NO**
DOWNSTREAM FROM A DAM	**NO**
DOWNSTREAM OF A LAKE	**NO**
DOWNSTREAM FROM A RESERVOIR	**NO**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**NO**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**NO**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**NO**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**NO**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**NO**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**NO**
NEAR A HAZARDOUS STORAGE FACILITY	**NO**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**NO**

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	**YES**
COULD BE CONSIDERED A BIO-HAZARD RISK	**NO**

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Valley Sanitary District	Aqueduct	All-American Canal	Yes	Yes
Valley Sanitary District	Fault	Banning/Mission Creek	Yes	Yes
Valley Sanitary District	Flood Channel	Whitewater Storm Channel	Yes	Yes
Valley Sanitary District	Hazmat Storage Location	Chlorine	Yes	No
Valley Sanitary District	Pipeline	High pressure liquid refined petroleum	Yes	Yes
Valley Sanitary District	Railroad Track	Southern Pacific	Yes	Yes
Valley Sanitary District	Reservoir	Various City domestic tank reservoirs	Yes	Yes

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Rex Sharp AGENCY: Valley Sanitary District DATE: 6/23/04

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	4	3	1
WILDLAND FIRE	3	4	1	2	13
FLOOD	3	3	3	3	5
OTHER NATURAL HAZARDS					
DROUGHT	3	3	0	2	14
LANDSLIDES	2	3	0	1	18
INSECT INFESTATION	3	4	2	3	12
EXTREME SUMMER/WINTER WEATHER	2	4	2	4	9
SEVERE WIND EVENT	3	3	3	3	6
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	2	17
TERRORISM	4	2	0	2	15
OTHER MAN-MADE					
PIPELINE	2	3	3	2	10
AQUEDUCT	2	3	3	2	11
TRANSPORTATION	2	4	3	3	8
BLACKOUTS	3	4	2	4	7
HAZMAT ACCIDENTS	3	3	4	2	3
NUCLEAR ACCIDENT	4	2	4	2	4
TERRORISM	4	2	4	3	2
CIVIL UNREST	2	2	2	1	16
JAIL/PRISON EVENT	1	2	0	1	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

L	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
M	◊ Government employees
L	◊ Businesses
L	◊ Hotel/motel literature
L	◊ Local radio stations for education
L	◊ Public education via utilities
L	◊ Identify/create television documentary content
H	Improve the Emergency Alert System (EAS)
H	◊ Consider integration with radio notification systems
NA	◊ Upgrade alerting and warning systems for hearing impaired
M	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
H	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
NA	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
NA	Install earthquake cutoffs at reservoirs
L	Install earthquake-warning devices at critical facilities
NA	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
M	◊ Bridges/dams/pipelines
H	◊ Government buildings/schools
NA	◊ Mobile home parks
NA	Develop educational materials on structural reinforcement and home inspections
M	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
M	Insurance coverage on public facilities
NA	Funding for non-structural abatement (Earthquake kits, etc.)
NA	Pre - identify empty commercial space for seismic re-location

M	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
M	Mapping of liquefaction zones
NA	Incorporate County geologist data into planning
NA	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
L	Pre-positioning of temporary response structures
NA	Fire sprinkler ordinance for all structures
NA	Evaluate adequacy of reservoir capacity for sprinkler systems
NA	Training/standardization for contractors performing retrofitting
NA	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
NA	◊ Alerting information
NA	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
M	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

M	Communications Interoperability
NA	Harden repeater sites
NA	Continue existing interoperability project
NA	Strengthen/harden
NA	Relocate
M	Redundancy
NA	Mobile repeaters

FLOODS

L	Update development policies for flood plains
NA	Public education on locations of flood plains
NA	Develop multi-jurisdictional working group on floodplain management
NA	Develop greenbelt requirements in new developments
NA	Update weather pattern/flood plain maps
M	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
NA	Perform GIS mapping of flood channels, etc.
NA	Install vehicular crossing gates/physical barriers for road closure
NA	Maintenance of storm sewers/flood channels
NA	Create map of flood channels/diversions/water systems etc
NA	Require digital floor plans on new non-residential construction
NA	Upgrade dirt embankments to concrete

M	Conduct countywide needs study on drainage capabilities
NA	Increase number of pumping stations
NA	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
NA	◊ Evacuation documentation
NA	◊ Re-examine historical flooding data for potential street re-design
NA	Training for city/county PIOs about flood issues
H	Warning systems - ensure accurate information provided
NA	◊ Publicize flood plain information (website?)
NA	◊ Install warning/water level signage
NA	◊ Enhanced public information
NA	◊ Road closure compliance
NA	◊ Shelter locations
H	◊ Pre-event communications
NA	Look at County requirements for neighborhood access
NA	◊ Secondary means of ingress/egress
NA	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
NA	Hardening water towers
NA	Terrorism Surveillance - cameras at reservoirs/dams
NA	Riverbed maintenance
NA	Evaluate existing lift stations for adequacy
NA	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanisms
NA	Erosion-resistant plants
NA	Traffic light protection
H	Upkeep of diversionary devices
NA	Install more turn-off valves on pipelines
M	Backup generation facilities
NA	Identify swift water rescue capabilities across County

WILDFIRES

NA	Aggressive weed abatement program
NA	◊ Networking of agencies for weed abatement
NA	Develop strategic plan for forest management
NA	Public education on wildfire defense
NA	Encourage citizen surveillance and reporting
NA	Identify hydrants with equipment ownership information
NA	Enhanced fire fighting equipment
NA	Fire spotter program/red flag program

NA	◊ Expand to other utilities
NA	Research on insect/pest mitigation technologies
NA	Volunteer home inspection program
NA	Public education program
NA	◊ Weather reporting/alerting
NA	◊ Building protection
NA	◊ Respiration
NA	Pre-identify shelters/recovery centers/other resources
NA	Roofing materials/defensive spacing regulations
NA	Community task forces for planning and education
NA	Fuel/dead tree removal
NA	Strategic pre-placement of fire fighting equipment
NA	Establish FEMA coordination processes based on ICS
NA	Brush clearings around repeaters
NA	Research new technologies for identifying/tracking fires
NA	Procure/deploy backup communications equipments
NA	"Red Tag" homes in advance of event
NA	Provide fire-resistant gel to homeowners
NA	Involve insurance agencies in mitigation programs
NA	Clear out abandoned vehicles from oases
NA	Code enforcement
NA	Codes prohibiting fireworks
NA	Fuel modification/removal
NA	Evaluate building codes
NA	Maintaining catch basins

OTHER HAZARDS

NA	Improve pipeline maintenance
H	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
NA	Increase County Vector Control capacities
NA	General public drought awareness
NA	◊ Lawn watering rotation
NA	Develop County drought plan
NA	Mitigation of landslide-prone areas
NA	Develop winter storm sheltering plan
NA	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
NA	Rotational crop planning/soil stabilization
NA	Enhance agricultural checkpoint enforcement
NA	Agriculture - funding of detection programs

NA	Communications of pipeline maps (based on need to know)
NA	Improved notification plan on runaway trains
NA	Improve/maintain blackout notification plan.
NA	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
H	◊ Staffing for terrorism mitigation
NA	Create a SONGS regional planning group
NA	◊ Include dirty bomb planning
NA	Cooling stations - MOUs in place
NA	Fire Ant eradication program
NA	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
NA	Public education on low water landscaping
NA	Salton Sea desalinization
NA	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
NA	Vulnerability assessment on fiber-optic cable
NA	Upgrade valves on California aqueduct
NA	Public education
NA	◊ Bi-lingual signs
NA	◊ Blackout information
NA	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
NA	Develop prison evacuation plan (shelter in place?)

ADDITIONAL MITIGATION EFFORTS FROM SUBMITTING JURISDICTION:

Evaluate replacement of hazardous onsite chemicals with safer alternative.

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:	Valley Sanitary District
Contact:	Rex Sharp
Phone:	(760) 347-2356

MITIGATION STRATEGY INFORMATION

Proposal Name:

Hypochlorite Disinfection Upgrade Proposal

Proposal Location:

45-500 Van Buren Street, Indio, CA

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
X	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History

There have not been any disaster related events with the existing chlorination system. Currently gaseous chlorine is used for disinfection of treatment plant effluent. Because of the hazards associated with gaseous chlorine, the conversion to a safer alternative is being pursued. In addition, the structure housing the gaseous chlorine system may not meet current building codes.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the project, any history related to the project. List the activities necessary for its completion in the narrative section below.

The proposed mitigation strategy is to eliminate the use of gaseous chlorine for treatment plant usage and replace gaseous chlorine with a safer alternative. The likely alternative to gaseous chlorine will be sodium hypochlorite (bleach). This will involve the design and construction of a new structure to house the sodium hypochlorite and equipment needed to store and deliver the sodium hypochlorite into the treament plant effluent.

Does your jurisdiction have primary responsibility for the project? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this project

	Unfunded project - funds are not available for the project at this time
X	Local jurisdiction General Fund
X	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

Y	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Valley Sanitary District**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO __X__**	
Current Population in Jurisdiction or Served	52,000	Projected Population in Jurisdiction or Served - in 2010	78,000
Current Sq Miles in Jurisdiction or Served	20	Projected Sq Miles in Jurisdiction or Served - in 2010	22
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	No	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	N/A		
Approximate Number of Homes/Apts/etc.	17,000	Projected Number of Homes/Apts/etc.- in 2010	25,500
Approximate Total Residential Value	$2.5 Billion	Projected Residential Total Value - in 2010	$3.8 Billion
Approximate Number of Commercial Businesses	4,900	Projected Number of Commercial Businesses - in 2010	7,400
Approximate Percentage of Homes/Apts/etc in flood hazard zones	80	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	50
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	100	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	100
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	0	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	0
Approximate Percentage of Commercial Businesses in flood hazard zones	80	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	50
Approximate Percentage of Commercial Businesses in earthquake hazard zones	100	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	100
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	1	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	1	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	1
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	0	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	0
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans/

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Valley Sanitary District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County**	**Date of Completion**
Local Point of Contact: **Rex Sharp**	**Address:** **45-500 Van Buren Street** **Indio, CA 92201**	
Title: **General Manager**		
Agency: **Valley Sanitary District**		
Phone Number: **760 347-2356**	**E-Mail:** **vsdrex@uia.net**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**	**Plan Maintenance Process**	**N**	**S**

Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	**N**	**S**
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	**N**	**S**
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	**N**	**S**
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

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PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, page 6** **Part II, Valley Sanitary District Section**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	No	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Valley Sanitary District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT		Part II, Valley Sanitary District Section		
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).			
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**Yes** Part II, Valley Sanitary District Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				

Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Part II, Valley Sanitary District Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.			
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part II, Valley Sanitary District Section	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.			

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY INVENTORY

Western Municipal Water District

HAZARD IDENTIFICATION AND SUMMARY WORKSHEET

PLEASE PROVIDE THE FOLLOWING INFORMATION

Agency/Jurisdiction:		Western Municipal Water District		
Type Agency/Jurisdiction:		Other Agency		
Contact Person:	Title:	Civil Engineer		
First Name:	Joe	Last Name:	McCann	
Agency Address:	Street:	450 Alessandro Blvd.		
	City:	Riverside		
	State:	CA		
	Zip:	92508		
Contact Phone	951-789-5067		FAX	951-780-3837
E-mail	jmccann@wmwd.com			

Population Served	600,000	Square Miles Served	510

Does your organization have a general plan?	YES
Does your organization have a safety component to the general plan?	YES
What year was your plan last updated?	1/17/1996

Does your organization have a disaster/emergency operations plan?	YES
What year was your plan last updated?	1/17/1996
Do you have a recovery annex or section in your plan?	NO
Do you have a terrorism/WMD annex or section in your plan?	YES

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:

AIRPORT IN JURISDICTION	YES
AIRPORT NEXT TO JURISDICTION	YES
DAIRY INDUSTRY	YES
POULTRY INDUSTRY	YES
CROPS/ORCHARDS	YES
DAMS IN JURISDICTION	YES
DAMS NEXT TO JURISDICTION	YES
LAKE/RESERVOIR IN JURISDICTION	YES
LAKE/RESERVOIR NEAR JURISDICTION	YES
JURISDICTION IN FLOOD PLAIN	YES
CONTROLLED FLOOD CONTROL CHANNEL	YES
UNCONTROLLED FLOOD CONTROL CHANNEL	YES
EARTHQUAKE FAULTS IN JURISDICTION	YES
EARTHQUAKE FAULTS NEXT TO JURISDICTION	YES
MOBILE HOME PARKS	YES
NON-REINFORCED FREEWAY BRIDGES	YES
NON-REINFORCED BRIDGES	YES
BRIDGES IN FLOOD PLAIN	YES
BRIDGES OVER OR ACROSS RIVER/STREAM	YES
ROADWAY CROSSING RIVER/STREAM	YES
NON REINFORCED BUILDINGS	YES
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	YES
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	YES
FOREST AREA IN JURISDICTION	YES
FOREST AREA NEXT TO JURISDICTION	YES
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	YES
MAJOR GAS/OIL PIPELINES IN JURISDICTION	YES
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	YES
RAILROAD TRACKS IN JURISDICTION	YES
RAILROAD TRACKS NEXT TO JURISDICTION	YES
HAZARDOUS WASTE FACILITIES IN JURISDICTION	NO
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	NO
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	YES
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	YES

DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY

IN A FLOOD PLAIN	**YES**
NEAR FLOOD PLAIN	**YES**
NEAR RAILROAD TRACKS	**YES**
NEAR A DAM	**YES**
UPSTREAM FROM A DAM	**YES**
DOWNSTREAM FROM A DAM	**YES**
DOWNSTREAM OF A LAKE	**YES**
DOWNSTREAM FROM A RESERVOIR	**YES**
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	**YES**
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	**YES**
ON AN EARTHQUAKE FAULT	**NO**
NEAR AN EARTHQUAKE FAULT	**YES**
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	**YES**
IN A FOREST AREA	**NO**
NEAR A FOREST AREA	**NO**
NEAR A MAJOR HIGHWAY	**YES**
A HAZARDOUS WASTE FACILITY	**NO**
NEAR A HAZARDOUS WASTE FACILITY	**NO**
A HAZARDOUS STORAGE FACILITY	**YES**
NEAR A HAZARDOUS STORAGE FACILITY	**YES**
NON REINFORCED BUILDINGS	**NO**
A MAJOR GAS/OIL PIPELINE	**NO**
NEAR A MAJOR GAS/OIL PIPELINE	**YES**

DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:

HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	**NO**
HAVE BEEN DAMAGED BY FLOOD	**NO**
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE	**NO**
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	**NO**
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	**NO**
HAVE BEEN IMPACTED BY A PIPELINE EVENT	**NO**

EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	YES
IS YOUR EOC LOCATED:	
IN A FLOOD PLAIN	NO
NEAR FLOOD PLAIN	YES
NEAR RAILROAD TRACKS	NO
NEAR A DAM	YES
UPSTREAM FROM A DAM	YES
DOWNSTREAM FROM A DAM	NO
DOWNSTREAM OF A LAKE	NO
DOWNSTREAM FROM A RESERVOIR	NO
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	NO
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	NO
ON AN EARTHQUAKE FAULT	NO
NEAR AN EARTHQUAKE FAULT	NO
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	YES
IN A FOREST AREA	NO
NEAR A FOREST AREA	NO
NEAR A MAJOR HIGHWAY	NO
A HAZARDOUS WASTE FACILITY	NO
NEAR A HAZARDOUS WASTE FACILITY	NO
A HAZARDOUS STORAGE FACILITY	NO
NEAR A HAZARDOUS STORAGE FACILITY	NO
NON REINFORCED BUILDINGS	NO
A MAJOR GAS/OIL PIPELINE	NO
NEAR A MAJOR GAS/OIL PIPELINE	NO

OTHER FACILITY INFORMATION	
ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:	
COULD BE CONSIDERED A TERRORIST TARGET	YES
COULD BE CONSIDERED A BIO-HAZARD RISK	YES

Specific Hazards Summary

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Western Municipal Water District	Hazmat Storage Location	Chlorine	Yes	No

Jurisdiction's Critical Facility Evaluation

In December of 2001, the County of Riverside, in cooperation with local jurisdictions and agencies, developed an Emergency Response Database. This database was created so emergency planners could use the database as a planning tool as well as quickly determine the potential impact an event may have on a community, district, or specific site. During the creation of the Emergency Response Database, contributors were asked to identify critical facilities within their jurisdictions under the following sections:

- Airports
- Community Colleges
- Dams
- Schools
  - Preschools
  - Elementary Schools
  - Middle Schools
  - High Schools
- Fire Stations
- Government Buildings
- Highways
- Hospitals
- Red Cross Shelters
- Law Enforcement Facilities
- Waste Management Sites
- Reservoirs / Water tanks

For each site, the user can identify at a minimum, the address of the site, the type of structure, and the type of occupancy and site contact information.

During the creation of this Multi-Jurisdictional Local Hazard Mitigation Plan, it was determined that the Emergency Response Database could provide vital information for this project and it would be utilized as the source for the identification of critical facilities within hazard areas. To ensure the most up-to-date data was used, all participants involved updated the critical facilities data at the beginning of the Hazard Mitigation Plan project. The critical facility list for this jurisdiction will be reviewed and updated regularly to ensure that the vulnerability of each location is evaluated on a regular basis.

Because of the sensitive nature of the data obtained through this process, address information will not be included in the identification of critical facilities for the protection of all participants.

LOCAL JURISDICTION VULNERABILITY WORKSHEET

NAME: Joe McCann AGENCY: Western Municipal Water District DATE: June 22, 2004

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	3	3	3	7
WILDLAND FIRE	3	4	1	4	14
FLOOD	3	3	3	3	8
OTHER NATURAL HAZARDS					
DROUGHT	3	3	4	3	2
LANDSLIDES	2	3	1	3	13
INSECT INFESTATION	3	4	0	4	18
EXTREME SUMMER/WINTER WEATHER	2	4	4	4	3
SEVERE WIND EVENT	3	3	3	3	9
AGRICULTURAL					
DISEASE/CONTAMINATION	3	4	0	4	16
TERRORISM	4	2	0	2	17
OTHER MAN-MADE					
PIPELINE	2	3	2	3	11
AQUEDUCT	2	3	4	3	5
TRANSPORTATION	2	4	2	4	12
BLACKOUTS	3	4	4	4	4
HAZMAT ACCIDENTS	3	3	3	3	10
NUCLEAR ACCIDENT	4	2	4	2	1
TERRORISM	4	2	4	2	6
CIVIL UNREST	2	2	1	2	15
JAIL/PRISON EVENT	1	2	0	2	19
OTHER - PLEASE DESCRIBE BELOW					

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE

M	Aggressive public education campaign in light of predictions
N/A	Generate new literature for dissemination to:
N/A	◊ Government employees
N/A	◊ Businesses
N/A	◊ Hotel/motel literature
N/A	◊ Local radio stations for education
N/A	◊ Public education via utilities
N/A	◊ Identify/create television documentary content
N/A	Improve the Emergency Alert System (EAS)
N/A	◊ Consider integration with radio notification systems
N/A	◊ Upgrade alerting and warning systems for hearing impaired
N/A	◊ Training and maintenance
M	Procure earthquake-warning devices for critical facilities
M	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
N/A	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
M	Evaluate EOCs for seismic stability
L	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
N/A	Develop a dam inundation plan for new Diamond Valley Reservoir
L	Earthquake retrofitting
L	◊ Bridges/dams/pipelines
N/A	◊ Government buildings/schools
N/A	◊ Mobile home parks
N/A	Develop educational materials on structural reinforcement and home inspections
N/A	Ensure Uniform Building Code compliance
N/A	◊ Update to current compliance when retrofitting
N/A	Insurance coverage on public facilities
N/A	Funding for non-structural abatement (Earthquake kits, etc.)

N/A	Pre - identify empty commercial space for seismic re-location
N/A	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
N/A	Mapping of liquefaction zones
L	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
N/A	Pre-positioning of temporary response structures
N/A	Fire sprinkler ordinance for all structures
N/A	Evaluate adequacy of reservoir capacity for sprinkler systems
N/A	Training/standardization for contractors performing retrofitting
N/A	Website with mitigation/contractor/retrofitting information
N/A	◊ Links to jurisdictions
N/A	◊ Alerting information
N/A	◊ Volunteer information
L	Evaluate depths of aquifers/wells for adequacy during quakes
N/A	Evaluate hazmat storage regulations near faults

COMMUNICATIONS IN DISASTER ISSUES

L	Communications Interoperability
L	Harden repeater sites
L	Continue existing interoperability project
L	Strengthen/harden
L	Relocate
L	Redundancy
L	Mobile repeaters

FLOODS

N/A	Update development policies for flood plains
N/A	Public education on locations of flood plains
N/A	Develop multi-jurisdictional working group on floodplain management
N/A	Develop greenbelt requirements in new developments
N/A	Update weather pattern/flood plain maps
N/A	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
N/A	Required water flow/runoff plans for new development
N/A	Perform GIS mapping of flood channels, etc.
N/A	Install vehicular crossing gates/physical barriers for road closure
N/A	Maintenance of storm sewers/flood channels
N/A	Create map of flood channels/diversions/water systems etc
N/A	Require digital floor plans on new non-residential construction

N/A	Upgrade dirt embankments to concrete
N/A	Conduct countywide needs study on drainage capabilities
N/A	Increase number of pumping stations
N/A	Increase sandbag distribution capacities
N/A	Develop pre-planned response plan for floods
N/A	◊ Evacuation documentation
N/A	◊ Re-examine historical flooding data for potential street re-design
N/A	Training for city/county PIOs about flood issues
N/A	Warning systems - ensure accurate information provided
N/A	◊ Publicize flood plain information (website?)
N/A	◊ Install warning/water level signage
N/A	◊ Enhanced public information
N/A	◊ Road closure compliance
N/A	◊ Shelter locations
N/A	◊ Pre-event communications
N/A	Look at County requirements for neighborhood access
N/A	◊ Secondary means of ingress/egress
N/A	Vegetation restoration programs
L	Ensure critical facilities are hardened/backed up
L	Hardening water towers
M	Terrorism Surveillance - cameras at reservoirs/dams
N/A	Riverbed maintenance
N/A	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
N/A	Evaluate regulations on roof drainage mechanisms
L	Erosion-resistant plants
N/A	Traffic light protection
N/A	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
M	Backup generation facilities
N/A	Identify swift water rescue capabilities across County

WILDFIRES

L	Aggressive weed abatement program
L	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
N/A	Public education on wildfire defense
N/A	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
N/A	Enhanced fire fighting equipment

N/A	Fire spotter program/red flag program
N/A	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
N/A	Volunteer home inspection program
N/A	Public education program
N/A	◊ Weather reporting/alerting
N/A	◊ Building protection
N/A	◊ Respiration
N/A	Pre-identify shelters/recovery centers/other resources
N/A	Roofing materials/defensive spacing regulations
N/A	Community task forces for planning and education
N/A	Fuel/dead tree removal
N/A	Strategic pre-placement of fire fighting equipment
N/A	Establish FEMA coordination processes based on ICS
L	Brush clearings around repeaters
N/A	Research new technologies for identifying/tracking fires
L	Procure/deploy backup communications equipments
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
N/A	Code enforcement
N/A	Codes prohibiting fireworks
N/A	Fuel modification/removal
N/A	Evaluate building codes
N/A	Maintaining catch basins

OTHER HAZARDS

M	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
N/A	Insect control study
N/A	Increase County Vector Control capacities
H	General public drought awareness
H	◊ Lawn watering rotation
M	Develop County drought plan
L	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
H	Ease permitting process for building transmission lines
N/A	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization

N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
L	Communications of pipeline maps (based on need to know)
N/A	Improved notification plan on runaway trains
N/A	Improve/maintain blackout notification plan.
L	Support business continuity planning for utility outages
M	Terrorism training/equipment for first responders
M	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
N/A	Create a SONGS regional planning group
N/A	◊ Include dirty bomb planning
N/A	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
H	Develop plan for supplemental water sources
H	Public education on low water landscaping
L	Salton Sea desalinization
L	Establish agriculture security standards (focus on water supply)
L	ID mutual aid agreements
N/A	Vulnerability assessment on fiber-optic cable
L	Upgrade valves on California aqueduct
N/A	Public education
N/A	◊ Bi-lingual signs
N/A	◊ Blackout information
N/A	Notification system for rail traffic - container contents
N/A	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: Western Municipal Water District
Contact: Joe McCann
Phone: (951) 789-5067

MITIGATION STRATEGY INFORMATION

Proposal Name:

Multiple Water Storage Tank Inlet/Oulet Retrofits

Proposal Location:

Various locations throughout western Riverside County

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

X	Flood and mud flow mitigation
X	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e. update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
X	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
X	Agriculture - crop related mitigation
X	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc)

Proposal/Event History	The District's water tanks are the primary facilities utilized for the provision of water service in its service area. This includes domestic supply, fire suppression, and agricultural demands, both crop and animal related. Without adequate water storage, the ability to provide for emergencies such as fire suppression is hindered. The District modified the inlet/outlet design connection for newer tanks approximately 15 years ago. Older tanks built before this new inlet/outlet design connection was initiated within the District are being retrofitted as funding allows. An incident of failure in supply lines being fed by these older tanks could reduce the storage ability by over 75%, significantly limiting drinking water and fire suppression supply. Eight of the District's 14 storage tanks still need to be retrofitted.

Description of Mitigation Goal Narrative:

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below.

The proposed mitigation strategy is to upgrade the existing inlet/outlet piping at eight tank sites located throughout the District. The upgrade of the system would include seismic protection against tank/pipe separation during a major earthquake event. The District's existing alert system already notifies the district of a immediate and high volume loss of water from storage tanks. The intlet/outlet piping retrofits incorporate valving that would automatically close, controlling the release of water from the tanks. By automatically closing the release valve, there would be a lower flood threat level to the roads and homes in the area of the break and the loss of water would be limited. The cost of the system upgraded greatly outways the potential loss of property and crops should the pipe be damaged in an earthquake.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal at this time
X	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
	Hazard Mitigation Funds

YES	Has your jurisdiction evaluated this mitigation strategy to determine it's cost benefits? (i.e. has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

LOCAL HAZARD MITIGATION ANALYSIS PROJECT
OPTIONAL COST-BENEFIT ANALYSIS WORKSHEET

Jurisdiction:	Western Municipal Water District
Contact:	Joe McCann
Phone:	(951) 789-5067
Proposal Name:	Multiple Water Storage Tank Inlet/Oulet Retrofits
Proposal Location:	Various locations throughout western Riverside County

Estimated Proposal Costs
List the projected total cost of the mitigation proposal. Although these are estimated costs, some care should be taken to ensure the values are as accurate and comprehensive as possible.

Benefit/Loss Costs *- The projected cost of the event should it happen.*
These costs are determined by projecting the potential damage and losses as a result of the event and include:

5. Direct Losses - Losses linked directly to a hazard event including response costs and all damages.

6. Indirect Losses - All losses other than direct losses and can include potential economic losses due to the closure of a damaged facilities, as well as non financial losses such as loss of historical resources, pain, and suffering.

LOSS/BENEFITS FACTORS

PROJECT COSTS (each tank)		(List potential losses – each tank)	NUMBERS	COST
Labor	$16,500	1. Structures		
Materials	$69,300	a. Destroyed	1 home	$225,000
Land Acquisition	$0	b. Damaged		
Contract Services	$34,320	2. Lives		
Other Costs (Please List):		a. Injured	1 person	$15,600
		b. Deceased		
		3. Agriculture		
		a. Animals Injured		
		b. Animals Deceased		
		c. Crops Destroyed	100 acres	$360,000
		4. Infrastructure		
		a. Destroyed		
		b. Damaged		
		5. Economic Loss		
		6. Response Costs		
		7. Other Losses or Costs (Please List)		
Total Proposal Cost:	$120,120.00	Total Loss Projection:		$600,600.00

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION: **Western Municipal Water District**		**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES _____ NO _X_**	
Current Population in Jurisdiction or Served	Approx. 600,000	Projected Population in Jurisdiction or Served - in 2010	Approx. 675,697
Current Sq Miles in Jurisdiction or Served	Approx. 510 sq. miles	Projected Sq Miles in Jurisdiction or Served - in 2010	Approx. 510 sq. miles
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Resolution 1542	
What is the number one land issue your agency will face in the next five years	Water Supply		
Approximate Number of Homes/Apts/etc.	200,000	Projected Number of Homes/Apts/etc.- in 2010	225,232
Approximate Total Residential Value	$40.8 Billion	Projected Residential Total Value - in 2010	$48.7 Billion
Approximate Number of Commercial Businesses	2,260	Projected Number of Commercial Businesses - in 2010	2,545
Approximate Percentage of Homes/Apts/etc in flood hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones	N/A	Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in flood hazard zones	N/A	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in earthquake hazard zones	N/A	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2010	N/A
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	N/A	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2010	N/A
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	8	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2010	9
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	2	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2010	2
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	58	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2010	69
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	YES	If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			YES

Supplement for all CA Local Government Jurisdictions participating in Multi-Jurisdictional, Local Hazard Mitigation Plans

Each separate jurisdiction participating in a Multi-Jurisdictional Plan, must a formally adopt the Multi-Jurisdictional Plan as their own LHMP. Even though a jurisdiction is "participating" in a multi-jurisdictional plan, EACH JURISDICTION must ensure that certain requirements of the Multi-Jurisdictional Plan have been met. Failure to do so MAY delay review and or approval of the multi-jurisdictional plan.

While each multi-jurisdictional plan must be a "stand alone" document upon completion, each jurisdiction must be aware of the information and requirements, unique to each participant, that must be provided in order for the multi-jurisdictional plan to be complete. The advantage for each local government in participating in a multi-jurisdictional plan is, among many, that most information and data (i.e. information, data, maps), may be shared by all participating jurisdictions.

The following "mini" Plan Review Crosswalk **should be completed by each participating jurisdiction** to document how and where information needed by the multi-jurisdictional planning effort, but specific to each participating jurisdiction, has been included.

Participating Jurisdiction: **Western Municipal Water District**	**Title/Lead Jurisdiction of Multi-Jurisdictional Plan: Riverside County OES**	**Date of Completion: September 8, 2004**
Local Point of Contact: Joseph R. McCann	**Address:** **450 Alessandro Blvd.** **Riverside, CA 92508**	
Title: Civil Engineer		
Agency: Western Municipal Water District		
Phone Number: (951) 789-5067	**E-Mail: jmccann@wmwd.com**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**

Jurisdiction's NFIP Status*			
Y	**N**	**N/A**	**CRS Class**

*** Notes: [Y] – Participating [N] - Not Participating [N/A] - Not Mapped**

SCORING SYSTEM: One of the following scores will be assigned to each of the following LHMP requirements.

N – Needs Improvement: The jurisdiction's portion of the multi-jurisdiction's plan does not meet the minimum for a plan requirement. Reviewer's comments must be provided.
S – Satisfactory: The jurisdiction's portion of the multi-jurisdiction's plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	**N/A**	**in MJP**
Local Capabilities Assessment §201.4(c)(ii) and §201.6(c)(1) (State Requirement)		

Multi-Jurisdictional Risk Assessment §201.6(c)(2)(iii)	N	S
Identifying Hazards (if applicable): §201.6(c)(2)(i)		
Profiling Hazards (if applicable): §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		

Mitigation Strategy	N	S
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	**N/A**	
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)	**N/A**	

Additional State Requirements*	N	S
See Planning Process, Local Capabilities Assessment	**N/A**	
Insert State Requirement here	**N/A**	

SUPPLEMENT STATUS

SUPPLEMENT HAS REQUIREMENTS THAT "NEED IMPROVEMENT"	

SUPPLEMENT REQUIREMENTS ARE ALL "SATISFACTORY"	

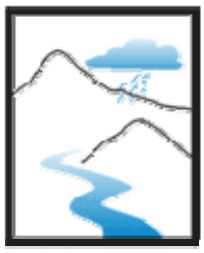
*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
PREREQUISITE (S)	NOTE: The prerequisite, or prerequisites in the case of multi-jurisdictional plans, may be reviewed before, but must be met before the plan can receive final FEMA approved.			
Multi-Jurisdictional Plan Adoption	Requirement §201.6(c)(5): ***Element B & C:*** For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must provide supporting documentation that it has been formally adopted by EACH participating jurisdiction.		[M] [NM]	
Multi-Jurisdictional Planning Participation	**Requirement §201.6(a)(3):** Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process. ***Element A***. Where in the MJP is this jurisdiction's participation, in the MJP development, documented?	**Part I, Section 2 Page 6**	[M] [NM]	
PLANNING PROCESS				
Documentation of the Planning Process	***Requirement*** - IFR §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:	N/A - Should be included in the MJP		
Local Capabilities Assessment	***Requirement*** – Section §201.4(c)(3) (ii) of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, "[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.	See Elements A-D below.		
Local Capabilities Assessment	*Element* A: Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local	Part II, Western Municipal Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

PLAN REVIEW CRITERIA	REQUIREMENT AS TAKEN FROM THE INTERIM FINAL RULE PART 201	LOCATION IN THE (MJP) MULTI JURISDICTIONAL PLAN (INDICATE SECTION OR ANNEX AND PAGE #)	SCORE / STATE / FEMA REVIEWER COMMENTS SCORING SYSTEM [M] MET [NM] NOT MET (FOR PREREQUISITE (S) ONLY) [N]--NEEDS IMPROVEMENT OR [S]--SATISFACTORY	
	hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).			
Local Capabilities Assessment	*Element* B: Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	Part II, Western Municipal Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* C: Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	Western Municipal Water District Section, Supplemental Questionnaire	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***
Local Capabilities Assessment	*Element* D: Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	Part II, Western Municipal Water District Section	**[N] [S]**	***Note: This information is required to complete the State Hazard Mitigation Plan and must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.***

RISK ASSESSMENT				
Multi-Jurisdictional Risk Assessment	Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess **each jurisdiction's** risks where they vary from the risks facing the entire planning area. It should be noted that the Vulnerability Assessments are almost always unique to each jurisdiction (EXAMPLE: For a county based MJP, a school district's vulnerability to a hazard is different than the city that it is in, and the city will have different vulnerabilities than that of the overall planning area (county).	Part I Flooding Pgs 41 – 53 Earthquakes Pgs 54 – 66 Extreme Weather Pgs 67 – 76 Hazmat incidents Pgs 94 – 101 Blackout Pgs 115 – 118 Nuclear incidents Pgs 125 – 128 Part II, Western Municipal Water District Section		
	Were unique Hazards & Hazard Profiles Included from this jurisdiction?	**[No]/[Yes]** If yes, where in MJP: Yes, Part II, Western Municipal Water District Section	**[N] [S]**	
	Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Part 1, Pages 19-139	**[N] [S]**	
	Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Part 1, Pages 19-139	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
	Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Part 1, Pages 24-27 & Western Municipal Water District Supplemental Questionnaire	**[N] [S]**	*Note: This information must be covered. However, a "Needs Improvement" score on this requirement will not preclude the plan from passing.*
MITIGATION STRATEGY				

Multi-Jurisdictional Mitigation Actions	Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (That is, Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?)	Yes, Part II, Western Municipal Water District Section	**[N] [S]**	
PLAN MAINTENANCE PROCESS				
Incorporation into Existing Planning Mechanisms	Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms.	Part I, Page 143		
	Has this jurisdiction included a process by which the local government will incorporate the requirements in other plans, such as comprehensive or capital improvement plans, when appropriate?	Part I, Page 143	**[N] [S]**	
ADDITIONAL STATE REQUIREMENTS	See Planning Process – Local Capabilities Assessment for an additional State & Local Planning Requirement.	Part I, Page 143		



RIVERSIDE COUNTY
DRAINAGE AREA MANAGEMENT PLAN

SANTA ANA AND SANTA MARGARITA REGIONS

APRIL 2007

Santa Ana Watershed
Drainage Area Management Plan
Summary of Changes since 2006 Annual Report

Notice of Intent and Notice of Termination for Construction Activities under the Municipal Permit		
Notice of Intent		
Added fields for email and fax number for owner's and contractor's information	Phone ( ) –	Phone ( ) – Fax ( ) – Email :
Notice of Termination		
Added fields for email and fax number for owner's and contractor's information	Phone ( ) –	Phone ( ) – Fax ( ) – Email :

Sanitary Sewer Overflow Procedures		
Description	**April 2006**	**December 2006**
Attachment A (Sewering Agency Contact Roster)		
Contact information change for the City of Hemet		Police Dispatch: 951.765.2400
Contact information change for the Elsinore Valley Municipal Water District		After Work Hours: (951) 258-9299
Contact information change for the Lake Hemet Municipal Water District	Mr. Robert Allen Fax 951.766.7031	Mitch Freeman (Sr W. Operator), Jeff Wall (Chief Engineer) 951.658.3241 ext. 247; 951.658.3241 ext. 238 After Work Hours: 951.956.4836; 951.970.8970 Fax 951.766.7031

		mfreeman@lhmwd.org
Contact information change for the Rubidoux Community Services District		After Work Hours: 951.684.7580 dballow@rcsd.org
Contact information change for the Yucaipa Valley Water District	909.208.6347 (cell)	After Work Hours: 951.789.5109
Contact information change for the City of Corona	Mr. Gary Reid 951.736.2233 Fax 951.279.3695 Cell 951.830.1455 Gary.reid@ci.corona.ca.us	Rudy Fandel 951.736.2476, After Hours: 951.736-2223 Fax 951.739.4909 Rudy.fandel@ci.corona.ca.us
Contact information change for the City of Riverside		After Work Hours: 951.351.6140
Contact information change for the Jurupa Community Service District		Fax: 951-685-1153
Contact information change for the Lee Lake Water District	Mr. Harry Riebe or Mr. John Pastore 760.479.4120	Ken Codwell (Plant Super.) Mr. Harry Riebe (Eng.) Jeff Pape (GM) During Work: 760.277.1414; 760.479.4120; 951.277.1414 After Work: 951.830.3651; 760.473.4120; 760.250.9658
Contact information change for the Western Municipal Water District	951.789.5114 (during working hours) bbeam@wmwd.com	951.789.5114 (during working hours) westernops@wmwd.com
Attachment C (MS4 Permittee Contact Roster)		
Contact information change for the City of Canyon Lake	Kathy Bennett 951.244.2955 Fax 951.246.2022 Cell 951.237.2222 Home 951.471.2873 Kathy@cityofcanyonlake.com	Robert Bohan, Senior Special Enforcement Officer 951.244.2955 Fax 951.246.2022 Cell 951.265.1796 Home 951.244.3935(Deputy)

		Kathy@cityofcanyonlake.com
Contact information change for the City of San Jacinto	Mr. Tim Hults 951.487.7330 Fax 487.6779 thults@sanjacintoca.us	Mike Emberton (Public Works Director), Aaron Anderson (Utilities Super.) 951.654.4041, Cell: 951.538.9499, Pager: 951.765.8197 Fax 951.487.7382 Memberton@sanjacintoca.us; Aanderson@sanjacintoca.us;

Water Quality Management Plan (WQMP)		
Description	**September 17, 2004**	**July 24, 2006 update**
Through-out document References to web page changed:	www.swrcb.ca.gov	www.waterboards.ca.gov
Section 4.0 - Project-Specific WQMP Preparation (page 8) Edit to sentence (1st paragraph, 1st sentence)	Prior to submitting…	Category projects must submit…
Section 4.3 - Identify Pollutants of Concern (page 12)		
Edit to sentence (3th paragraph)	…pollutants expected to be generated by the project	… potential pollutants of concern generated by the project.
Section 4.3 - Identify Pollutants of Concern (page 12) Edit to sentence (4th paragraph, last sentence)	See Section 4.5, ….	See Section 4.5.3, ….
Section 4.5.2.1 - Non-Structural Source Control BMPs (page 19) Edit to sentence (9th paragraph, last sentence)	The project applicant shall request these materials (in writing) at…	The project applicant shall request these materials at…

Exhibit B – Potential Pollutants Generated by Land Use Type (page B-2) Edit to each Expected (E) value	E	P

WQMP Template		
	Previous Version	**August 23, 2006 update**
File format	*.doc format	*.dot format
Protection	None	Password-protected
Fill-in forms	Incompatible w/ current Word versions Yellow highlights	Upgraded to Word 2003 & fixed bugs Removed yellow highlights
Yes/No/NA Inputs	Type-in only	Check boxes
Instructions	In fill-in field only	Special section above fill-in fields
Automatic field updates	Project title, tract/development nos., owner/preparer info, document date	Fixed bugs & added auto-update for page numbers.
Section I	Planning Area/Community Name	Planning Area/Community Name/Development Name

Best Management Practices (BMP) Design Handbook		
Description	**September 17, 2004**	**July 24, 2006 update**
Table 2 - Potential Pollutants Generated by Land Use Type (page 2) Table correction	Table has been updated to be consistent with WQMP Exhibit B table	
Table 3 - Treatment Control BMP Selection Matrix (page 3) Table correction	Table has been updated to be consistent with WQMP Table 3	
Austin Sand Filter Design Procedure *3. Sedimentation Basin Design (page 37)* Formula correction	Width = A_s / (3) Length = (2) x (width)	$A_s = 2 \times W^2$ length = 2 x width
Worksheet 7 - Design Procedure Form for Austin Sand Filter (page 43 and 44) Formula correction	Width = A_s / (3) $V_r \geq V_f$?	$A_s = 2 \times W^2$ $V_r \leq V_f$,
Appendix B - BMP Design Examples		
cover sheet (page 65) Typographical error change	Austin San Filter	Austin Sand Filter
Extended Detention Basin Example Calculation/value change *Datasheet, Worksheet 1: Item 2.b, and Worksheet 3: Item 1.a.*	A_{total} = 80 acres	A_{total} = 40 acres
Typographical error change *Through-out datasheet* *Total Basin Volume check:* *Forebay Design:* *Basin Outlet, For this size orifice:*	✍ …(108% V_{BMP}) ? V_{BMP} …((4* $Area_F$)/ ?) = 89.9 …27 hours ? 24 hours	→ …(108% V_{BMP}) ≥ V_{BMP} …((4* $Area_F$)/ π) = 89.9 …27 hours ≥ 24 hours

Best Management Practices (BMP) Design Handbook		
Description	**September 17, 2004**	**July 24, 2006 update**
	…60 hours ? 48 hours	…60 hours ≥ 48 hours
Grass Swale Example Calculation/value change *Datasheet* *Table 4: Runoff Coefficients for an Intensity and Worksheet 2: Item 2* *Worksheet 2: Item 4* *Worksheet 2: Item 5 and Worksheet 9: Item 1* *Worksheet 9: Item 1*	 Q_{BMP} = 9.27 cfs slight coefficient value changes through-out table C = .579 Q_{BMP} = 9.27 ft^3/s D = 0.42 (5") ft	 Q_{BMP} = 9.31 cfs C = .582 Q_{BMP} = 9.31 ft^3/s D = 0.41 (5") ft
Austin Sand Filter Example Typographical error change *Datasheet and Worksheet 7: Item 1* *Through-out datasheet* *Filter Basin Design:*	 A_{total} = 80 acres ✍ ….= 10164 ft^3 ? V_{fb} ….= 8469 ft^3 ? V_{fb}	 A_{total} = 40 acres → ….= 10164 ft^3 ≥ V_{fb} ….= 8469 ft^3 ≥ V_{fb}
Worksheet 7: Item 4.d.	$V_r \geq V_f$?	$V_r \leq V_f$,
Infiltration Basin Example Calculation/value change *Datasheet and Worksheet 1: Item 4* *Datasheet: 3. Trench Surface Area* *Worksheet 4: Item 1b* *Worksheet 4: Item 3*	 V_{BMP} = 1.13 in-acre V_{BMP} = 0.0942 ft-acre V_{BMP} = 4103 ft^3 A_m = 5952 feet = 0.1366 Acres V_{BMP} = 4103 ft^3 A_m = 5952 feet	 V_{BMP} = 1.12 in-acre V_{BMP} = 0.093 ft-acre V_{BMP} = 4051 ft^3 A_m = 5880 ft^2 = 0.135 Acres V_{BMP} = 4051 ft^3 A_m = 5880 feet
Filter Strip Example Calculation/value change *Table 4: Runoff Coefficients for an Intensity and Worksheet 2: Item 2*	 slight coefficient value changes through-out table	

Best Management Practices (BMP) Design Handbook		
Description	**September 17, 2004**	**July 24, 2006 update**
Worksheet 2: Item 4 *Worksheet 10: Item 1* *Worksheet 10: Item 2*	C = .83 Q_{BMP} = .211 cfs W_m = 42.2 ft	C = .82 Q_{BMP} = .21 cfs W_m = 42 ft

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1.0 EXECUTIVE SUMMARY

This update of the Drainage Area Management Plan for the Santa Ana and Santa Margarita Regions (DAMP) addresses the requirements of the municipal separate storm sewer system (MS4) Permits issued to the Riverside County Permittees by the Santa Ana Regional Water Quality Control Board (Regional Board) in 2002 and the San Diego Regional Board in 2004, and incorporates programs developed since 1993. These are the third MS4 permits issued by each Regional Board and are referred to as the "Third-term" MS4 Permits.

The update of the DAMP was conducted in two phases. In the first phase, the DAMP was updated to specifically address the requirements of the Third-term Santa Ana Region MS4 Permit. A revised DAMP was submitted to the Santa Ana Regional Board in January 2005 for approval by the Executive Officer as specified in Section XIII.A of the Third-term Santa Ana Region Permit. Following submittal of the revised DAMP to the Santa Ana Regional Board, additional revisions were made to address requirements specific to the Santa Margarita Region (SMR). The revisions for the Santa Margarita Region do not affect the programs implemented in the Santa Ana Region.

The DAMP describes a wide range of continuing and enhanced Best Management Practices (BMPs) and control techniques, which are being implemented during the five-year terms of the Third-term MS4 Permits and describes the overall Urban Runoff management strategies planned by the Permittees in the Santa Ana and Santa Margarita Regions of Riverside County. The DAMP has been prepared to meet the complex Urban Runoff management needs in the Santa Ana and Santa Margarita Regions consistent with the Third-term MS4 Permits. The DAMP must address the needs and constraints of the Permittees and the requirements of the Third-term MS4 Permits.

A glossary of terms is provided as Appendix A. Throughout the DAMP equivalent terms from the Third-term MS4 Permits have been standardized. For example, the term "Standard Urban Stormwater Management Plan (SUSMP)" referenced in the Third-term SMR Permit is referred to as the "Water Quality Management Plan (WQMP)".

The requirements of the Watershed SWMP (Provision K.2. of the Third-term SMR permit) are addressed throughout the DAMP. In addition, Appendix S contains a separate "Watershed SWMP" section that describes how Provision K.2 requirements are specifically addressed by the DAMP.

2.0 INTRODUCTION TO THE DRAINAGE AREA MANAGEMENT PLAN

The DAMP is a programmatic document developed by the Permittees and approved by the Executive Officers of the Santa Ana and San Diego Regional Boards. It is the principal document that translates the MS4 Permit requirements into programs and implementation plans. The DAMP is used by the Permittees in their development of individual ordinances, plans, policies and procedures to manage Urban Runoff.

The initial DAMP was prepared in February 1993 (subsequently referred to as 1993 DAMP) in compliance with the requirements of the First-term MS4 Permits issued by the Santa Ana and San Diego Regional Boards. This DAMP outlines the major programs and policies that the Permittees individually and/or collectively develop and implement to manage Urban Runoff in compliance with the Third-term MS4 Permits issued by the Santa Ana Regional Board in 2002 and the San Diego Regional Board in 2004. The primary program elements are illustrated in Figure 2-1. Additional program elements were also developed to address specific compliance needs. "Supplement A" to the DAMP was developed in April 1996 to provide guidance in the selection and design of storm water quality controls for development projects. The Municipal Facilities Strategy and Enforcement Compliance Strategy were developed as required by the 1998 MS4 Permit issued by the Santa Ana Regional Board. These program elements have been incorporated into the DAMP.

The area of Riverside County covered by the MS4 Permit issued by the Santa Ana Regional Board is referred to as the Santa Ana Region (SAR) and the area covered by the MS4 Permit issued by the San Diego Regional Board is referred to as the Santa Margarita Region (SMR). The Permittees of the Third-term MS4 Permits and their associated regions are:

- Riverside County Flood Control and Water Conservation District (District) (SAR, SMR)
- County of Riverside (SAR, SMR)
- City of Beaumont (SAR)
- City of Corona (SAR)
- City of Hemet (SAR)
- City of Lake Elsinore (SAR)
- City of Moreno Valley (SAR)
- City of Murrieta (SAR, SMR)
- City of Norco (SAR)
- City of Perris (SAR)
- City of Riverside (SAR)
- City of San Jacinto (SAR)
- City of Calimesa (SAR)
- City of Canyon Lake (SAR)
- City of Temecula (SMR)

The District has been designated Principal Permittee in both MS4 Permits and the remaining 14 municipalities, including the County, are referred to as Co-Permittees.

2.1 PROGRAM OVERVIEW

The DAMP serves as the primary compliance document that describes the program elements necessary to comply with the Third-term MS4 Permits. The program elements and associated DAMP sections are identified in Figure 2.1.

Santa Ana Region Specific Element

In addition to the descriptions of program elements contained within the DAMP, each Permittee maintains documentation of their internal procedures for implementation of the program elements described in the DAMP. This documentation includes the following information:

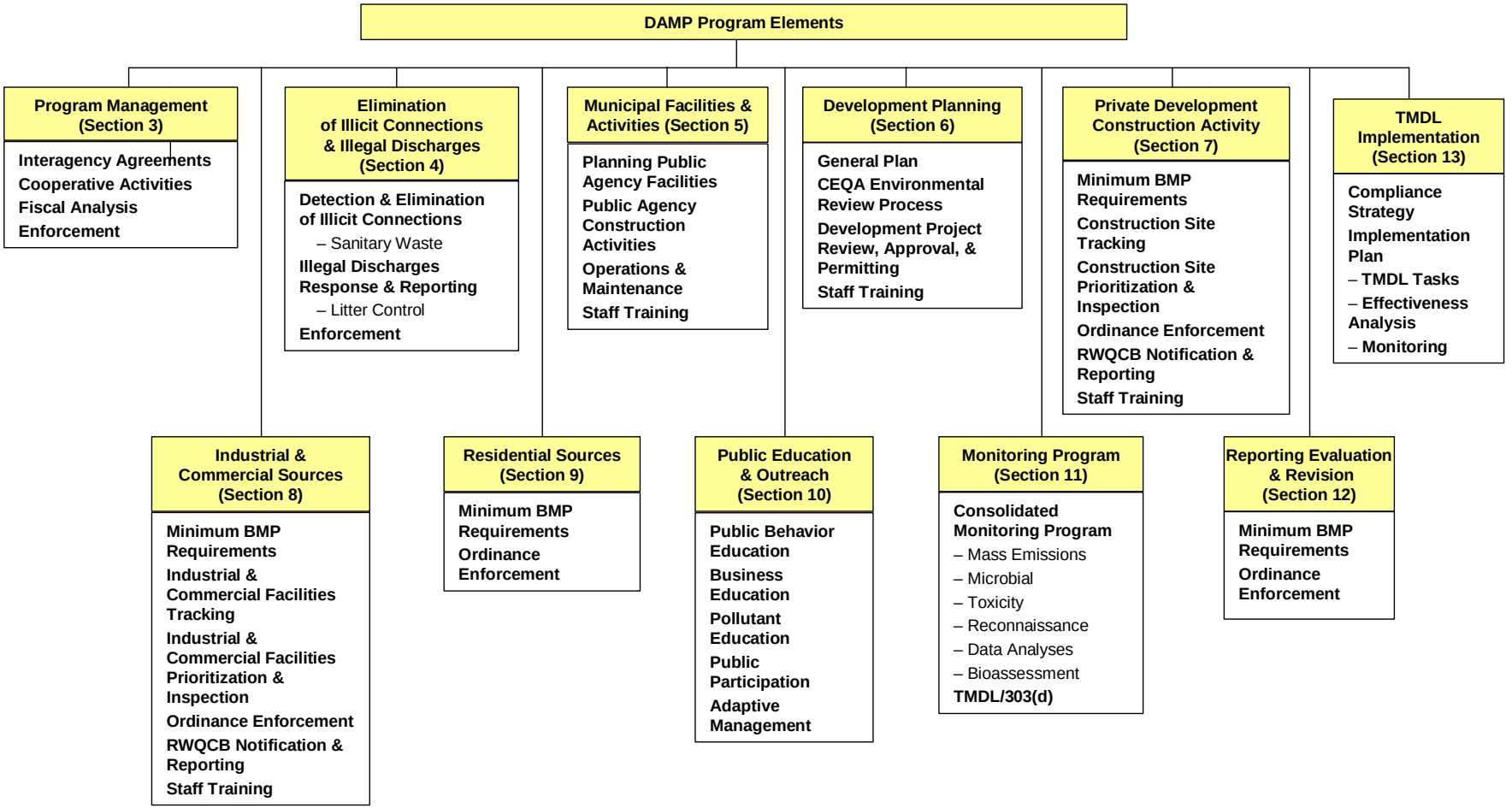
- Legal counsel certification of the Permittee's authority to implement the Third-term Santa Ana MS4 Permit requirements.
- Copy of the Permittee's storm water ordinance, grading/erosion ordinance and litter/trash control ordinance
- Illicit Connection/Illegal Discharge enforcement and compliance prioritization and response program (DAMP Section 4)
- Policy and Procedures for planning and design of Permittee projects subject to the Water Quality Management Plan (WQMP).
- Operation and maintenance schedule for the MS4.
- CEQA project application forms and initial study checklists
- Procedure for implementing development review, approval and permitting
- Construction site inspection program, database and inspection checklist
- Industrial/commercial inspection program, database and inspection checklist

These documents are reviewed and updates as necessary to keep up with changes within the Permittees jurisdiction and with changing local, state and federal regulations. These programs will remain, however, in compliance with the Third Term Santa Ana MS4 Permit and the programs outlined in this DAMP.

Santa Margarita Region Specific Elements

In addition to the descriptions of program elements contained within the DAMP, each Permittee maintains an Individual Storm Water Management Plan (Individual SWMP) that documents their internal procedures for implementation of the program elements described in the DAMP. In the Santa Margarita Region, the Permittees local program elements do not have to be in substantial conformance with the DAMP. The Permittees may choose to implement programs described in the DAMP or to implement alternative programs. However, the alternate programs must be in conformance with the requirements of the Third Term Santa Margarita Region MS4 Permit.

Figure 2-1. Program Elements of DAMP



2.2 REGULATORY FRAMEWORK

2.2.1 CWA Section 402(p) – NPDES Permitting for Storm Water Discharges

The Urban Runoff pollution control effort, of which this DAMP is part, is the result of over thirty years of legislative effort beginning with the Federal Water Pollution Control Act, which, as amended in 1972, is now referred to as the Clean Water Act (CWA). The CWA authorized that the discharge of pollutants to Waters of the United States from a point source is effectively prohibited unless the discharge is in compliance with a NPDES permit. In 1987 Congress amended portions of the CWA and included Section 402(p), which set requirements for permitting storm water discharges. Section 402(p) of the CWA required that the United States Environmental Protection Agency (USEPA) establish regulations setting forth a program of NPDES applications and corresponding permits for storm water discharges associated with industrial activities and for storm water discharges from MS4s. Section 402(p) of the CWA also requires that MS4 NPDES permits include:

- A requirement to effectively prohibit non-storm water discharges into the MS4; and
- Controls to reduce the pollutants in storm water discharges to the maximum extent practicable (MEP), including management practices, control techniques and system, design and engineering methods and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

USEPA's Final Rule for NPDES Permit Application Regulations for Storm Water Discharges became effective December 17, 1990 and is often referred to as the "Phase I storm water regulations." The Phase I storm water regulations are administered nationwide through the USEPA's NPDES program. California is authorized to issue NPDES permits under Section 402 of the CWA per agreement with the USEPA. The Phase I storm water regulations require that the management program for an MS4 include a comprehensive planning process which involves public participation and necessary intergovernmental coordination to reduce the discharge of pollutants to the MEP using management practices, control techniques and systems, design and engineering methods, and such other provisions which are appropriate. The Phase I storm water regulations also specify who is covered; prescribes a variety of required information-gathering, planning, and reporting activities; and sets forth a schedule for compliance. The Phase I storm water regulations also set forth requirements for specific industrial activities, including construction.

2.2.2 CWA Section 303(d) – Impaired Water Bodies

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters and to update those lists every other year. These lists of impaired water bodies are typically referred to as the "303(d) List". In developing the 303(d) List "all existing and readily available water quality-related information" must be utilized. The listed water bodies are considered impaired because they do not meet water quality standards necessary to maintain designated beneficial uses, even after point sources of pollution have installed the minimum required levels of pollution control technology. The current 303(d) List can be viewed or downloaded from the following website: http://www.waterboards.ca.gov/tmdl/303d_lists.html.

A Total Maximum Daily Load (TMDL) specifies the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and allocates pollutant loadings among point and nonpoint pollutant sources. The CWA requires that priority rankings be established for impaired waters [Receiving Waters on the 303(d) List] and that TMDLs be developed taking into account the severity of pollution and the beneficial uses of the water (fishing, swimming, municipal water supply, etc.).

2.2.3 Santa Ana Region

In response to the Phase I storm water regulations, the Permittees obtained an "Early" MS4 Permit[1] from the Santa Ana Regional Board (NPDES No. CA 8000192, Order No. 90-104) on July 13, 1990, for Urban Runoff from areas in Riverside County within the SAR. The SAR MS4 Permit was renewed in 1996 (Second-term MS4 Permit) with the following additional requirements:

- Develop an "Enforcement/Compliance Strategy" (E/CS) that addresses compliance with regard to industrial and commercial facilities as well as construction sites;
- Assess Permittee activities and facilities for potential impacts to Urban Runoff quality and then develop a "Municipal Facility Strategy" (MFS) based on the assessment;
- Identify post-construction source pollutant prevention and treatment measures that could be incorporated into development projects (New Development Guidelines, Supplement A to the 1993 DAMP).

The Second-term MS4 Permit also explicitly recognized that there are areas of Riverside County within the jurisdictional area of the Santa Ana Regional Board that are not:

- Subject to the Phase I storm water regulations;
- Under the jurisdiction of the State of California; nor
- Under the jurisdiction of the Permittees.

Such areas or entities include:

- Federal and state lands, including, but not limited to, military bases, national forests, hospitals, colleges and universities, and highways;
- Utilities and special districts;
- Native American tribal lands;
- Non-urbanized areas; and
- Agricultural lands.

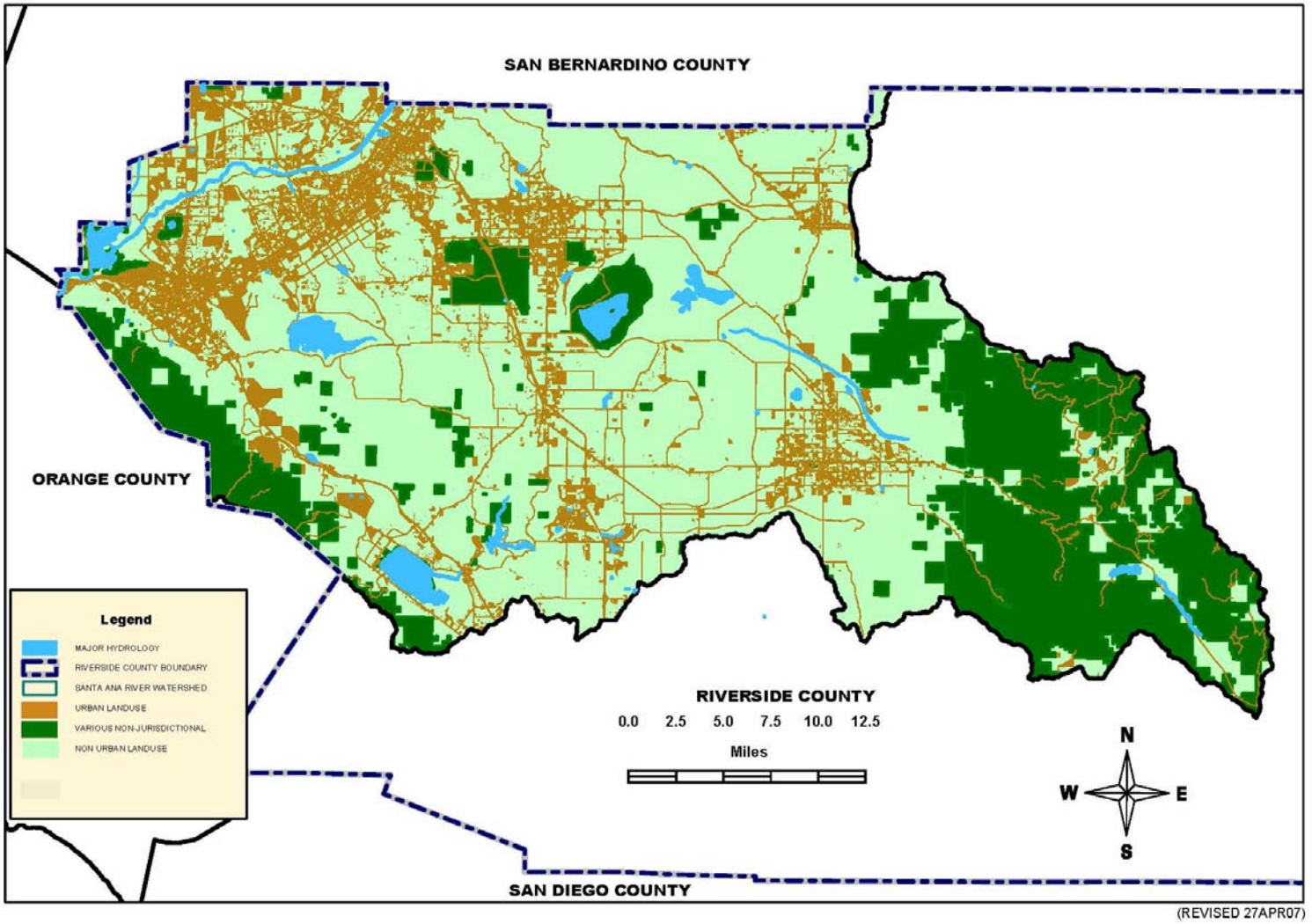
On October 25, 2002, the Santa Ana Regional Board adopted Order No. R8-2002-0011, NPDES No. CAS 618033 (Third-term SAR MS4 Permit). The areas excluded from coverage under the Second-

[1] Some municipalities applied for and received storm water discharge permits prior to the USEPA promulgation of the "Final Rule for NPDES Permit Application for Storm Water Discharges." Such permits have been referred to as "Early" permits.

term MS4 permit are also excluded from coverage under the Third-term SAR MS4 Permit. Figure 2-2 shows the SAR. A copy of the Third-term SAR MS4 Permit is included as Appendix B.

As with the prior SAR MS4 permits, the Third-term SAR MS4 Permit regulates discharges of Urban Runoff from MS4s within Riverside County under the jurisdiction of and/or maintenance responsibility of the Permittees. Further, the Third-term SAR MS4 Permit is intended to regulate the discharge of "pollutants" in Urban Runoff from anthropogenic sources under the control of the Permittees, and is not intended to address background or naturally occurring pollutants or flows. The Third-term SAR MS4 Permit required that the Permittees review and update their programs consistent with the current MEP standard as specified in the permit.

Figure 2-2. Santa Ana Region



2.2.4 Santa Margarita Region

In response to the Phase I storm water regulations, the District, the County and the City of Temecula obtained an "Early" MS4 Permit[2] (NPDES No. CA0108766, Order No. 90-46) in July 1990. On May 18, 1992, the City of Murrieta was added to that permit. This first MS4 Permit required the Permittees to develop an Urban Runoff management program and implement BMPs to control the discharge of pollutants to Waters of the U.S. During this time, the Permittees cooperatively developed the Santa Margarita Regional DAMP (SMR DAMP). The SMR DAMP described 35 BMPs implemented by the Permittees in their effort to control Urban Runoff pollution to the MEP. The San Diego Regional Board approved the SMR DAMP on April 26, 1996.

On January 17, 1995 the District, the County and the cities of Murrieta and Temecula (Permittees) submitted an application for renewal (referred to as a Report of Waste Discharge) of the SMR MS4 Permit. On May 13, 1998 the Regional Board adopted Order No. 98-02 renewing the SMR MS4 Permit. However, the USEPA Region IX (Region IX) objected[3] to the Order as adopted and issued a final SMR MS4 Permit (Permit No. CAS0108766) on April 27, 1999. Permit No. CAS0108766 became effective on May 30, 1999. On June 25, 1999, Region IX "returned" Permit No. CAS0108766 to the San Diego Regional Board for implementation. On November 8, 2000, the Regional Board issued Addendum No. 1 to Order No. 98-02 that incorporated, by reference, Permit No. CAS0108766 into their Order.[4] The District was designated as the "Principal Permittee" and the two cities and the County were identified as "Co-Permittees."

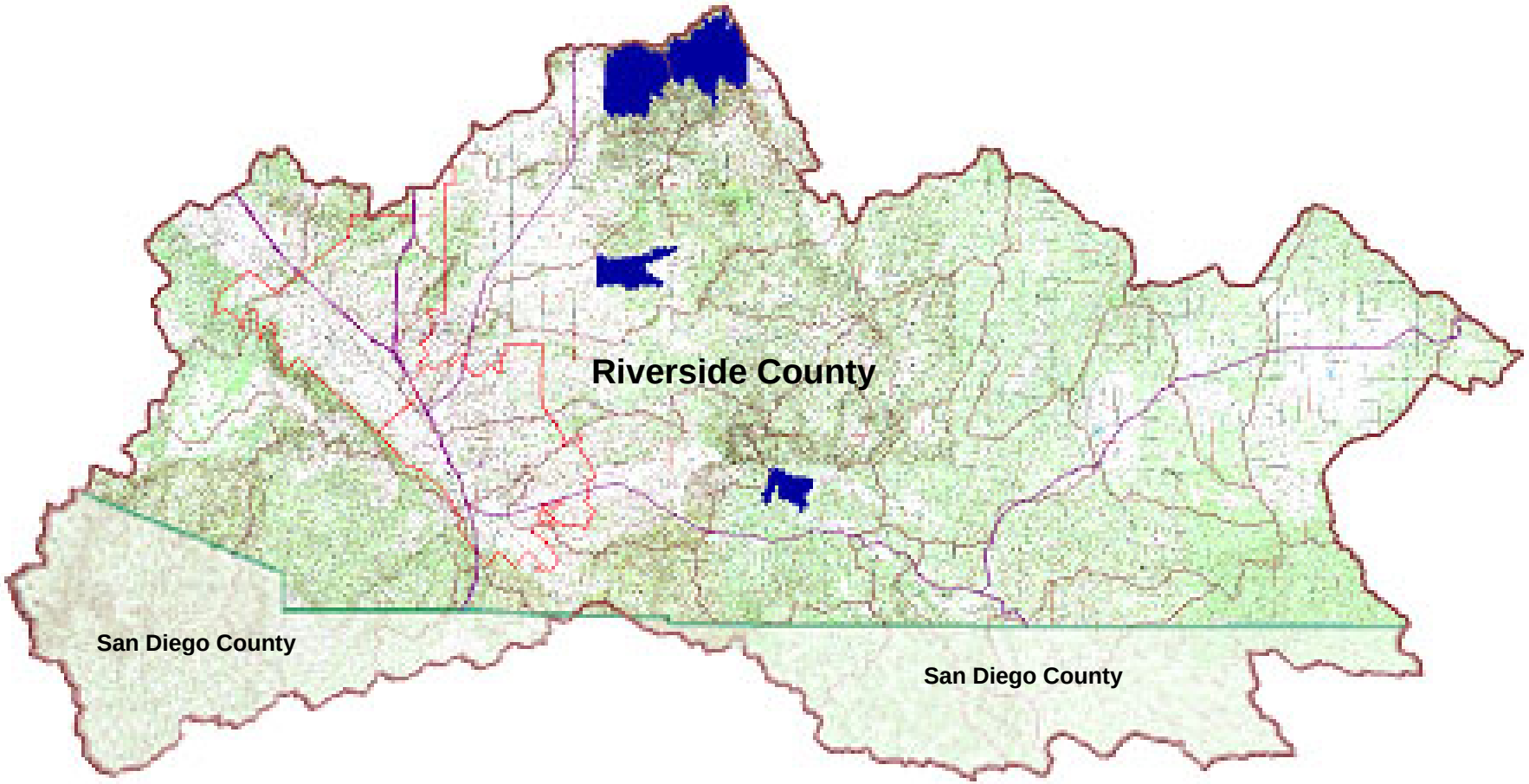
On July 14, 2004, the San Diego Regional Board adopted Order No. R9-2004-01, which is the Third-term SMR MS4 Permit. Figure 2-3 shows the SMR. A copy of the Third-term SMR MS4 Permit is included as Appendix C.

[2] Some municipalities applied for and received storm water discharge permits prior to the USEPA promulgation of the "Final Rule for NPDES Permit Application for Storm Water Discharges." Such permits have been referred to as "Early" permits.

[3] USEPA objected to the Receiving Water Limitations (RWL) in Order No. 98-02. The RWL in Order No. 98-02 were consistent with existing State Water Resources Control Board (SWRCB) policy as expressed in its Order WQ 98-01 adopted on January 22, 1998. SWRCB has subsequently modified its RWL policy to conform with USEPA Region IX's RWL policy by adopting Order WQ 99-05 on June 17, 1999.

[4] San Diego Regional Water Quality Control Board, Addendum 1 to Order No. 98-02, NPDES Permit No. CAS0108766, November 8, 2000.

Figure 2-3. Santa Margarita Region



2.3 SANTA ANA REGION WATERSHED BACKGROUND

2.3.1 Permit Area Land Use and Population Characteristics

The SAR is located in the northwestern corner of Riverside County. The SAR is bounded on the south by the Santa Margarita watershed, on the east by the Salton Sea watershed, on the south/west by Orange County and on the north/west by San Bernardino County. The Santa Ana River watershed, including the San Jacinto River sub-watershed, encompasses 1,603 square miles (22 percent of the 7,300 square miles within Riverside County) and includes 12 of the 24 cities within Riverside County. The California Department of Finance estimates that as of January 1, 2006, the population of Riverside County was about 1,953,330. About 1,232,980 of those persons (63% of the Riverside County population) live within the SAR—approximately 864,540 persons residing within the 12 municipalities[5] and an additional 368,440 persons residing in the unincorporated area. The areas of the most significant recent growth in population in the SAR include the Cities of Beaumont, Calimesa, and San Jacinto, and this trend is expected to continue between 2006 and 2010.

Based on Riverside County Assessor's Roll as of February 2006, general land uses within the portion of the Santa Ana River watershed within Riverside County are:

- 46.0 square miles zoned for commercial/industrial purposes (3.3 percent)
- 110.2 square miles zoned for residential purposes (7.9 percent)
- 15.3 square miles zoned for parks and recreational facilities (1.1 percent)
- 18.4 square miles zoned for streets and roads (1.3 percent)
- 109.6 square miles zoned for rural residential (7.9 percent)
- 709.3 square miles zoned for preserves or open space (50.8 percent)
- 76.0 square miles zoned for agricultural purposes (5.4 percent)
- 311.0 square miles of federal, state, tribal, and other lands that are not under the jurisdiction of the Permittees (22.3 percent)

Section 3.4.1 of the DAMP describes the limits of the Permittees' authority over discharges from federal, state and other lands. Although runoff from these areas may be discharged into the MS4 owned and operated by the Permittees, the Permittees do not have the authority to apply the DAMP to these entities.

The Draft Western Riverside County Multi-Species Habitat Conservation Plan prepared in November 2002 states that planned land uses indicate a shift in future use of land within Western Riverside County. At build-out, approximately 491,300 acres of currently vacant and agricultural lands are anticipated to shift to community development/rural uses.

[5] Population figures for the City of Murrieta have been omitted because only 375 acres (2%) of its land area is within the Permit Area.

2.3.2 Physiography and Geology

The Santa Ana River watershed represents one of nine major California watershed systems between Santa Barbara and the U.S.-Mexico Border at Tijuana. The SAR is located in the Peninsular Ranges and Transverse Ranges Geomorphic Provinces of Southern California (California Geological Survey Note 36). The highest elevations (upper reaches) of the Riverside County region of the watershed occur in the San Bernardino Mountains (San Gorgonio Peak with elevation 11,485 feet) and in the San Jacinto Mountains (Peninsular Ranges Province, Mt. San Jacinto with elevation 10,804 feet). The primary slope direction is northeast to southwest, with secondary slopes controlled by local topography.

As is true for much of California, the geology of the SAR is defined and created by seismic activity. The dominant structural feature is the San Andreas Fault zone, which trends in a southeast-northwest direction at the base of the San Bernardino Mountains. The major fault structures in the SAR include the San Jacinto fault zone and the Elsinore Fault Zone; the San Jacinto Mountains are caused by motion from both the San Andreas and San Jacinto zones. The area between the San Jacinto zone and the Elsinore Zones is a down-dropped block that is partly in-filled with sediments from the surrounding mountains.

There are too many geologic units in the SAR to describe separately, but the predominant features are intrusive rocks of the southern California batholith (granitic and andesitic rocks) that have been uplifted/eroded to form the mountain ranges, alluvial/fluvial sediments (materials eroded from the mountains and deposited in the basins), and semi-consolidated sedimentary units.

2.3.3 Climate

The climate of the SAR is Mediterranean with hot, dry summers and cooler, wetter winters. Average annual precipitation ranges from 10-13 inches per year in the inland alluvial valleys, reaching 36 inches or more in the San Bernardino and San Jacinto Mountains. Most of the precipitation in the SAR occurs between November and March in the form of rain with variable amounts of snow in the higher elevations. The climatological cycle of the Region results in high surface water flows in the spring and early summer followed by low flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years. The types of storms that occur in the SAR include:

- General winter storms during the period of December to March, inclusive. They originate over the Pacific Ocean as a result of the interaction between polar Pacific and tropical Pacific air masses and move eastward over the basin. These storms, which often last for several days, reflect orographic influences and are accompanied by widespread precipitation in the form of snow or rain.
- General summer storms usually occur during the period from July through September. They are associated with an influx of tropical maritime air originating over the Gulf of Mexico or the South Pacific Ocean and entering the area from a southeast to a southwest direction. Usually the influx of tropical air is caused by circulation about a high-pressure area centered in the southeastern United States, but occasionally it is caused by the remnants of a tropical hurricane. General summer thunderstorms are accompanied by heavy precipitation over large areas for periods up to 24 hours, but showers may continue for as long as three days.

- Local thunderstorms can occur at any time of the year, either during general storms or as isolated phenomena. However, they are most common during the period from July through September, when the Southern California area may be covered by moist unstable air originating over the Gulf of Mexico. These storms cover comparatively small areas and result in high intensity precipitation of short duration.

2.3.3.1 Surface Water

As the SAR is arid, there is little natural perennial surface water. Surface waters start in the upper erosion zone of the watershed - primarily the San Bernardino, Santa Ana and San Jacinto Mountains. This upper zone has the highest gradient and soils/geology that do not allow large quantities of percolation of surface water into the ground. Flows consist mainly of snowmelt and storm runoff from the lightly developed San Bernardino National Forest,

From the City of San Bernardino to the City of Riverside, the Santa Ana River flows perennially, mostly due to treated discharges from wastewater treatment plants. From the City of Riverside to Prado Dam, the flow in the Santa Ana River consists of highly treated wastewater and groundwater discharges, potable water transfers, irrigation runoff, groundwater forced to the surface by shallow/rising bedrock and minor amounts of Urban Runoff. Urban Runoff provides a proportionately greater contribution to the flow of the River during significant storm events.

Lake Elsinore is the only natural freshwater lake of any size in the SAR. A variety of water storage reservoirs (e.g., Lake Perris, Canyon Lake, and Lake Mathews) and flood control areas (Prado Dam area) have been created to hold surface water in Riverside County.

The San Jacinto watershed is part of the southernmost portion of the Santa Ana watershed. It is tributary to the Santa Ana River through Lake Elsinore and Temescal Wash. The 780 square mile watershed includes 18.1 square miles regulated by Lake Perris and Pigeon Pass dam. Major tributaries include Bautista Creek, Poppet Creek, Potrero Creek, Perris Valley Drain and Salt Creek.

The San Jacinto watershed is bounded by two strike-slip fault zones: the San Jacinto fault zone to the northeast and the Elsinore fault zone to the southwest. The San Jacinto Valley is among the most seismically active of the major strike-slip fault zones in southern California, and also the site of rapid subsidence (20 mm per year) due to tectonic activity and groundwater withdrawal (Morton, 1999). The rapid rate of subsidence has resulted in the formation of a strike-slip "pull-apart basin" or graben that has developed along parallel fault strands in the fault zone. The Elsinore fault zone is also a strike-slip fault zone and the subsidence along the fault formed Lake Elsinore. Due to the large amount of flood storage available in Lake Elsinore, flows from the San Jacinto River rarely reach the Santa Ana River.

Lake Elsinore and Canyon Lake are located at the terminus of the San Jacinto River watershed in southwestern Riverside County. Lake Elsinore is one of the few natural lakes in southern California. It was formed in a geologically active graben area and has been in existence over thousands of years. Due to the Mediterranean climate and watershed hydrology, lake level fluctuations in Lake Elsinore have been extreme, with alternate periods of a dry lakebed and extreme flooding. These drought/flood cycles have a great impact on lake water quality. Fish kills and excessive algal blooms have been reported in Lake Elsinore since the early 20th century. As a result, in 1994, the Santa Ana Regional Board placed Lake Elsinore on the 303(d) List of impaired waters due to excessive levels of nutrients.

Canyon Lake, located approximately five miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon dam in 1928. Approximately 735 square miles of the 780 square mile San Jacinto River watershed drains to Canyon Lake. Only during wet or moderately wet years does Canyon Lake overflow to Lake Elsinore; during most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake. While Canyon Lake does not have as severe an eutrophication problem as Lake Elsinore, there have been periods of algal blooms. In 1998, the Regional Board added Canyon Lake to the 303(d) List of impaired waters due to eutrophication.

The high subsidence rate of the San Jacinto valley along the fault zone has resulted in a closed depression that periodically fills with water to form the ephemeral Mystic Lake. In very wet years, the surface area of Mystic Lake can expand up to 4000 acres. The San Jacinto River makes a 90-degree turn and flows southwest at Mystic Lake. The very low river gradient westward from Mystic Lake forms a broad fluvial plain. The San Jacinto River then flows through the narrow Railroad Canyon, Canyon Lake, and exits the Perris Block into the lower Elsinore basin created by the Elsinore fault zone.

2.3.4 Drainage Area Description

2.3.4.1 Surface Water Bodies

Less than one-fifth (1/5) of the entire acreage within Riverside County drains into waterbodies within the SAR. Those surface water bodies (or portions thereof) are:

Rivers and Streams

Santa Ana River, Reaches 3 and 4
- Tributaries to the south bank of the Santa Ana River
  - Temescal Creek, Reaches 1, 2, 3, 4, 5 and 6
    - Tributaries to Temescal Creek
      - Coldwater Canyon Creek and its tributary drainages
      - Bedford Canyon Creek and its tributary drainages
  - Tequesquite Arroyo (Sycamore Creek) and its tributary drainages
- Tributaries to the north bank of the Santa Ana River
  - Day Creek
  - San Sevaine Creek

San Jacinto River Basin
- San Jacinto River, Reaches 1, 2, 3, 4, 5, 6 and 7
- San Jacinto River, North Fork
- Bautista Creek, headwaters to debris dam
- Fuller Mill Creek
- Salt Creek
- Strawberry Creek
- Stone Creek
- Other tributaries: Indian, Hurkey, Poppet, and Potrero

San Timoteo Creek Basin
- San Timoteo Creek, Reaches 3 and 4 and tributaries
- Little San Gorgonio Creek and its tributaries

Lakes and Reservoirs

- Canyon Lake
- Lake Elsinore
- Lake Evans
- Lake Fulmor
- Lake Hemet
- Lake Mathews
- Lake Perris
- Lee Lake
- Mockingbird Reservoir

The beneficial uses of these surface water bodies include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species. The ultimate goal of the DAMP is to protect the beneficial uses of the Receiving Waters from impacts related to Urban Runoff.

2.3.4.2 Municipal Separate Storm Sewer Systems

The MS4 facilities operated by the District in the SAR consist of an estimated 75 miles of underground storm drain and 59 miles of open channel. The MS4 facilities operated by the Co-Permittees include approximately 395 miles of underground storm drain and 65 miles open channel. Each year, the Permittees identify additions to their respective MS4 facilities to the District. These new facilities are then added to the updated MS4 maps that are included in the Annual Report to the Santa Ana Regional Board.

2.3.5 Current Water Quality Concerns and Issues

Urban Runoff discharged to MS4s in Riverside County ultimately flows to various surface water bodies (inland streams, lakes and reservoirs) and typically carries pollutants that originate from numerous dispersed and uncontrolled sources. Examples of pollutants that may be present in Urban Runoff are fertilizer, heavy metals, nutrients, petroleum products, sediment, bacteria, chemicals, and litter.

Because the SAR is large and has many land uses, the water quality concerns in sub-watersheds vary. However, each land use can potentially contribute pollutants to nearby streams, rivers, and lakes. The infrastructure that supports people's activities (e.g., roads, parks, MS4, and wastewater collection and treatment facilities) may contribute to water quality concerns if not properly managed. Other sources of storm water runoff, including agricultural areas, are exempt from the requirements of the NPDES permitting program established under the CWA. In addition, some pollutants, such as total suspended solids, may be found at elevated levels in runoff from non-urban land uses. Further, certain activities that generate pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography.[6]

Some Receiving Waters in the SAR (for example, Reaches 3 and 4 of the Santa Ana River, Cucamonga Creek, Mill Creek) are identified as impaired due to causes such as nutrients (nitrogen and/or phosphorus), pathogens (including coliform), sediment, and unknown toxicity. The 2006 303(d) List for

[6] Order No. 98-02 Fact Sheet, pgs. 5-6.

the area under the jurisdiction of the Santa Ana Regional Board can be viewed or downloaded from the following website: http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r8_final303dlist.pdf. The prior listing of Lake Elsinore as impaired by sediment does not appear in the 2006 303(d) List. A summary of the 2006 303(d) List for the SAR is presented in Table 2-1.

Table 2-1. 2006 303(d) List of Water Quality Limited Segments

Waterbody	Pollutants	Potential Sources
Canyon Lake (Railroad Canyon Reservoir)	Pathogens	Nonpoint Source
Chino Creek Reach 1	Nutrients	Agriculture; Dairies
Lake Elsinore	PCBs; Unknown Toxicity	Source Unknown; Unknown Nonpoint Source
Fulmor Lake	Pathogens	Unknown Nonpoint Source
Mill Creek (Prado Area)	Total Suspended Solids	Agriculture; Dairies
Santa Ana River Reach 4	Pathogens	Nonpoint Source

Additionally, the Santa Ana Regional Board has identified Receiving Waters that require additional monitoring to improve the quantity and/or quality of data used to develop the 303(d) List. Currently, some Receiving Waters within the SAR have been designated as needing additional monitoring data for parameters such as metals (aluminum, copper, silver, and zinc), salinity, chlorides, or total dissolved solids.

2.3.6 TMDLs

2.3.6.1 Lake Elsinore

According to the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads staff report, prepared by the Santa Ana RWQCB (revised 5/21/04), Lake Elsinore and Canyon Lake are located at the terminus of the San Jacinto River watershed in southwestern Riverside County. The entire San Jacinto River watershed encompasses 780 square miles. Lake Elsinore is one of the few natural lakes in southern California. It was formed in a geologically active graben area and has been in existence over thousands of years. Due to the mediterranean climate and watershed hydrology, lake level fluctuations in Lake Elsinore have been extreme with periods of dry lake bed during some drought cycles. These drought cycles have a great impact on lake water quality.

Fish kills and excessive algae blooms have been reported in Lake Elsinore since the early 20th century. As a result, the Regional Board placed Lake Elsinore on the 1994 303(d) List of impaired waters due to excessive levels of nutrients. In December 2004 a nutrient TMDL[7] was established for Lake Elsinore and Canyon Lake. Storm Water and non-storm water discharges from septic systems, agriculture, dairy, urban, forested and open space lands, as well as in-lake sediments, have been identified as potential sources of impairment. More information on this TMDL is available in Section 13 of the DAMP.

[7] This TMDL can be viewed or downloaded from website: http://www.waterboards.ca.gov/santaana/html/elsinore_tmdl.html.

2.3.6.2 Canyon Lake

According to the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads staff report, prepared by the Santa Ana RWQCB (revised 5/21/04), Canyon Lake, located approximately five miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon dam in 1928. Approximately 735 square miles of the 780 square mile San Jacinto River watershed drains to Canyon Lake. Only in wet years does Canyon Lake overflow to Lake Elsinore; during most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake.

While Canyon Lake does not have as severe an eutrophication problem as does Lake Elsinore, the Regional Board believes there have been periods of algal blooms and occasional fish kills (anecdotal evidence, no written documentation). The Regional Board added Canyon Lake to the 1998 303(d) List of impaired waters due to eutrophication. Storm Water and non-storm water Discharges from septic systems, agriculture, dairy, urban, forested and open space lands have been identified as potential sources of impairment. In December 2004 a nutrient TMDL[8] was established for Lake Elsinore and Canyon Lake. More information on this TMDL is contained in Section 13 of the DAMP.

2.3.6.3 Santa Ana River, Reach 3 (Middle Santa Ana River)

According to Santa Ana Regional Board Resolution R8-2005-001, the Santa Ana River Reach 3 watershed covers approximately 488 square miles and lies largely in the southwest corner of San Bernardino County, and the northwestern corner of Riverside County. A small part of Los Angeles County (Pomona/Claremont area) is also included.

Several waterbodies within, and including the Middle Santa Ana River, have been listed for pathogen indicator impairments. These waterbodies include Middle Santa Ana River, Chino Creek Reaches 1 and 2, Mill Creek (Prado Area), Cucamonga Creek Reach 1, and Prado Park Lake. The Santa Ana Regional Board placed these waterbodies on the 1998 303(d) List of impaired waterbodies for pathogen indicators. In 2005, the Regional Board adopted a pathogen indicator TMDL for these same waterbodies. Potential sources of the impairment include storm water and non-storm water discharges from agricultural lands, dairy lands, urban lands, failed septic systems, open space areas, forested lands, and natural background sources. Recreational use of these waterbodies may also serve as a source of pathogens. More information on this TMDL is contained in Section 13 of the DAMP.

2.4 SANTA MARGARITA REGION WATERSHED BACKGROUND

The Santa Margarita watershed represents one of nine major California watershed systems between Santa Barbara and the U.S.-Mexico Border at Tijuana. The basin includes a watershed area of 746 square miles, ranking it as a moderately large system among coastal drainages. Physiographically, the basin is split into a mountainous highland (upper drainage basin) and broad, flat topped sea terrace (coastal drainage basin). The boundary between the upper drainage basin and the coastal drainage basin transitions at the County line between Riverside and San Diego Counties

[8] This TMDL can be viewed or downloaded from website: http://www.waterboards.ca.gov/santaana/html/elsinore_tmdl.html.

The upper Santa Margarita watershed includes two major basins, drained by Temecula and Murrieta Creeks. Over 50% of the Santa Margarita River watershed has been controlled by the construction of Vail Dam in 1949 and Skinner Reservoir in 1974, which created significant storage capacity in the upper watershed.[9] Due to this storage capacity, peak flow rates during major flow events for both existing and future land use conditions will be lower than under natural conditions (assuming average storage conditions in the reservoirs).[10]

Temecula Creek has a drainage area of 366 square miles, with steep rugged topography in the Palomar and Thomas Mountain areas and rolling hills below. The upper 316 square miles of this basin is controlled by Vail Lake (completed in 1949). Murrieta Creek has a drainage area of 222 square miles, with over 50 square miles controlled by Skinner Reservoir (completed in 1974). Although the watershed area is somewhat smaller and less rugged than the Temecula Basin, flood flows have the potential to create greater damage as they flow through the Cities of Temecula and Murrieta.

Temecula and Murrieta Creeks join along the Elsinore fault zone at the head of Temecula Canyon to form the Santa Margarita River. The Temecula Canyon is approximately five miles long, and is a steep, narrow, and rocky canyon. The San Diego-Riverside County Line crosses through the Temecula Canyon. From here, the river traverses 27 miles to the Pacific Ocean.[11]

2.4.1 Permit Area Land Use and Population Characteristics

The SMR is approximately 548 square miles, which is less than 8 percent of the 7,300 square miles within Riverside County. Only three of the 24 municipalities within Riverside County are under the jurisdiction of the San Diego Regional Board. The California Department of Finance estimates that as of January 1, 2004, the total population of Riverside County was about 1,776,700. Of the 1.78 million people, approximately 167,000 persons (approximately 10 percent) reside within the SMR. Approximately 12,900 persons reside in the unincorporated area while approximately 153,600 persons reside within the Cities of Murrieta and Temecula.

Based on Riverside County Assessor's Roll for Fiscal Year 2004 general land uses within the SMR are:

- 7.0 square miles used or zoned for commercial/industrial purposes (1.3 percent);
- 16.2 square miles zoned for urban residential (<1 acre) purposes (3.0 percent);
- 184.8 square miles zoned for rural residential (>1 acre) purposes (33.7 percent);
- 3.6 square miles zoned for parks and recreation facilities purposes (0.7 percent);
- 19.0 square miles zoned for improved roadways, including roadways owned by Caltrans (3.4 percent);

[9] Santa Margarita Watershed Study: Hydrologic and Watershed Processes, Phillips, Williams and Associates, Ltd., October 26, 1998, page 14.

[10] Santa Margarita Watershed Study: Hydrologic and Watershed Processes, Phillips, Williams and Associates, Ltd., October 26, 1998, page 20.

[11] Santa Margarita Watershed Study: Hydrologic and Watershed Processes, Phillips, Williams and Associates, Ltd., October 26, 1998, page 1.

- 96.0 square miles zoned vacant or utilized for open space (17.5 percent);
- 6.5 square miles without land use designation (1.2 percent); and
- 59.3 square miles zoned for agricultural purposes (10.8 percent).

Additionally, within the SMR, approximately 155.1 square miles are owned by the federal government (28 percent) and not under the control of the Permittees. Section 3.4.1 of the DAMP describes the limits of the Permittees' authority over discharges from federal, state and other lands. Although runoff from these areas may be discharged into the MS4 owned and operated by the Permittees, the Permittees do not have direct or indirect authority over these areas.

In 1956, only 0.3 percent of the SMR (less than two square miles) was urbanized.[12] Almost half a century later, even with a significant rate of growth in population relative to the State and neighboring counties, 94 percent of the SMR remains in non-urban land uses (rural residential, agriculture, preserves and open space, state lands, federal lands, and tribal lands). Further, almost one-third of the SMR consists of federal, state, and tribal lands[13] that are not under the jurisdiction of the Permittees' MS4 programs. It is projected that the population of Riverside County will increase approximately 22 percent by 2010 with slower growth occurring in the south county, down from 20% to 10%.[14] Assuming that the urbanized area increases proportional to population, 92 percent of the SMR would remain in non-urban land uses in 2010. Much of the remaining lands will ultimately be incorporated into the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). The MSHCP requires the ongoing conservation of 500,000 acres within the County, a large portion of which are in the SMR.

2.4.2 Climate and Hydrology

The climate of the SMR is typically Mediterranean, being characterized by warm dry summers and cool rainy winters. About 75% of the precipitation occurs during the four-month period from December through March. Mean seasonal depth of precipitation ranges from less than 10 inches near Vail Reservoir to over 40 inches west of Palomar Observatory, varying with elevation and topographic influences.[15] Precipitation increases with increasing elevation to the summit of the Coastal range. Shading effects of the Coastal range lead to a marked decrease of precipitation throughout the lower portions of the Inland area. Precipitation increases again farther away from the Coastal range in the northeastern area of the Inland area.[16]

The upper drainage basin is formed almost solely by Murrieta Creek. Murrieta Creek is a major tributary of the greater 750 square mile Santa Margarita River watershed. This watershed consists of three major portions; the Murrieta Creek sub-watershed to the north, Temecula Creek subwatershed to the southeast, and Santa Margarita River to the southwest.

[12] State of California Department of Public Works, Division of Water Resources, Bulletin No. 57, Santa Margarita River Investigation, Volume I, June 1956.

[13] Riverside County Assessor Parcel Data, Close of Roll 2004.

[14] Southern California Association of Governments, May 2003.

[15] Ibid., pg. 11

[16] Ibid., pg. 38.

The watershed currently contains three major water storage reservoirs; Lake Skinner and the recently completed Diamond Valley Reservoir, which are part of the Murrieta Creek sub-watershed, and Vail Lake, which is part of the Temecula Creek sub-watershed. These reservoirs control over 50% of the Santa Margarita watershed. Runoff entering the reservoirs will be initially stored. Excess flows (depending on available storage volume) are discharged downstream. The combined reservoirs have a substantial storage capacity capable of significantly reducing downstream flows from the natural condition.

2.4.3 Physiography and Geology

Murrieta Creek flows between two lengthy strands of the Elsinore fault zone on land that has been down-dropped, relatively, by the faulting. Murrieta Creek flows southeasterly from the Wildomar area through the cities of Murrieta and Temecula to the confluence with Temecula Creek. It courses through the Elsinore trough at an average elevation of 1,100 feet above sea level. The lower 12.5 miles of Murrieta Creek drops in elevation 200 feet from an elevation of 1,200 feet. Physiographic features to the southwest include the Santa Rosa Plateau, and foothills of the Elsinore and Santa Ana Mountains which rise as much as 2,200 feet above Murrieta Creek. Land areas to the northeast of the creek consist of rolling hills and valleys which rise much less abruptly and are known as the "Perris block," a structural geologic feature that has been uplifted relative to the creek. Over the first 1.5 miles northeast of the creek, those rolling hills rise gradually to about 300 ft above the creek. Ultimately, they reach as much as 1,025 feet above the creek.[17]

Geologically, the Upper Santa Margarita watershed may originally have been a part of the Santa Ana River drainage system with the ancestral Temecula-Murrieta Creek flowing westward through Lake Elsinore. Over geologic time, the Santa Margarita River eroded the coastal mountain ridge headward sufficiently to "capture" the ancestral stream and eventually reverse the direction of Murrieta Creek.[18] These processes are continuing due to continued down-faulting and soils conditions, leading to significant natural erosion and sedimentation processes along the Santa Margarita River.

2.4.3.1 Surface Water

Murrieta and Temecula Creeks are perennial interrupted streams, that is, they include reaches in which the flow is continuous and others where flow is ephemeral. The areas of perennial flow are located in mountain area tributaries. The perennial flows disappear by seeping into the sands and gravels and resurfacing upstream of the confluence of Murrieta and Temecula Creeks. The creeks in the urbanized areas of the watershed, located primarily in the valley, are ephemeral and flows are observed only during and immediately after significant storm events. During major storms, after initial wetting, periods of intense rainfall result in rapid increases in streamflow in steep foothill and mountain areas.[19] Runoff in streams in the watershed is derived primarily from rainfall, and as a result, stream flow exhibits monthly and seasonal variations similar to those shown by the precipitation records. Absence of snow pack in the tributary watershed results in a rapid decrease in stream flow at the conclusion of the winter precipitation

[17] U.S. Army Corps of Engineers, Los Angeles District, Murrieta Creek Flood Control, Environmental Restoration and Recreation Final Feasibility Report, September 2000, pg. 25.
[18] State of California Department of Public Works, Division of Water Resources, Bulletin No. 57, Santa Margarita River Investigation, Volume I, June 1956, pgs. 10 & 11.
[19] Riverside County Flood Control & Water Conservation District, "Hydrologic Data for 1975-76 Season," March 1982, pg. 49.

season. Following severe storms, discharge in the larger streams often increases in a few hours time from practically no flow to a rate of thousands of cubic feet per second. Stream flows vary greatly from month to month and from season to season.[20]

Rising groundwater is currently observed in Murrieta Creek below its confluence with the Santa Gertrudis Channel. This is consistent with the observations with the rising groundwater conditions observed by the State of California in 1956.[21] Rising groundwater is also observed in Temecula Creek approximately one-quarter mile upstream of the Interstate 15 bridge. In 1956, the State of California observed rising groundwater occurring as far upstream as the Highway 74 Bridge. Based on the virtual absence of non-storm water flows and the rising groundwater conditions in lower Murrieta and Temecula Creeks observed prior to development of the watershed, there is no evidence that the rising groundwater is due to Urban Runoff nor that Urban Runoff has affected the quality of rising groundwater. However, use and disposal of reclaimed water and agricultural and landscape irrigation in the watershed may affect groundwater quality. Until October 2002, the Rancho California Water District augmented the flow of the Santa Margarita River with reclaimed water at a point about five miles upstream from the Temecula gaging station. Since that time, the Rancho California Water District has discharged imported water downstream of the confluence of Murrieta and Temecula Creeks.

For the average annual event, it is estimated that approximately 89 percent of the volume of runoff in the SMR is due to non-urban land uses not regulated under the federal storm water program. For the 100-year 24-hour event, 93 percent of the volume of runoff will be due to non-urban land uses. These estimates are based on the assumption that precipitation is constant across the watershed. However, precipitation (and resultant runoff volumes) in the non-urbanized upland areas is as much as four times greater than that from the urbanized valley areas.[22]

[20] State of California Department of Public Works, Division of Water Resources, Bulletin No. 57, Santa Margarita River Investigation, Volume I, June 1956, pg. 48.
[21] Ibid.
[22] Ibid., pg. 11

2.4.4 Drainage Area Description

2.4.4.1 Surface Water Bodies

Approximately 8 percent of Riverside County drains into surface water bodies within the SMR. Those inland surface waters (or portions thereof) and their identified Beneficial Uses are:

Inland Surface Waters

Santa Margarita River (Hydrologic Unit Basin Number 2.22)
- Murrieta Creek
  - Slaughterhouse Canyon
- Cole Canyon
  - Warm Springs Creek
    - Diamond Valley Reservoir
- Santa Gertrudis Creek
  - Tucalota Creek
  - Lake Skinner
- Temecula Creek (Hydrologic Unit Basin Number 2.92)
  - Iron Spring Canyon
- Temecula Creek (Hydrologic Unit Basin Number 2.84)
  - Tule Creek
    - Million Dollar Canyon
  - Cottonwood Creek
- Vail Lake
  - Wilson Creek
    - Cahuilla Creek (Hydrologic Unit Basin Number 2.73)
      - Hamilton Creek
    - Cahuilla Creek (Hydrologic Unit Basin Number 2.71)
      - Elder Creek
  - Arroyo Seco Creek
  - Kolb Creek
- Temecula Creek (Hydrologic Unit Basin Number 2.52)
  - Pechanga Creek

Santa Margarita River (Hydrologic Unit Basin Number 2.21)
- DeLuz Creek

The Beneficial Uses of these inland surface water bodies include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species.

2.4.4.2 Municipal Separate Storm Sewer System

The MS4 facilities operated by the Permittees in the SMR consist of an estimated 145 miles of major MS4 facilities (e.g., storm drains, channels, retention basins, etc.). A map of the MS4 facilities within the SMR is provided in Appendix D. Each SMR Permittee maintains a labeled map of their entire MS4 and the associated drainage areas. The SMR Permittees review their MS4 map on an annual basis and update their maps, as needed. The updated MS4 maps are then included in each Annual Report.

2.4.5 Current Water Quality Concerns and Issues

Urban Runoff discharged to MS4s in Riverside County ultimately flows to various surface water bodies (inland streams, lakes, and reservoirs) and typically carries pollutants that originate from numerous dispersed and uncontrolled sources. Examples of pollutants that may be present in Urban Runoff are fertilizer, heavy metals, nutrients, petroleum products, sediment, bacteria, chemicals, and litter.

Because the SMR is large and has many land uses, the water quality concerns in sub-watersheds vary. However, each land use can potentially contribute pollutants to nearby streams, rivers, and lakes. The infrastructure that supports people's activities (e.g., roads, parks, MS4, and wastewater collection and treatment facilities) may contribute to water quality concerns if not properly managed. Other sources of storm water runoff, including agricultural areas, are exempt from the requirements of the NPDES permitting program established under the CWA. In addition, some pollutants, such as total suspended solids, may be found at elevated levels in runoff from non-urban land uses. Further, certain activities that generate pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography.

Some Receiving Waters in the SMR (for example, Murrieta Creek and the Upper Santa Margarita River) are identified as impaired due to phosphorus. The 2006 303(d) List for the area under the jurisdiction of the San Diego Regional Board can be viewed or downloaded from the following website: http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r9_final303dlist.pdf. However, the San Diego Regional Board has identified Receiving Waters that require additional monitoring to improve the quantity and/or quality of data used to develop the 303(d) List. Currently, some Receiving Waters within the SMR have been designated as needing additional monitoring data for parameters such as metals (iron, manganese), total dissolved solids, sediment, or sulfates. No TMDLs have been established for Receiving Waters in the SMR. A summary of the 2006 303(d) List for the SMR is presented in Table 2-2.

Table 2-2. 2006 303(d) List of Water Quality Limited Segments

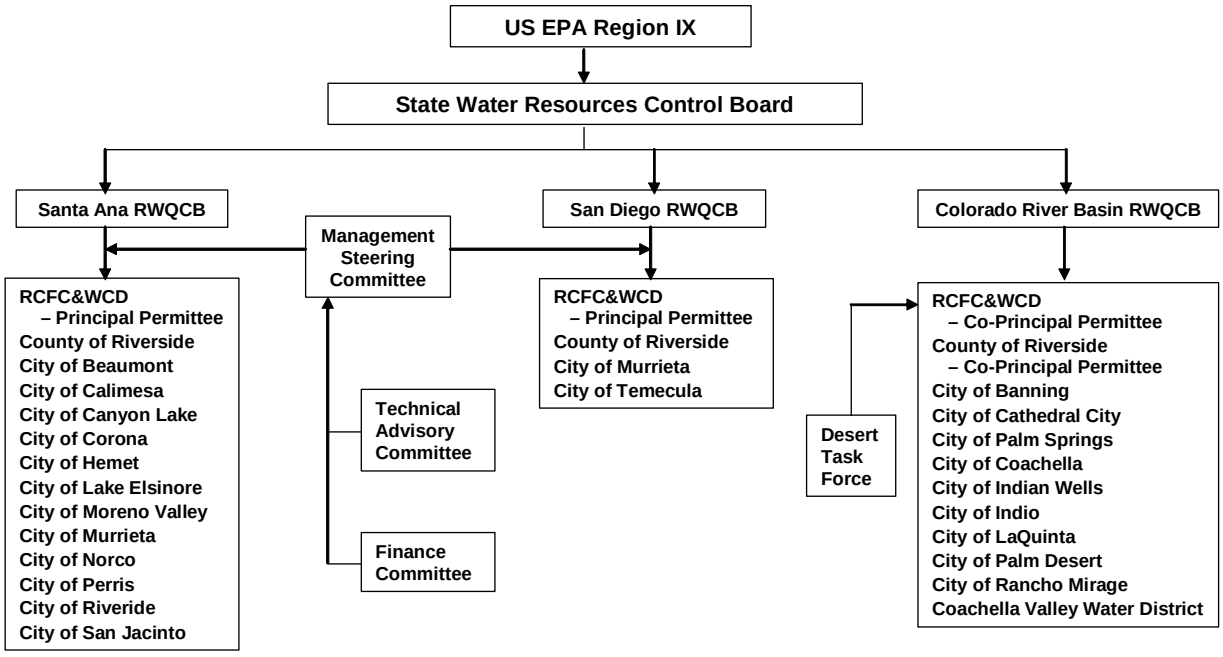
Waterbody	Pollutants	Potential Sources
Santa Margarita Lagoon	Eutrophic;	Nonpoint/Point Source
De Luz Creek	Iron Manganese	Source Unknown Source Unknown
Long Canyon	Total Dissolved Solids	Source Unknown;
Murrieta Creek	Iron Manganese Nitrogen Phosphorous	Source Unknown Source Unknown Source Unknown Urban Runoff/Storm Sewers Unknown Nonpoint Source Unknown Point Source
Rainbow Creek	Iron Sulfates Total Dissolved Solids	Source Unknown Source Unknown Source Unknown
Sandia Creek	Iron Manganese Nitrogen Sulfates Total Dissolved Solids	Source Unknown Source Unknown Source Unknown Source Unknown Urban Runoff/Storm Sewers Flow Regulation/Modification Natural Sources Unknown Nonpoint Source Unknown Point Source
Santa Margarita River (Upper)	Phosphorus;	Urban Runoff/Storm Sewers Unknown Nonpoint Source Unknown Point Source
Temecula Creek	Nitrogen Phosphorus Total Dissolved Solids	Source Unknown Source Unknown Source Unknown

3.0 PROGRAM MANAGEMENT

3.1 PRINCIPAL PERMITTEE AND PERMITTEE RESPONSIBILITIES

Riverside County is located within the jurisdictions of the Colorado River Basin, San Diego and Santa Ana Regional Boards, each of which has issued an MS4 Permit for the areas within their jurisdiction. Although each MS4 Permit is unique, they address the same program elements. The overall organization of the Riverside County Urban Runoff Management Program is described in Figure 3-1 and described further in the remainder of this subsection.

Figure 3-1. Organizational Chart Riverside County Municipal Storm Water NPDES Permits



RWQCB: Regional Water Quality Control Board
RCFC&WCD: Riverside County Flood Control & Water Conservation District

3.1.1 Implementation Agreements

3.1.1.1 Santa Ana Region

In November 1991 the District, Riverside County, and the cities of Beaumont, Corona, Hemet, Lake Elsinore, Moreno Valley, Norco, Perris, Riverside, and San Jacinto entered into a formal NPDES Storm Water Discharge Permit Implementation Agreement for the SAR. The purpose of the Implementation Agreement was to establish the responsibilities of the Principal Permittee and the Co-Permittees and to provide for funding of "umbrella" activities. The Implementation Agreement was subsequently amended to add the cities of Canyon Lake, Calimesa and Murrieta, address additional requirements of the subsequent versions of the MS4 Permit and establish the responsibilities of the Permittees as defined in the Third-term SAR MS4 Permit. The Third-term SAR MS4 Permit requires the Permittees to evaluate

the Implementation Agreement by November 30th of each year to determine the need, if any, for revision. The Annual Report must include the findings of this review and a schedule for any necessary revision(s).

Under the terms of the 2003 SAR Implementation Agreement (included as Appendix E, the Principal Permittee is required to:

- Comply with Section I.A (Responsibilities of the Principal Permittee) of the Third-term SAR MS4 Permit.
- Comply with Section II (Discharge Limitations/Prohibitions), Section III (Receiving Water Limitations), Section IV (Implementation Agreement), Section V (Legal Authority/ Enforcement), Section VI (Illicit Connections/Illegal Discharges; Litter, Debris and Trash Control), Section VII (Sewage Spills, Infiltration into MS4s from Leaking Sanitary Sewer Lines, Septic System Failures, and Portable Toilet Discharges), Section VIII (New Development, Including Significant Redevelopment), Section IX (Municipal Inspection Program), Section X (Education and Outreach), Section XI (Municipal Facilities Programs and Activities), Section XII (Municipal Construction Projects/Activities), Section XIII (Program Management/DAMP Review), Section XIV (Monitoring and Reporting Program), Section XV (Provisions) and Section XVI (Permit Expiration and Renewal) of the Third-term SAR MS4 Permit as they pertain to District facilities and operations.
- Perform all the sampling data collections and assessment requirements described in the Monitoring and Reporting Program of the Third-term SAR MS4 Permit. Specifically, the District prepares the required narrative for all reports and provides the SAR Co-Permittees an opportunity to review and comment on any such narrative.
- Perform all of the reporting requirements described in the Monitoring and Reporting Program of the Third-term SAR MS4 Permit. With respect to such reporting requirements, the District:
  a) Prepares the required narrative for such reports; and
  b) Provides the Co-Permittees an opportunity to review and comment on such narrative.

Also under terms of the 2003 SAR Implementation Agreement, each Permittee is required to:

- Comply with Section I.B (Responsibilities of the SAR Co-Permittees) of the Third-term MS4 Permit.
- Comply with Section II (Discharge Limitations/Prohibitions), Section III (Receiving Water Limitations), Section IV (Implementation Agreement), Section V (Legal Authority/ Enforcement), Section VI (Illicit Connections/Illegal Discharges; Litter, Debris and Trash Control), Section VII (Sewage Spills, Infiltration into MS4s from Leaking Sanitary Sewer Lines, Septic System Failures, and Portable Toilet Discharges), Section VIII (New Development, Including Significant Redevelopment), Section IX (Municipal Inspection Program), Section X (Education and Outreach), Section XI (Municipal Facilities Programs and Activities), Section XII (Municipal Construction Projects/Activities), Section XIII (Program Management/DAMP Review), Section XIV (Monitoring and Reporting Program), Section XV (Provisions) and Section XVI (Permit Expiration and Renewal) of the Third-term SAR MS4 Permit as they pertain to each Permittee's facilities and operations.

- Demonstrate compliance with all requirements of the Third-term SAR MS4 Permit through timely implementation of the approved DAMP and any approved modifications, revisions, or amendments.
- Provide the District all information needed to satisfy the reporting requirements described in the Monitoring and Reporting Program of the Third-term SAR MS4 Permit. Specifically, the Co-Permittees provide information on storm water facilities and/or other data when requested by the District; submit the requested individual information to the District no later than November 1 of each year, and provide the required information on District-approved forms.

In accordance with the 2003 SAR Implementation Agreement, in the event that the District requires the services of a consultant (or consultants) to prepare manuals, develop program components, or perform studies relevant to the SMR, the cost of the consultant services are shared by the District and the Co-Permittees. The shared costs are allocated as a 50% contribution from the District and a 50% contribution from the Co-Permittees. The percentage contribution from each of the Co-Permittees is a function of population. The 2003 SAR Implementation Agreement is updated as necessary to reflect evolving DAMP implementation needs.

3.1.1.2 Santa Margarita Region

Since 1991 the Permittees have coordinated implementation of the storm water compliance program through NPDES Storm Water Discharge Permit Implementation Agreement for the San Diego Region (SMR). The 2004 San Diego Region Implementation Agreement is provided in Appendix F.

Under the 2004 San Diego Region Implementation Agreement, the District (Principal Permittee) is required to:

- Comply with Provision M (Principal Permittee Responsibilities) of the Third-term SMR MS4 Permit, including providing the Co-Permittees an opportunity to review and comment on the Watershed Storm Water Management Plan (SWMP), Watershed SWMP Annual Report and any other reports prepared by the District on behalf of the Permittees.
- Comply with Provisions A through N (Prohibitions, Non-Storm Water Discharges, Receiving Water Limitations, Legal Authority, SWMP, Development Planning, Construction, Existing Development, Education, Illicit Discharge Detection and Elimination Program, Watershed-Based Activities, Monitoring and Reporting Program, and Standard Provisions, respectively) of the Third-term SMR MS4 Permit, as they pertain to District facilities and operations, at no cost to the Co-Permittees.
- Coordinate watershed efforts specified in Provision K.
- Conduct public education activities on a regional basis that focus on reducing pollution of Urban Runoff, including radio, print or other forms of advertising, developing brochures, and attending public events.
- Develop and implement mechanisms to determine the effectiveness of the regional public education program.

- Perform sampling of surface water and Urban Runoff in accordance with the provisions of the Monitoring and Reporting Program, Provision II.A of the Third-term SMR MS4 Permit. The Permittees have identified sampling locations, subject to approval by San Diego Regional Board.
- Contract with a water quality analytical laboratory to provide analysis of water quality samples collected for compliance with the Monitoring and Reporting Program.

Also under terms of the 2004 San Diego Region Implementation Agreement, each Co-Permittee is required to:

- Comply with Provisions A through N (Prohibitions, Non-Storm Water Discharges, Receiving Water Limitations, Legal Authority, SWMP, Development Planning, Construction, Existing Development, Education, Illicit Discharge Detection and Elimination Program, Watershed-Based Activities, Monitoring and Reporting Program, and Standard Provisions, respectively) of the Third-term SMR MS4 Permit, as they pertain to Co-Permittee facilities and operations.
- Enforce local ordinances and regulations within their respective jurisdictions to ensure compliance with the Third-term SMR MS4 Permit, including the exercise of land use controls and the exercise of police powers.
- Demonstrate compliance with the Third-term SMR MS4 Permit requirements through timely implementation of the approved Individual and Watershed SWMPs and any approved modifications, revisions or amendments thereto.
- Provide to the District (on District-provided forms) the information needed to satisfy the reporting requirements as described in the Provisions E, L, and K or to respond to information requests from the San Diego Regional Board. The Co-Permittees:
    a) Submit their Individual SWMPs and data necessary to prepare the Watershed SWMP and Receiving Waters Monitoring Reports no later than September 15 of each year.
    b) Provide information on existing MS4 facilities and/or other data as it pertains to Co-Permittee facilities when requested by District.
- Develop and implement public education programs targeted at individual communities or stakeholders within their respective jurisdictions.
- Comply with Provision II.B of the Monitoring and Reporting Program.

In accordance with the 2004 San Diego Region Implementation Agreement, the Permittees jointly provide funding for certain regional efforts that benefit the SMR, including but not limited to: County Environmental Health's Compliance Assistance Program; the County Fire Department's Hazardous Materials Team; County Environmental Health's Household Hazardous Waste (HHW) and Antifreeze, Batteries, Oil and Paint (ABOP) collection program; the District's membership with the California Stormwater Quality Association (CASQA) on behalf of Permittees; the District's administration of Principal Permittee duties, and other NPDES support activities as needed. Additionally, if the District requires the services of a consultant or consultants to assist in preparing manuals, developing programs or performing studies relevant to the entire SMR, the cost of the consultant services are shared by Permittees in accordance with the cost sharing provisions set forth in Section 3 of the 2004 San Diego Region

Implementation Agreement. The District notifies the Co-Permittees in writing of the District's request for proposals from consultants, selection of a consultant, consultant's fee, contract timetable, and payment schedule. The Co-Permittees the opportunity to participate in decisions related to consultant's services.

3.1.2 Management Steering Committee

The Permittees established the Management Steering Committee to address Urban Runoff management policies for the SAR and SMR and to review and approve revisions to the DAMP and the SAR and SMR Implementation Agreements. In addition, the Management Steering Committee facilitates coordination with related water quality management programs and monitoring and establishes positions relative to legislative and regulatory initiatives. The Management Steering Committee consists of city managers or equivalent representatives from each of the Co-Permittees and an executive-level representative from the County. The General Manager-Chief Engineer of the District participates on the Management Steering Committee as Chair. The District provides staff support to the Management Steering Committee. The Management Steering Committee meets quarterly or as determined by the Chair. The Third-term SAR MS4 Permit requires the designated representatives to attend three out of four Management Steering Committee meetings each year.

3.1.2.1 Finance Committee

In 2003, the Management Steering Committee recognized the need to evaluate long term funding solutions of Urban Runoff management programs and regional facilities and established the Finance Committee. The Finance Committee is appointed by the Management Steering Committee and consists of Permittee staff with expertise in public finance. The Finance Committee reviews financial issues and develops findings and provides recommendations to the Management Steering Committee.

3.1.2.2 Technical Committee and Work Groups

A Technical Committee has been established consisting of representatives formally appointed by the city manager or equivalent of each Permittee. The purpose of the Technical Committee is to direct the development of the DAMP and to coordinate the implementation of the overall MS4 Permit compliance program. The Technical Committee members also provide technical assistance and support to facilitate coordination with related water quality management programs and monitoring and to respond to legislative and regulatory initiatives. The District chairs and provides staff support to the Technical Committee. The Third-term SAR MS4 Permit requires designated members to attend eight out of ten Technical Committee meetings each year.

Work Groups have been established by the Technical Committee to oversee the development and implementation of the DAMP program components. The Work Groups include Permittee representatives and may also include industry representatives, representatives of environmental special interest groups, and other stakeholders as appropriate. A Permittee representative chairs each Work Group. Work Groups have been established to guide the following program components:

- Program Implementation / Public Education
- New Development/Redevelopment
- Construction

- Industrial and Commercial Facility Compliance
- Monitoring

3.2 INTERAGENCY AGREEMENTS AND COOPERATIVE ACTIVITIES

The District, in its role as Principal Permittee, administers or participates in several interagency programs in consultation with the SAR and SMR Co-Permittees. These programs generally at least benefit the SAR and/or SMR, but may also look at broader issues. Copies of the interagency agreements supporting these areas-wide programs are provided in Appendix G. These efforts may be expanded, reduced or abandoned over time based on budget, changing regulations, program needs, program effectiveness consideration, or other factors.

Those interagency programs under agreement as of May 2005 include:

- Storm Water Quality Task Force
- Storm Water Monitoring Coalition
- Hazardous Materials Emergency Response,
- Household Hazardous Waste Collection/ Antifreeze, Battery, Oil and Latex Paint (ABOP) Program,
- Santa Margarita River Executive Management Team
- Commercial/Industrial Compliance Assistance Program, and
- Various Public Education and Outreach Programs.

In addition, the District, in consultation with the Permittees, participates in several cooperative activities through informal or formal regional stakeholder workgroups. Stakeholders often include other public and private entities within the SAR or SMR. These efforts can broadly be categorized as watershed management efforts to address storm water quality issues within the SAR and/or SMR. These efforts may be expanded, reduced or abandoned over time based on budget, changing regulations, program needs, program effectiveness consideration, or other factors.

As of May 2005, the District and Permittees are participating in the following regional stakeholder efforts:

- Lake Elsinore / San Jacinto Watershed Authority
- San Jacinto Watershed Council
- Santa Ana Reach 3 Bacterial Indicator TMDL Workgroup
- Lake Elsinore/Canyon Lake Nutrient TMDL Stakeholder Workgroup
- Canyon Lake Bacterial Indicator TMDL Stakeholder Workgroup
- San Diego Proposition 13 Santa Margarita Watershed Project Team.

3.3 FUNDING SOURCES

The costs incurred by the Permittees in implementing the DAMP fall into two broad categories:

- **Shared Costs**. These are costs that fund activities performed mostly by the District under the Implementation Agreements. These activities include overall storm water program coordination; interagency agreements; representation at the CASQA, meetings of the Regional Boards or State Water Resources Control Board (State Board) and other public forums; preparation and submittal of compliance reports (including the DAMP) and other reports required under the Third-term MS4 Permits, Urban Runoff monitoring, Water Code Section 13267 requests, public education, CAP, budget and other program documentation; coordination of consultant studies, Permittee meetings, and training seminars.
- **Individual Permittee Costs for DAMP Implementation**. These are costs incurred by each Permittee for implementing within its jurisdiction the BMPs (drainage facility inspections for illicit connections, drainage facility maintenance, drain inlet/catch basin stenciling, emergency spill response, street sweeping, litter control, public education, construction activity inspection, development of implementation plans, etc.) comprising the DAMP.

Historically, the Permittees have employed four funding methods to finance their MS4 Permit compliance activities. Further, many Permittees utilize a combination of these funding sources. The different methods include:

- **Santa Ana and Santa Margarita Watershed Benefit Assessment Areas**. In 1991, the District established the Santa Ana and Santa Margarita Watershed Benefit Assessment Areas to fund its MS4 NPDES permit activities in the respective watersheds. Currently, the Benefit Assessment revenues fund both area-wide MS4 NPDES permit program activities and the District's compliance activities as a Permittee. In 2003/04 The Santa Ana Benefit Assessment generated approximately $1.7 million dollars in revenue, and the Santa Margarita Benefit Assessment generated approximately $345,000 dollars in revenue. Available fund balances allowed the Benefit Assessment fund to contribute approximately $2.6 million towards District NPDES compliance costs and regional NPDES program implementation. Revenue generated in a particular Benefit Assessment area must be spent only within that area.
- **County Service Area (CSA) 152**. In December 1991, the County of Riverside formed CSA 152 to provide funding for compliance activities associated with the SAR MS4 Permit. Under the laws that govern CSAs, sub-areas may be established within the overall CSA area with different assessment rates set within each sub-area. The cities of Corona, Lake Elsinore, Moreno Valley, Norco, Riverside, Murrieta and San Jacinto participate in CSA 152.
- **Utility Charge**. The City of Hemet funds a portion of its MS4 Permit compliance program activities through a utility charge
- **General Fund /Other Revenues**. The remaining Permittees (Beaumont, Calimesa, Canyon Lake, Hemet, Murrieta, Temecula and Perris) utilize general fund revenue to finance their MS4 Permit compliance activities. Other Permittees may also utilize general fund revenues to supplement financing of MS4 Permit compliance activities.

- **Fees**. Several Permittees charge fees for services such as inspections, plan check, and other recoverable costs relative to the Third-term MS4 Permits.

New funding sources or alternative combinations of funding sources may be required to ensure perpetual funding of Third-term MS4 Permit requirements. The Permittees continually review and modify their funding sources based on changing regulatory requirements, changing state and federal law, local municipal priorities and other considerations as necessary.

3.4 LEGAL AUTHORITY AND ENFORCEMENT

3.4.1 Legal Authority

Although other state and federal agencies, including the Regional Boards, may have overlapping legal authority over some discharges to and from MS4s (i.e., through the State's General Permits for storm water discharges associated with industrial facilities or construction activities), the Permittees must still independently establish, maintain and enforce adequate legal authority to control discharges to the MS4s (40 CFR §122.26(d)(2)(i)(A-F)). Conversely, the other state and federal agencies are independently responsible for enforcing their own legal authorities. Permittee legal authority can take the form of ordinances, statutes, permits, contracts or similar means, as necessary. At minimum, the Permittee's legal authority must:

- Prohibit Illegal Discharges (spills, dumping or disposal of materials other than storm water) to the MS4. Examples of Illegal Discharges include discharges of:
  - Sewage;
  - Wash water from cleaning or hosing of residential, municipal, industrial or commercial areas;
  - Runoff from material storage areas containing chemicals, fuels, grease, oil or other pollutants.
  - Pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
  - Sediment, pet waste, vegetation clippings, or other landscape or construction related wastes; and
  - Food-related wastes (e.g., grease, fish processing, and restaurant kitchen mat and trash bin wash water, etc.).

  It should be noted that some non-storm water discharges need not be prohibited. Section 4 of the DAMP provides additional information regarding these discharges.

- Prohibit and eliminate Illicit Connections to the MS4 as described in Section 4 of this DAMP;

- Control the contribution of pollutants to the MS4 through Urban Runoff associated with Development Projects[23], construction, industrial, residential and municipal activities within their jurisdiction as described in Sections 5, 6, 7, 8, and 9 of this DAMP;
- Require compliance with storm water ordinances, permits, contracts or orders;
- Authorize the Permittee to conduct the inspections, surveillance and monitoring necessary to determine compliance and noncompliance with local storm water ordinances, permits and the DAMP;
- Utilize enforcement mechanisms to require compliance with Permittee storm water ordinances, permits, contracts, or orders; and
- Control the contribution of pollutants associated with Urban Runoff through interagency agreements among Permittees.

Adequate legal authority is a prerequisite for Permittees to effectively implement compliance programs to reduce pollutants in discharges of Urban Runoff to the MEP. The legal authority necessary to implement compliance programs and pursue enforcement is provided to the Permittees through local storm water and erosion control ordinances. All Permittees (excluding the District[24]) have adopted a comprehensive storm water ordinance based on a model developed and adopted by the County of Riverside. The ordinances provide the Permittees with the legal authority to implement the requirements of the Third-term SAR MS4 Permit.

Santa Ana Region Specific Elements

The ordinances provide the Permittees with the legal authority to implement the requirements of the Third-term SAR MS4 Permit.

Santa Margarita Region Specific Requirements

Certification of adequate legal authority to comply with the Third-Term Santa Margarita MS4 Permit, signed by their chief legal counsel, is provided in the Individual Storm Water Management Plans. This includes certification that the Permittee's ordinances require implementation of the minimum BMPs designated by the Permittees for various activities and provides for the following sanctions or their equivalent: stop work authority, non-monetary penalties, fines, financial security, and/or permit denials for non-compliance.

The management and discharge controls addressed by the Permittees' local storm water and erosion control ordinances may be summarized as follows:

- The disposal of pollutants onto public or private land is prohibited;

[23] "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

[24] The District already had the authority needed to implement the requirements of the enforcement/compliance programs and as such did not need to adopt the model storm water ordinance.

- Construction activities are required to comply with the local storm water ordinance and applicable erosion and sediment control ordinances;
- Development Projects[25] are required to implement BMPs to prevent deterioration of receiving water quality that could impair subsequent or competing beneficial uses of the water;
- Illicit connections to the MS4 are prohibited;
- Illegal Discharges (e.g., Non-storm water discharges), with the exception of discharges permitted by the Santa Ana or San Diego Regional Boards and those non-prohibited discharges identified in Section 4.1 of the DAMP, are prohibited. Illegal Discharges are defined in the Glossary (Appendix A).

The Permittees do not have legal authority over storm water discharges into their respective MS4s from agricultural activities, state and federal facilities, utilities and special districts, Native American tribal lands, wastewater management agencies and other point and non-point source discharges otherwise permitted by, or under the jurisdiction of, the Santa Ana or San Diego Regional Boards. Examples of non-point sources of pollutants not under the control of the Permittees include materials from operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography. In the Third-term SAR MS4 Permit, the Santa Ana Regional Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. Similarly, certain activities that generate pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate.

Also, Permittees do not have the authority to enforce the provisions of California's General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit-Industrial) or California's General Permit for Storm Water Discharges Associated with Construction Activity (General Permit-Construction). The State Board issues these NPDES permits, and neither the State Board nor the Santa Ana or San Diego Regional Board has the authority under the CWA to delegate responsibility for administering these permit programs to the Permittees. However, local storm water and erosion control ordinances may address items similar to those identified in these statewide permits.

If the Permittee's Illicit Connection/Illegal Discharge (IC/ID) Detection and Elimination Program or Receiving Waters Monitoring Program identifies a non-jurisdictional discharge causing, or threatening to cause, a condition of pollution, contamination or nuisance (as defined in CWC Section 13050), in waters of the State, the following minimum guidelines will be followed:

1) The non-jurisdictional discharge will be documented.
2) When appropriate, samples of the non-jurisdictional discharge will be collected.
3) In emergency situations, the Hazardous Materials Emergency Response Team will be utilized and the Permittees will coordinate with the Office of Emergency Services and the applicable

[25] "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

Regional Board to control the impact of the non-jurisdictional discharge on MS4s and Receiving Waters.

4) Notify the discharger verbally, at minimum, of their illegal discharge and the impact on MS4s and Receiving Waters and provide appropriate educational materials.

5) If necessary, notify the appropriate enforcement agency and/or the applicable Regional Board of the non-jurisdictional discharge causing, or threatening to cause, a condition of pollution, contamination or nuisance, in MS4s or Receiving Waters.

Santa Margarita Region Specific Elements

Where non-jurisdictional IC/Ids are identified, the Permittees will notify the responsible entity of the availability of technical assistance and provide guidance in seeking grants and other assistance to address the non-jurisdictional discharge. Also, the Permittees will, as appropriate, participate in watershed management efforts with other federal, state, regional and local agencies and other watershed stakeholders to address Urban Runoff issues within the watershed.

3.4.2 Enforcement/Compliance Strategy

As required under the Second-term SAR MS4 Permit, the Permittees developed an Enforcement/Compliance Strategy for ensuring that construction sites, commercial establishments, and industrial facilities operate in compliance with the local storm water and Urban Runoff ordinances and local erosion control ordinances. The goal of the Enforcement/Compliance Strategy was to document the enforcement of storm water ordinances fairly and consistently throughout the SAR. It is recognized that there is no clear, standard approach to handling all of the enforcement situations that may be encountered and that the judgment of each jurisdiction's staff will guide the appropriate level of response.

The Enforcement/Compliance Strategy has been integrated into the appropriate elements of this DAMP and those sections provide guidelines for Permittees in implementing enforcement actions appropriate for a given violation. Appendix H contains information regarding which Permittee departments are responsible for implementing the various aspects of the enforcement/compliance programs within its jurisdiction.

The Permittees have obtained all necessary legal authority to comply with the Third-term MS4 Permits through adoption of ordinances and/or municipal code modifications. As required by the Third-term MS4 Permits, the Permittees have reviewed their ordinances to verify that they include sanctions to ensure compliance. In addition, the Permittees have reviewed their litter/trash control ordinances to determine the need for revision to improve the effectiveness of these ordinances and their grading/erosion control ordinances in order to reduce erosion. Where needed, these ordinances have been revised.

3.4.2.1 Prioritize Violations

The local storm water and erosion control ordinances cover a wide range of prohibited activities with varying magnitudes of potential impact on the beneficial uses of Receiving Waters. For example, discharges of either hazardous materials (e.g., solvents and pesticides) or non-hazardous materials (e.g., food wastes, trash, and debris) into the MS4 are violations of storm water ordinances subject to enforcement. Similarly, an accidental spill into a catch basin inlet and an intentional discharge from an

illicit connection are both violations. Prioritizing violations is important in focusing local resources on those violations that may have the greatest potential impact on the quality of Receiving Waters.

It is not feasible to quantify the magnitude of violations of the storm water and erosion control ordinances. Instead, prioritizing violations is based on many factors, including the experience and professional judgment of the jurisdiction's staff. The factors that should be considered in prioritizing violations of local storm water and erosion control ordinances are presented in Table 3-1.

Table 3-1. Prioritization Factors for Violations

Prioritization Factor	Description
Characteristics of the potential pollutant	Based on chemical characteristics and potential to impact beneficial uses of receiving waters. The more toxic, hazardous, or detrimental to the beneficial uses of the receiving waters a pollutant is the higher priority the discharge.
Sensitivity of the affected receiving waters	The sensitivity of the affected receiving waters should be considered directly proportional to the priority of the violation because, for example, a more sensitive receiving water may suffer severe adverse effects from the discharge of a particular pollutant whereas a less sensitive receiving water may suffer no adverse effects from the same pollutant discharge. It is also important to consider that a receiving water may be highly sensitive to one potential pollutant discharge while, at the same time, completely insensitive to another potential pollutant. Examples of receiving waters that may be particularly sensitive include those with municipal supply or wildlife habitat designated beneficial uses.
Proximity of receiving waters	The closer a receiving water is to the discharge, the less chance there is for dispersion, dilution, or degradation of the potential pollutant. Therefore, the closer the discharge is to receiving waters, the higher priority of the violation.
Magnitude of discharge (volume and mass)	A larger illegal discharge should be of a higher priority than a smaller illegal discharge because as the magnitude of the pollutant discharge increases the extent of impact of the discharge on the environment increases as well.
Responsiveness of the discharger in taking corrective actions	A discharger who is responsive and implements a good faith effort to correct a violation is more likely to minimize adverse impacts to surface water quality than a discharger who takes no action to correct a violation. Therefore, the priority of a violation should decrease as the responsiveness of the discharger increases.
Intent of the discharger	Is the violation accidental or the result of an accident or a deliberate attempt to circumvent regulations?
Frequency of the violation	Violations of local storm water and erosion control ordinances that are continuous or reoccurring should be of a higher priority than isolated occurrences of violations. The more frequent a violation, the more likely it is that the discharge will impact surface water quality.
Previous history of non-compliance of the responsible party	A poor history of non-compliance of a discharger should result in a higher prioritization of subsequent violations as compared to a discharger with a good history of compliance because a history of non-compliance is evidence of a discharger's lack of concern for complying with local storm water and erosion control ordinances.

Table 3-2 has been developed to facilitate consistency in enforcement actions by the Permittees in the SAR and SMR. Table 3-2 provides general guidance for categorizing the severity of violations based upon the factors and/or circumstances associated with a violation. Table 3-2 also describes criteria for characterizing the severity of a violation as "high", "medium", or "low." For example, using Table 3-2, the accidental dumping of 20 gallons of trash several hundred yards away from an ephemeral stream would be considered a "low" priority violation. However, the intentional discharge of 2,000 gallons of pesticide directly into aquatic wildlife habitat would be a "high" priority violation.

In some cases, based on Permittee evaluation of circumstances, an individual violation may be categorized higher or lower than is indicated in Table 3.2. Violations may also not clearly fall into any single severity priority level described in Table 3-2. It is more likely that a violation would be characterized by factors representing more than one of the priority levels described in Table 3-2. In this case, a subjective evaluation of the violation would be required to select the priority level most representative of the characteristics and circumstances surrounding the violation.

Table 3-2. Severity of Violations

Factors Affecting the Severity of Violations	Severity Priority Level		
	High	Medium	Low
Pollutant Characteristics	Hazardous Materials (e.g., pesticides and solvents)	Metals, Nutrients, Sediment, other Non-Hazardous Materials	Trash and Debris
Sensitivity of Receiving Waters	Drinking Water Source, Wildlife Refuge, Illegal Discharges containing pollutants identified as impairing the receiving water.	Recreational reservoir, riparian habitat	Dry, ephemeral stream
Proximity of Receiving Waters	Adjacent	Several hundred feet away	Several hundred yards away
Discharge Magnitude	1000's Gallons	100's Gallons	10's Gallons
Responsiveness of Discharger	No action to contain or mitigate discharge	Reactive to control discharge when requested (i.e., cooperative)	Implements spill control plan at own initiative or shows good faith effort to respond
Intent of Violation	Intentional	Discharge due to lack of controls or negligence	Implemented and maintained controls that failed (i.e., accident)
Frequency of Violation	Continuous	Intermittent	Isolated incident
Previous History of Discharger	Enforcement and cleanup historically resisted and more than one previous violation	Enforcement and cleanup performed when threatened and one or less previous violations	Enforcement and cleanup performed when requested and no previous violations

3.4.2.2 Enforcement and Compliance Responses

The enforcement/compliance response should be based on the severity of the violation. The types of enforcement/compliance responses available, in typical order of increasing severity, are:

- Education and information,
- Verbal warning,
- Written warning,
- Notice of violation or non-compliance,
- Administrative compliance order,
- Stop work order or cease and desist order,

- Civil citation or injunction,
- Administrative fine, and
- Referral to the Environmental Crimes Strike Force for criminal prosecution (infraction or misdemeanor).

Administrative Remedies

Notice of Noncompliance. The Notice of Noncompliance constitutes a basic request that the property owner or facility operator rectify the condition causing or threatening to cause noncompliance with the storm water or erosion control ordinance. The Notice of Noncompliance is generally issued when one or more of the following circumstances exist:

- The violation or threat is not significant and has been short in duration,
- The responsible party is cooperative and has indicated a willingness to remedy the conditions,
- The violation or threat is an isolated incident, and
- The violation or threat does not affect and will not harm human health or the environment.

Administrative Compliance Orders. The Administrative Compliance Order is generally an appropriate enforcement tool in the following circumstances:

- An actual condition of noncompliance exists, but the condition cannot be remedied within a relatively short period of time.
- The owner of the property or facility operator has indicated willingness to come into compliance by meeting milestones established in a reasonable schedule.
- The violation does not pose an immediate threat to human health or the environment.

Stop Work Order or Cease and Desist Order. The Stop Work Order or Cease and Desist Order are appropriate when the immediate action of the owner of property or operator of a facility is necessary to stop an existing discharge, which is occurring in violation of an ordinance. The Cease and Desist Order may also be appropriately issued as a first step in ordering the removal of nuisance conditions, which threaten to cause an unauthorized discharge of pollutants if exposed to rain or surface water runoff. The Cease and Desist Order is generally issued when one or more of the following circumstances exist:

- The violation or threat is immediate in nature and may require an emergency spill response or immediate nuisance abatement if left unattended.
- The violation or threat exhibits a potential situation that may harm human health or the environment.
- Contacts with the property owner or facility operator indicate that further authority of the Permittee may need to be demonstrated before remedial action is forthcoming.
- Prior Notices of Noncompliance have not obtained a favorable response.

Prior to issuance of any Administrative Compliance Order, Cease and Desist Order or commencement of other civil or criminal enforcement action against any person, the Permittee should deliver to the person a written Notice of Noncompliance, which states the act or acts constituting the violation and directs that the violation be corrected. The Notice of Noncompliance should provide the person with a reasonable time period to correct the violation before further proceedings are brought against the person. However, a Notice of Noncompliance should not be the first enforcement method used if egregious or unusual circumstances indicate that a stronger enforcement method is appropriate.

Criminal Enforcement

Misdemeanors. Criminal enforcement is appropriate when evidence of noncompliance indicates that the violator of the Ordinance has acted willfully with intent to cause, allow continuing or concealing a discharge in violation of the Ordinance.

Infractions. At the discretion of the Permittees' attorneys, misdemeanor acts may be treated as infractions. Factors that the attorney may use in determining whether the misdemeanor is more appropriately treated as an infraction may include the:

- Duration of the violation or threatened violation.
- Compliance history of the person, business or entity.
- Effort made to comply with an established compliance schedule.
- Existence of prior enforcement actions.
- Actual harm to human health or the environment from the violation.

Issuance of Citation. Where criminal enforcement is indicated, the inspector will issue a citation including the:

- Name and address of the violator,
- Provisions of the Ordinance violated,
- Time and place of required appearance before a magistrate.

The offending party must sign the citation thereby promising to appear. If the cited party refuses to sign the citation, the inspector may cause the arrest of the discharger, or may refer the matter to the municipal attorney for issuance of a warrant for arrest. Inspectors should be aware that cited parties have the right to demand the immediate review by a magistrate, and such a request must be granted. Inspectors should respond to such a request by referring the request to the Permittee's police department.

Referral to Environmental Crimes Strike Force

The Riverside County Environmental Crimes Strike Force is a committee designed to pursue enforcement of serious environmental crimes. Referral of a case to the Environmental Crimes Strike Force would occur after repeated attempts at obtaining compliance have failed.

Appropriate Enforcement/Compliance Responses

Permittees will emphasize and encourage voluntary compliance with storm water and erosion control ordinances to the maximum extent practicable. However, if routine inspections or dry weather monitoring indicate illicit connections or illegal discharges, they will be investigated and eliminated or permitted[26] as soon as possible, but no later than sixty (60) calendar days of receipt of notice by its staff or from a third party. Illicit discharges that are a serious threat to public health or the environment will be eliminated immediately.

Table 3-3 provides an example of appropriate enforcement responses that correspond to the severity priority level of a violation of a Permittees ordinances or other storm water laws, regulations or contracts as determined from Table 3-2. Permittees and the respective Regional Board should work cooperatively in implementing enforcement/compliance responses according to their respective authorities. State law limits the authority of Permittees to assess fines and penalties. However, the Regional Boards have substantial abilities to assess fines and penalties under State and federal law that can be used to augment local enforcement where superior regulatory authority and the ability to assess fines and penalties would be beneficial.

Table 3-3. Enforcement Responses for Violations Where Overlapping Authority Exists

Incident Severity Priority Level	Appropriate Enforcement Responses[1]	Lead Enforcement Agency	
		Permittee	Regional Board Support
High	Referral to Environmental Crimes Strike Force	X	X
	Citation	X	X
	Infraction	X	X
	Misdemeanor	X	X
Medium	Infraction	X	X
	Misdemeanor	X	X
	Stop work order or cease and desist order	X	
	Administrative compliance order	X	
	Notice of non-compliance	X	
Low	Administrative compliance order	X	
	Notice of non-compliance	X	
	Written warning	X	
	Verbal warning	X	
	Education and information	X	

[1] Education and information should be incorporated into all enforcement responses.

Table 3-3 also provides an example of how coordinated responses in areas of overlapping authority should occur, unless there is justification for implementing alternate actions. In general, the respective Regional Board may be asked to provide support in enforcement actions related to incidents that are or

[26] Unauthorized non-storm water discharges to surface waters and a MS4 must be permitted through the applicable Regional Board.

escalate to a high-priority status. The Permittees take the lead in initiating enforcement actions related to medium and low priority incidents. Finally, the respective Regional Board will take all enforcement actions related to compliance with the State General Permits.

Coordination of Enforcement/Compliance Activities with Other Permittees

Coordination with other Permittees and government agencies including the Santa Ana and San Diego Regional Boards is essential for successful implementation of an enforcement/compliance program. The entire MS4 is not controlled by a single Permittee, nor does any single Permittee have authority to take enforcement action for violations occurring outside of its jurisdiction. Further, other governmental agencies may have additional enforcement authorities that are appropriate to the situation. Each Permittee coordinates its enforcement activities, as practicable, with the appropriate Permittees and agencies in accordance with the following guidelines:

- Enforcement will be coordinated when multiple agencies have jurisdiction and an agency has not been able to obtain compliance by the discharger.
- Unless otherwise agreed to in writing, the lead enforcement agency role will be assigned on the basis of the origin of the discharge.
- The Regional Board may be asked to be the lead enforcement agency for higher priority illegal discharges in areas of overlapping authority and will be lead enforcement agency for all enforcement actions related to compliance with the State General Permits.
- Investigation and other relevant information will be shared between the participating agencies in a timely fashion.

Lead Enforcement Agency Responsibilities. The lead enforcement agency will assume the following responsibilities:

- Coordinating activities and assigning responsibilities (e.g., investigations, site visits, etc.) among participating agencies;
- Maintaining communication and information exchange among participating agencies; and
- Ensuring that follow-up actions are implemented.

Enforcement Activities Directory. A list of contact names identifying who should be contacted to coordinate enforcement activities for each Permittee, as well as the Regional Board and other potentially interested agencies is maintained by the District and distributed to the Permittees and others as appropriate to facilitate coordination of enforcement activities.

Coordination with the Regional Board

Under the Porter-Cologne Water Quality Act, the State has provided the Regional Boards with overriding authority to manage water quality and administer compliance with state and federal water quality law. This authority includes the ability to impose more significant fines and other sanctions than the Permittees. With this authority, the Regional Board may be more effective in obtaining the cooperation and compliance from those who violate storm water ordinances or regulations. The appropriate Regional

Boards are notified by the Permittees when findings of potential non-compliance with the State's General Storm Water Permits or the San Jacinto Watershed Construction Activities Permit have been identified or when Permittees have been unable to obtain the compliance of a party responsible for violating local storm water or erosion control ordinances. The list of contact names maintained by the District identifies the appropriate Regional Board staff to contact to initiate coordination of enforcement activities or to notify the Regional Board of potential findings of non-compliance. Where appropriate, notifications of potential non-compliance should be forwarded to the designated Regional Board contact person by the Permittee's storm water compliance coordinator.

Coordination with Other Agencies

In addition to the Regional Board, Permittees may also find it useful or necessary to coordinate or report findings of potential non-compliance to other government agencies with jurisdiction over water quality issues including the California Department of Fish and Game and the United States Fish and Wildlife Service. The list of contact names maintained by the District identifies the appropriate staff at these agencies to contact to initiate coordination of enforcement activities or to notify of potential findings of non-compliance.

3.4.2.3 Recordkeeping and Reporting

Minimum Guidelines for Recordkeeping

Information to be retained by the Permittees regarding their enforcement program includes:

- Documentation of staff training;
- Inspection notes or reports;
- Warning letters, violation notices, etc.;
- Documentation of follow-up actions;
- Contact reports from meetings or conversations with violators, Permittees, or other agencies; and
- Copies of notifications of potential non-compliance.

Annual Summary of Enforcement Actions

Each Permittee completes an annual summary of enforcement actions to document implementation of their enforcement and compliance programs. The summaries document the responsible party, address, type of facility, description of violation, date of initial violation, and enforcement/compliance actions implemented for violations identified by a Permittee. The Third-term MS4 Permits do not specify a minimum period for record retention; however, consistent with requirements specified in the General Permit-Industrial, the Permittees maintain compliance records for a minimum of five years.

3.4.3 Training for Enforcement

Training is necessary for successfully implementing the Permittee's enforcement/compliance programs so that staff can continue to recognize and respond to violations in an appropriate manner. Therefore, staff involved in implementing a Permittee's enforcement/compliance program are made aware of the local, state, and federal storm water regulations and the procedures developed to enforce these regulations.

Permittees provide storm water training to staff that are involved in inspections of industrial facilities and construction sites, enforcement of storm water and erosion control ordinances, administration of the enforcement/compliance program, and other staff as appropriate.

Staff training addresses the following areas:

- Requirements of the local storm water and erosion control ordinances;
- Requirements of the Third-term MS4 Permits and DAMP;
- Requirements of the General Permit- Industrial and General Permit- Construction;
- Requirements of the San Jacinto Watershed Construction Activities Permit, where applicable; and
- Requirements of the Enforcement/Compliance Strategy.

Industrial facility and construction site inspectors also receive training regarding storm water pollution prevention plans (SWPPPs) for construction sites, and selection of appropriate BMPs for industrial facilities and construction sites. Knowledge of the applicable requirements and the overall storm water program helps inspectors and other staff to recognize potential violations, respond with appropriate levels of enforcement, and effectively coordinate with other agencies. The Permittees individually maintain a log of trained staff and report training and this information is summarized in the Annual Reports.

4.0 ELIMINATION OF ILLICIT CONNECTIONS AND ILLEGAL DISCHARGES

4.1 DISCHARGE LIMITATIONS AND PROHIBITIONS

The Third-term MS4 Permits require the Permittees to comply with the following in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted there under, and the provisions of the CWA, as amended and the regulations and guidelines adopted there under:

- Under §122.26(d)(2)(i)(F) of the CWA, the Permittees must continue to prohibit illicit connections and illegal discharges (non-storm water) from entering their MS4.
- The discharge of Urban Runoff from each Permittee's MS4 facilities to the Waters of the U. S. containing pollutants that have not been reduced to the MEP is prohibited.
- Discharges from the MS4 that cause or contribute to exceedances of Receiving Water Quality Standards for surface or groundwater are prohibited.
- The Permittees must continue to effectively prohibit the discharge of non-storm water into their respective MS4s and to the Waters of the U. S. unless such discharge is authorized by a separate NPDES permit or specifically allowed by the following provisions. The Permittees are not required to prohibit the discharges identified below. If, however, any of the following allowable non-storm water discharges are identified by either a Permittee or the Executive Officer as a significant source of pollutants, coverage under Santa Ana Regional Board Order No. R8-2003-0061, NPDES No. CAG998001[27] (General Permit-De Minimus Discharges) s amended by Order Nos. R8-2006-0004 and R8-2005-0041, or other NPDES Permit or waste discharge requirements, may be required.

    1. Discharges covered by a NPDES permit, Waste Discharge Requirements, or waivers issued by the Regional Board or State Board. Unless a Permittee is the discharger, the Permittees are not responsible for any exceedances of Receiving Water Limitations associated with such discharges;
    2. Discharges from potable water line flushing and other potable water sources;
    3. Discharges from landscape irrigation, lawn/garden watering and other irrigation waters;
    4. Air conditioning condensate;
    5. Diverted stream flows;
    6. Rising ground waters and natural springs;
    7. Groundwater infiltration (as defined in 40 CFR 35.2005(20)) and uncontaminated pumped groundwater[28];
    8. Passive foundation drains;

[27] General Waste Discharge Requirements for Discharges to Surface Waters Which Pose an Insignificant (De Minimus) Threat to Water Quality Order No. R8-2003-0061, NPDES No. CAG998001.

9. Passive footing drains;
10. Water from crawl space pumps;
11. Flows from riparian habitats and wetlands;
12. Dechlorinated swimming pool discharges;
13. Waters not otherwise containing wastes as defined in Water Code Section 13050 (d); and
14. Other types of discharges identified and recommended by the Permittees and approved by the Regional Board.

- The Regional Board may issue Waste Discharge Requirements for discharges exempted from NPDES requirements, such as agricultural irrigation waters, if identified to be a significant source of pollutants.
- The Regional Board may amend the Third Term MS4 Permit to add categories of allowable non-storm water discharges based on a finding that they are not significant sources of pollutants; or remove categories of allowable non-storm water discharges listed above, based upon a finding that the discharges are a significant source of pollutants.

Santa Ana Region Specific Elements

- Emergency water flows (i.e., flows necessary for the protection of life and property) do not require BMPs and need not be prohibited. However, appropriate BMPs must be considered where practicable when not interfering with emergency public health and safety issues;
- When allowable non-Urban Runoff discharges are identified as a significant source of pollutants to the Waters of the U.S., a Permittee must either: prohibit the discharge category from entering its MS4 or ensure that Structural BMPs and Source Control BMPs are implemented to reduce or eliminate pollutants resulting from the discharge. The Permittees must evaluate the allowed non-Urban Runoff discharges, as listed above, and notify the Executive Officer if any are a significant source of pollutants to their MS4s.
- The discharge of pollutants, including trash and debris, from the MS4 to Receiving Waters must continue to be reduced to the MEP.
- MS4 discharges in the Santa Ana Region must be in compliance with the discharge prohibitions contained in Chapter 5 of the Santa Ana Region Basin Plan.
- Discharge of Urban Runoff from the MS4 cannot cause or contribute to a condition of nuisance as the term is defined in Section 13050 of the Water Code.

Santa Margarita Region Specific Elements

- Discharges into and from the MS4 in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance (as defined in CWC Section 13050), in Waters of the State are prohibited.

[28] Groundwater that meets the surface water quality objectives of the receiving water to which it will be discharged as specified in the Basin Plan.

- Discharges from the MS4s are subject to the Basin Plan Prohibitions cited in Attachment A to San Diego Region Board Order R9-2004-001 (Appendix C).
- Non-emergency fire fighting flows need not be prohibited.
- If emergency fire fighting activities are determined to be a significant source of pollutants to Waters of the United States, the Permittees will require the implementation of appropriate BMPs to reduce the discharge of pollutants to the MEP, when not interfering with the protection of health and property.
- Non-commercial vehicle washing, [e.g., residential car washing (excluding engine degreasing) and car washing fundraisers by non-profit organization] need not be prohibited;
- If allowable non-storm water discharge categories are found by the Permittees or the San Diego Regional Board to be a source of pollutants to Waters of the United States, the Permittees either prohibit the discharge category or develop and implement appropriate control measures under the DAMP to reduce pollutants to the MEP and submit the report to the San Diego Regional Board pursuant to Section III.A.1.d of Monitoring and Reporting Program No. R9-2004-001 (Appendix C).

4.2 Persistent Exceedances of Water Quality Standards

If the Permittees determine an exceedance of Water Quality Standards due to Urban Runoff discharges persists, notwithstanding the implementation of the DAMP and other requirements of the Third-term MS4 Permits, the Permittees will:

Santa Ana Region Specific

Implement the Procedure described in Section III.D of the Third-term SAR MS4 Permit.

Santa Margarita Region Specific

Implement the procedure described in Provision C.2 of the Third-term SMR MS4 Permit.

So long as the Permittees have complied with the procedures set forth above and are implementing the revised DAMP, the Permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same Water Quality Standards unless the Executive Officer determines it is necessary to develop additional BMPs and provides written notice to the Permittees of this determination.

4.3 Detection and Elimination of Illicit Connections

The Permittees have programs in place to identify and eliminate illicit connections. Some of the Permittees conduct this aspect of their MS4 Permit compliance program as a part of the routine maintenance of their MS4 facilities. The Permittees have also surveyed their MS4 facilities to identify illicit connections. In the mid-1990s, reconnaissance surveys were conducted to identify illicit and illegal discharges to the MS4. The reconnaissance surveys were limited to underground storm drains of 36-inch diameter or larger and open channels and most Permittees utilized video taping. Each undocumented connection to the MS4 was traced to its origin. Although 200 undocumented connections to the underground MS4 facilities were found, none of the connections were determined to be illegal

connections with regard to the MS4 NPDES program. As underground facilities are difficult to access and the Permittees inspect the construction of new underground MS4 facilities to verify that no illicit connections are being made, it has been determined that additional inspections of the underground MS4 facilities are not warranted. However, inspections of open channel facilities to identify illicit connections are conducted as an element of routine facility maintenance. Illicit connections identified during these surveys are documented and removed where necessary in order to comply with the MS4 Permit requirements.

The Permittees actively seek to eliminate and prohibit illicit connections and illegal discharges to the MS4. In addition, the Permittees implement and improve routine inspection and monitoring and reporting programs for their MS4. If routine inspections or dry weather monitoring indicate illicit connections or illegal discharges, they are investigated and eliminated or permitted[29] as soon as possible, but no later than sixty (60) calendar days of receipt of notice by Permittee staff or from a third party. However, illicit discharges that are a serious threat to public health or the environment are eliminated immediately.

Santa Margarita Region Specific Element

The SMR Permittees implement a program to actively seek and eliminate illicit discharges and connections to their respective MS4s as described in the Individual SWMPs. Each SMR Permittee maintains a labeled map of their entire MS4 and the associated drainage areas. The SMR Permittees review their MS4 map on an annual basis and update their maps, as needed. Each SMR Permittee implements an Illicit Discharge Monitoring Program, which is described in their Individual SWMP. The Illicit Discharge Monitoring Programs include numeric criteria that are used to determine when laboratory analytical results indicate that a follow-up investigation is warranted.

4.4 ILLEGAL DISCHARGES RESPONSE AND REPORTING

The Permittees have programs in place to respond to illegal discharges. Predominantly, illegal discharges are reported by the public or by Permittee field personnel. Appropriate Permittee field personnel are trained to identify potential illicit connections and illegal discharges during the course of their normal duties. Illicit connections and illegal discharges may also be determined from complaint calls from the public. For example, the District currently operates, on behalf of the Permittees, a centralized 24-hour hotline (1-800-506-2556) that may be used by the public to, among other things, report illegal dumping from urban areas into public streets, the MS4 and other waterbodies. These calls can be received in English or Spanish and are routed to the appropriate Permittee departments or contacts. The Permittees also implement wet and dry weather monitoring programs that may indicate the presence of illicit connections or illegal discharges.

To assist in response to complaint calls, and as part of the area-wide program on behalf of the Permittees, the District continues to provide financial support to the County's Hazardous Materials Emergency Response Team to ensure that hazardous materials from spills or illegal dumping have minimal impact on

[29] Unauthorized non-storm water discharges to surface waters and a MS4 must be permitted through the applicable Regional Board.

MS4s and receiving waters. Each Permittee also has code enforcement or other trained staff who are assigned the responsibility to respond to illegal discharges or illicit connections. In addition, as a proactive deterrent to potential illegal discharges, the District, on behalf of the Permittees, also provides funding to support the County Department of Environmental Health's Household Hazardous Waste collection program. This facilitates the proper management and disposal of used oil, toxic materials and other household hazardous wastes.

Response

When put on notice by staff or a third party of a potential illicit connection or illegal discharge that is not being responded to by another responsible agency (e.g., other Permittee, sewering agency, fire department, etc.), the Permittee shall immediately determine if it is a threat to human health or the environment. Any sewage spill over 1,000 gallons or that could impact water contact recreation, any spill that could impact wildlife, any hazardous material spill where residents or evacuated, any spill of reportable quantities of hazardous waste (as defined by 40 CFR 117 and 40 CFR 302), or any other spill reportable to the OES is classified as a threat to human health or the environment. Based on the Permittee's initial assessment, the Permittee with jurisdiction over the affected MS4 facility will take the following actions:

Illicit Connections and Illegal Discharges that are Threats to Human Health and the Environment

- Follow reporting procedures specified below.
- Immediately investigate and remediate the situation and/or coordinate with the appropriate response agencies to remediate the situation
- Lead or coordinate with other agencies regarding appropriate enforcement against the discharger per the guidelines of Section 3.4.

Non-Threatening Illicit Connections and Illegal Discharges

Permittees meet the following minimum guidelines when responding to reports of non-threatening illegal discharges:

- If the reported incident is outside of a Permittee's jurisdiction, referral to the appropriate agency and/or the respective Regional Board will be made within two (2) business days;
- Permittees respond to reports of illicit connections or illegal discharges within their jurisdiction within ten (10) business days;
- Inspections performed in response to a report are documented appropriately; and
- When appropriate, samples of illegal discharges are collected.

Reporting

The Permittees with jurisdiction over the portion of the MS4 affected by the illegal discharge, upon being notified, shall immediately investigate the circumstances of potential illegal discharges and/or illicit connections to their MS4 to determine if the potential discharge is a threat to human health or the

environment as defined above. Based upon their assessment and as specified below, the Permittees report all discharges that endanger human health or the environment:

1. By phone to the Office of Emergency Services (the "OES") at (800-852-7550) and to the Executive Officer [Santa Ana: (951) 782-3238; San Diego: (619) 467-2952]. Alternatively, the report to the Executive Officer may be provided by e-mail at sw@waterboards.ca.gov
2. At a minimum, any sewage spill above 1,000 gallons or that could impact water contact recreation, any oil spill that could impact wildlife, any hazardous material spill where residents are evacuated, any spill of reportable quantities of hazardous waste (as defined in 40CFR 117 and 40 CFR 302), or any other spill or discharge that is reportable to the OES (collectively, an "Emergency Situation") is reported within twenty-four (24) hours of the Permittee(s) becoming aware of the circumstances.
3. All other spill incidents, including any unauthorized discharges that are not reportable to the OES are reported to the Regional Board via each Permittees Annual Report.

4.5 Enforcement for Illicit Connections and Illegal Discharges

Investigations are performed by each Permittee in response to reports of illicit connections or illegal discharges received from the public, Permittee staff or other agencies within their jurisdictions. The sources of these discharges may include residential, commercial, industrial and construction activities and other sources. As described in Section 3.4, the Co-Permittee's have adopted ordinances prohibiting such discharges and established programs to enforce them.

Construction site inspectors, industrial and commercial facility inspectors, and other Permittee departments, including fire and wastewater inspectors, will report potential illicit connections and illegal discharges discovered during the course of existing routine inspections to the appropriate Regional Board if they are perceived to be in violation of the General Permits. In addition, although construction site and industrial/commercial site violations may be enforced initially through local storm water and erosion control ordinances, referrals are made to the Regional Board if compliance is not achieved. In all cases, the notification of potential non-compliance should be routed through the Permittee's storm water compliance coordinator before notifying Regional Board staff.

4.6 Litter Control

The Permittees implement control measures to reduce and/or to eliminate the discharge of pollutants, including trash and debris, from the MS4 to the Receiving Waters. In the SAR, these control measures are reported in the Annual Report. Typical litter control activities may include public education, street sweeping, code enforcement activities targeted at illegal dumping, watershed cleanup events and/or other activities implemented by the Permittees collectively or individually.

4.7 Sanitary Wastes

The Executive Officer of the Santa Ana Regional Board requested the local sewering agencies to take the lead in the development of a unified response to sewage spills that may have an impact on Receiving Water quality. This procedure includes notification of all sewage spills from private laterals and failing

septic systems into the MS4 and coordination of sewage spill prevention, containment and response activities though appropriate departments, programs and agencies. The District collaborated with the local sewering agencies in the development of this procedure, a copy of which is included as Appendix I. However, the response procedure is implemented in both the SAR and the SMR. The Permittees provide local sanitation districts 24-hour access to the MS4s to address sewage spills. The Permittees work cooperatively with the local sewering agencies to determine and control the impact of infiltration from leaking sanitary sewer systems on Urban Runoff quality.

The County Health Department regulates septic tanks and portable toilets under Ordinance No. 712. This ordinance requires sanitary waste haulers to inform residential septic tank pumping customers in writing of:

- The number of compartments within the system to be pumped;
- An assessment of tank condition as to necessity for pumping chambers, in addition to the primary chamber. For routine maintenance, all compartments of a septic tank should be made available for pumping of liquid and solids;
- The number of compartments actually pumped;
- The number of gallons removed;
- The pH value of the load.

In cooperation with the County Health Department, the Permittees have identified procedures to control septic system failures to prevent impacts on Urban Runoff quality and continue to follow procedures established by the State Health Department to address such failures. The County also implements regulations adopted by the State Board pursuant to California Water Code Section 13290-13291.7 through a memorandum of understanding with the Regional Board. The design review of septic systems is performed by Memorandums of Understanding with the Regional Boards. Statewide standards for construction are being developed by the State Board, in conjunction with other stakeholders, under the provisions of AB 885 of 2000. It is expected that the final regulations implementing AB885 will include provisions for ongoing, regular monitoring of some or all septic systems.

In addition, Ordinance No. 650 establishes the construction requirements for septic systems, and, in conjunction with the California Health and Safety Code sections 5411 and 5461 establishes the authority and responsibility of the Department of Environmental Health (DEH) to investigate system failures. Primarily a complaint driven process, the Department investigates all suspected incidents of improper discharge. Staff use a variety of enforcement tools including citation, criminal prosecution and summary abatement to mitigate discharges from septic system failures.

The overwhelming majority of septic system failures are confined to the property and are effectively abated, providing minimal impact to the MS4. In cases where there are clustered failures or violations indicating a previously unknown or deteriorating geological condition, DEH has and will continue to provide additional investigations to identify the geological condition and its extent. Where necessary for the ongoing control of on-site waste generation DEH provides support to efforts to bring sewers to the community.

The above process is being applied to Quail Valley, from which septic failures are implicated in pathogenic, nitrogen and phosphorus contamination to Canyon Lake. DEH has conducted a sanitary survey of the Quail Valley area and is working with the local sewering agencies and the Santa Ana Regional Board to evaluate the provision of sewers. DEH is also drafting revisions to Ordinance No. 650 to provide additional controls to mitigate these failures.

Further, the Permittees have added the base of operations for portable toilet suppliers to their industrial/commercial inspection lists and prioritized them according to their threat to water quality.

Santa Margarita Region Specific Element

The SMR Permittees do not operate sanitary sewer systems nor do they have any authority over the design, operation or maintenance of these systems. In their Individual SWMP, each SMR Permittee describes their program element that addresses the prevention, response procedures, containment, and cleanup of sewage spills into the MS4 and the prevention of contamination of surface waters, groundwaters, and soil by sanitary waste to the MEP. In developing their program element, the SMR Permittees considered the following actions:

- Development and implementation of a procedure to be notified of all sewage spills from private laterals and failing septic systems into the MS4.
- Coordination of sewage spill prevention, containment, and response activities through appropriate departments, programs, and agencies to ensure protection of Receiving Waters.
- Conducting municipal activities such as street repair and tree planting in a manner that minimizes damage to sewer lines and blockage of sewer lines by tree roots.
- Identifying priority areas for sewage spills within their jurisdiction.
- Educating the public on actions they can take to prevent sewage spills.

4.8 WASTE COLLECTION PROGRAMS

4.8.1 Household Hazardous Waste (HHW) Collection and Anti-freeze, Batteries, Oil, and Latex Paint (ABOP) Collection Programs

The Permittees participate in the HHW and ABOP collection programs in conjunction with the Riverside County Department of Environmental Health (DEH). The DEH has conducted the collections of HHW and ABOP materials since 1993 to discourage illegal disposal and to assist residents in properly disposing potentially hazardous or toxic materials.

At least two mobile HHW collection events are held at sites in the SAR and two within the SMR and at additional sites countywide. Collection events are scheduled periodically on weekends from 9:00 AM until 2:00 PM. The District also supports five permanent HHW/ABOP collection sites. Two of these sites are in the SAR, one is in the SMR, and two are in the Whitewater Region. The sites are open Saturdays from 9:00 AM until 2:00 PM with the exception of holiday weekends. Mobile and permanent site locations may vary over time. Details, site locations, maps and schedules of operation for both the

HHW and ABOP collection events are available on the DEH web site at http://www.rivcoeh.org/hhhw.htm or by calling (800) 506-2555 or (951) 358-5256.

Examples of wastes that are accepted at HHW collection events include the following items:

- Kitchen - Aerosol cans, aluminum cleaner with acid, ammonia-based cleaner, furniture polish, oven cleaner.
- Bathroom - Household batteries, flea powder, kerosene/lamp oil, lighter fluid, nail polish remover, toilet/tub/tile cleaner.
- Garage - Antifreeze, auto batteries, transmission & brake fluid, carburetor cleaner, gasoline, diesel fuel, motor oil, engine de-greaser.
- Gardening - Fertilizer, fungicide, insecticides/pesticides, weed killer/herbicides, slug and snail poison.
- Workshop - Chlorine bleach, pool/spa chemicals, lighter fluid, paint stripper with solvent, paint thinner/turpentine, photographic chemicals, varnish, wood preservative, caulking material, latex & oil based paints.

No wastes from businesses or non-profit facilities or activities are accepted. Examples of wastes that are not accepted at HHW collection events include the following items:

- explosives/ammunition;
- 30 or 55 gallon drums;
- radioactive materials;
- appliances;
- tires:
- televisions or computer monitors (CRTs): and
- medical waste except syringes and hypodermic needles (sharps) in an acceptable container.

Along with materials collected at HHW and ABOP sites, CRTs can be taken to County landfills for recycling. Used motor oil for recycling may be taken to drop off at certified collection centers throughout Riverside County in addition to the ABOP sites.

4.8.2 Conditionally Exempt Small Quantity Generator (CESQG)

The CESQG Program is a hazardous waste pick-up disposal service for eligible businesses/non-profit organizations in Riverside County. This program provides an affordable way to legally dispose of limited quantities of hazardous waste.

Businesses that generate 27 gallons or 220 pounds of hazardous waste or 2.2 pounds of extremely hazardous waste per month can participate in the CESQG program. Businesses are required to use a licensed hazardous waste hauler to manifest and transport their waste. The most common participants in the CESQG program are painters, print shops, auto shops, builders, churches, schools, non-profit groups

and property managers. An appointment for pickup of hazardous waste or further information on the CESQG program can be obtained by calling 1-800-952-5566.

5.0 PERMITTEE FACILITIES AND ACTIVITIES

5.1 PLANNING PERMITTEE PROJECTS

The requirement for managing the quality and quantity of storm water runoff applies to Permittee projects meeting the definition of New Development or Significant Redevelopment[30] in the SAR or Priority Development Project[31] in the SMR. Although the Permittees do not plan, design, or construct most of the project categories defined as New Development or Priority Development per se, some Permittee projects may have similar functions or characteristics, or may conduct similar activities after construction is completed. For example, a corporation yard may include a vehicle and equipment maintenance facility, which is very similar to an automotive repair shop. Other examples are a civic center or library that is very similar in its characteristics to that of a commercial office building, and a senior citizens center or a jail may have a cafeteria, which is similar to a restaurant. In the SMR region certain road improvement projects would also be classified as Development Projects[32]. However, the SAR Third-Term MS4 Permit does not consider road improvements as Development Projects[33].

The process for planning, design, approval, and construction oversight of Permittee projects differs from the process of planning and permitting for private sector development projects. For example, typically private sector Development Projects[34] are regulated through a process of a development plan approval (i.e., conditions of approval); building or grading permit applications, and permit conditions. In comparison, Permittee projects may undergo design review by the contracting agency of the municipality; be issued permits or similar administrative authorizations; and are then regulated through the enforcement of contract terms and approved plans and specifications.

Each Permittee will incorporate the development of a project-specific WQMP into the process of planning, designing, and preparing construction plans and specifications for their public Development Projects[35] or provide an equivalent approach. Other public projects comply with Section 6.4.4 of the DAMP. Typically, the Permittee's design/engineering department or the design architect/engineer contractor would prepare a project-specific WQMP for a Permittee project. However, a discussion of funding will not be required in a Permittee's project-specific WQMP, as funding of the long-term operation and maintenance will be the responsibility of the Permittee owning and operating the public project once construction is completed. Also, where applicable, the operation and maintenance procedures for the Treatment Control BMPs included in a Permittee's project-specific WQMP will be incorporated into a municipal facility Pollution Prevention Plan (see DAMP Section 5.3.2 and Appendix J). For Permittee projects, upon completion of construction when contract close-out occurs the responsibility for implementation, operation, and maintenance of BMPs will transfer from the contractor

[30] As defined in Section VIII.B.1 of the Third-term SAR MS4 Permit.
[31] As defined in section F.2.b.1 of the SMR MS4 Permit.
[32] "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.
[33] Ibid.
[34] Ibid.
[35] Ibid.

to the appropriate Permittee department and become part of the Permittee Facilities and Activities Program (DAMP Section 5.3).

Each Permittee has developed and implemented policies and procedures to ensure that the planning and design of its projects reflect these requirements.

5.2 PERMITTEE CONSTRUCTION ACTIVITIES

The Permittees conduct construction projects in compliance with the latest version of the General Permit-Construction or the San Jacinto Watershed Construction Activity Permit, as applicable. Projects one acre or larger or which are part of a construction project one acre or larger must comply with these Construction Activity Permits.

Santa Ana Specific Elements

Permittee construction projects must comply with the General Permit-Construction, or the General Permit for Storm Water Discharges Associated with Construction Activity from Small Linear Underground/Overhead Projects[36], as applicable. However, they are conducted under authority of the Third-term SAR MS4 Permit. Prior to commencement of construction activities in the SAR, the Permittees notify the Executive Officer of the proposed construction project by submitting a Notice of Intent (NOI), which is provided in Attachment 5 of the Third-term SAR MS4 Permit. The NOI submittal fee is waived for the Permittee construction activities. If the Permittee construction site is within the San Jacinto watershed, the terms and conditions of the San Jacinto Watershed Construction Activities Permit apply, with the exception of the requirement for the Regional Board to review and approve the site-specific SWPPP. The Permittees give advance notice to the Executive Officer of planned changes in the construction activity that may result in non-compliance with the latest version of the Construction Activity Permits, as applicable. Upon completion of the construction project, the Permittees notify the Executive Officer of the completion of the project by submitting a Notice of Termination (NOT), which is also provided in Attachment 5 of the Third-term SAR MS4 Permit.

Santa Margarita Specific Elements

In the SMR, Permittee construction projects must comply with the General Permit-Construction or the General Permit for Storm Water Discharges Associated with Construction Activity from Small Linear Underground/Overhead Projects in the same manner as private construction projects. Additionally, the Standard Notes for Plans specified in Section 6.4.7.1 of the DAMP are minimum BMPs for Permittee construction projects.

Prior to the commencement of construction activities, the Permittees (or their contractor) develop and implement a Storm Water Pollution Prevention Plan (SWPPP) and a monitoring and reporting program that is site-specific for each construction project. As an aspect of routine construction oversight, Permittee staff will verify compliance with the applicable General Permit, if any, as well as conformance with plans or specifications and local ordinance. The SWPPP is kept at the construction site and is made

[36] SWRCB Order No. 2003-0007-DWQ; NPDES General Permit No. CAS000005.

available to the public and/or Regional Board staff upon request. Additionally, upon request, the Permittees will provide the Regional Board staff with a copy of the site-specific SWPPP. Emergency public works projects required to protect public health and safety are not required to prepare a SWPPP, nor are they required to file a NOI or provide advance notice to the Executive Officer of planned changes that may result in non-compliance with the Construction Activity Permits.

The SWPPP and the monitoring and reporting program prepared and implemented for a Permittee's construction project is consistent with the requirements of the latest version of the General Permit-Construction, as applicable for the size and location of the site.

5.3 OPERATION AND MAINTENANCE OF PERMITTEE FACILITIES

5.3.1 MS4 Maintenance

The Permittees developed maintenance schedules for the structural control and treatment control BMPs and the MS4, are implementing those maintenance schedules and report on the BMP and MS4 maintenance activities annually. These maintenance schedules address clean-out schedules and frequencies for the Permittees open channels, catch basins, retention/detention basins, and wetlands created for Urban Runoff treatment. Wastes and materials removed are disposed of per applicable laws and appropriate BMPs, as described in Section 5.3.2, are deployed to minimize impacts to the Receiving Waters to the MEP.

Santa Margarita Specific Elements

In the SMR, the maintenance activities implemented by each Permittee include, at a minimum, the following:

a) Inspection of all of the Permittee's catch basins and storm drain inlets at least annually between May 1 and September 30. If accumulated waste is visible, the catch basin, or storm drain inlet, is cleaned out. Additional cleaning is conducted as necessary;

b) Anthropogenic litter is removed from the Permittee' open channels at least annually between May 1 and September 30, with additional removal as necessary;

5.3.2 Other Municipal Facilities and Activities

The 1996 SAR MS4 Permit required the Permittees develop a Municipal Facilities Strategy to identify BMPs for activities conducted at Permittee facilities. The 1996 SAR MS4 Permit also identified the municipal activities for which the Permittees were required to select BMPs to reduce the potential for storm water pollution. These municipal facilities and activities included street sweeping, catch basin cleaning, maintenance yards, vehicle and equipment maintenance areas, waste transfer stations, corporation and storage yards, parks and recreational facilities, landscape and swimming pool maintenance activities, MS4 maintenance activities, and the application of pesticides. The Municipal Facilities Strategy is incorporated into this section of the DAMP.

As part of the development of the Municipal Facilities Strategy, the Permittees identified the types of municipal facilities they operate. During this process, the types of municipal facilities and the activities conducted at those facilities were identified as having the potential to contribute pollutants to Urban

Runoff as shown in Tables 5-1a and 5-1b. Table 5-2a lists the types and numbers of municipal facilities operated by the Permittees in the SAR. Table 5-2b lists the types and numbers of municipal facilities operated by the Permittees in the SMR. Antifreeze, battery, oil, and paint collection centers (ABOPs) were not identified as facilities of concern in the SAR as they are otherwise regulated under the Resource Conservation and Recovery Act (RCRA). Permittee facilities such as wastewater treatment plants, airports, and landfills have coverage under the General Permit-Industrial or under an individual NPDES permit. ABOPs and those facilities identified as covered under the General Permit-Industrial are listed in the SMR MS4 Permit and are included in Table 5-1b.

No waste transfer stations were identified as being operated by the Permittees and facilities that consisted of only administrative buildings and parking areas were not identified to be of concern regarding Urban Runoff pollution. Identification of the potential pollutants at each Permittee's municipal facilities was necessary in order to select appropriate candidate BMPs to reduce pollutants in Urban Runoff to the MEP. In addition, the Permittees were surveyed to identify the potential pollutants of concern typically associated with the activities performed at or based from the identified facilities of concern. Table 5-3 identifies pollutants of concern that may be associated with activities conducted at or based from Permittees' municipal facilities.

During the development of the facility specific strategies, the Permittees identified existing non-storm water discharges and characterized the discharges with respect to frequency, volume, flow, and duration. The Permittees eliminated or permitted such discharges. A template facility Pollution Prevention Plan for Permittee facilities, including an annual inspection form, was developed and is provided in Appendix J. Facility-specific Pollution Prevention Plans based on this template, or similar templates, have been prepared for each of the facilities and activities listed in Table 5.2. These Pollution Prevention Plans are maintained and updated by the Permittees annually. Re-inspections and corrective actions are taken where deficiencies are found. The inspection reports, and documentation of resulting corrective actions, are kept for five years and are incorporated into the Pollution Prevention Plans.

Based on the facilities, associated activities and the pollutants of concern identified, a list of potential source control BMPs was developed by the Permittees. This list utilizes the BMP designations used in the 2003 California Stormwater Best Management Practice Handbooks[37] (Industrial and Municipal Handbooks). The list of potential source control BMPs includes:

Industrial Handbook References

- SC-10 Non-Storm Water Discharges
- SC-11 Spill Prevention, Control and Cleanup
- SC-20 Vehicle and Equipment Fueling
- SC-21 Vehicle and Equipment Cleaning
- SC-22 Vehicle and Equipment Repair
- SC-30 Outdoor Loading /Unloading of Materials

[37] California Stormwater Quality Association. January 2003. http://www.cabmphandbooks.com/ or CASQA, P.O. Box 2105, Menlo Park, California, 94026-2105.

- SC-31 Outdoor Liquid Container Storage
- SC-33 Outdoor Storage of Raw Materials
- SC-34 Waste Handling and Disposal
- SC-35 Safer Alternative Products
- SC-40 Contaminated or Erodible Areas
- SC-41 Building & Grounds Maintenance
- SC-42 Building Repair and Construction
- SC-43 Parking/Storage Area Maintenance
- SC-44 Drainage System Maintenance

Municipal Handbook References

- SC-10 Non-Storm Water Discharges
- SC-11 Spill Prevention, Control and Cleanup
- SC-20 Vehicle and Equipment Fueling
- SC-21 Vehicle and Equipment Cleaning
- SC-22 Vehicle and Equipment Repair
- SC-30 Outdoor Loading/Unloading
- SC-31 Outdoor Container Storage
- SC-32 Outdoor Equipment Maintenance
- SC-33 Outdoor Storage of Raw Materials
- SC-34 Waste Handling and Disposal
- SC-41 Building and Grounds Maintenance
- SC-43 Parking/Storage Area Maintenance
- SC-60 Housekeeping Practices
- SC-61 Safer Alternative Products
- SC-70 Road and Street Maintenance
- SC-71 Plaza and Sidewalk Cleaning
- SC-72 Fountains & Pools Maintenance
- SC-73 Landscape Maintenance
- SC-74 Drainage System Maintenance
- SC-75 Waste Handling and Disposal
- SC-76 Water and Sewer Utility Maintenance

This list is not intended to be all-inclusive. However, the BMPs listed are both effective and widely accepted. Permittees are encouraged to consult other sources of BMP information and consider implementation of additional methods and measures as appropriate. These BMPs are incorporated into the facility-specific Pollution Prevention Plans, as appropriate. A matrix identifying potential BMPs that

may be appropriate to implement for the municipal facilities and their associated activities is presented in Table 5-4. Fact sheets describing each of the source control BMPs can be viewed or downloaded from http://www.cabmphandbooks.com/.

Santa Margarita Region Specific Element

The SMR MS4 Permit requires the Permittees to prepare an inventory of the municipal facilities and activities listed in Tables 5-1a and 5-1b. The BMPs identified in Table 5-4 are minimum BMPs for these facilities in the SMR and are incorporated into the facility Pollution Prevention Plans. However, for Permittee facilities and/or activities tributary to CWA Section 303(d) impaired water bodies that generate pollutants for which the water body is impaired, additional specific BMPs to target that pollutant are implemented as necessary.

The Third-Term SMR MS4 Permit also requires the implementation of specific BMPs to manage the application, storage, and disposal of pesticides, herbicides, and fertilizers as associated with their municipal facilities and activities. At a minimum, the SMR Permittees:

1) Ensure that municipal applicators and distributors have appropriate training, permits, and certifications;
2) Utilize integrated pest management measures that rely on non-chemical solutions, to the extent practicable;
3) Incorporate native vegetation into facility landscaping;
4) Develop schedules for irrigation and chemical application; and
5) Collect and properly dispose unused pesticides, herbicides, and fertilizers.

These BMPs are addressed in the fact sheets for the following BMPs, which are included in Section 5.3.2 and identified as minimum BMPs:

- SC-35/SC-61, Safer Alternative Products
- SC-41, Building & Grounds Maintenance
- SC-60, Housekeeping Practices
- SC-73, Landscape Maintenance

5.4 FIRE BMPS

In coordination with the Riverside County Fire Agencies, the Permittees developed a list of appropriate BMPs to be implemented to reduce pollutants from fire training activities, fire hydrant/sprinkler testing or flushing and BMPs feasible for emergency fire fighting flows. These BMPs and the strategy for providing training and updating the list of BMPs are described in Appendix K.

5.5 TRAINING FOR MUNICIPAL MAINTENANCE EMPLOYEES

Staff involved in implementing a Permittee's municipal maintenance program receive annual training on the following topics:

- Requirements of the local storm water ordinances;
- Requirements of the Third-term MS4 Permits and DAMP;
- Municipal BMPs as described in Section 5.3.2 of the DAMP;
- Fertilizer and Pesticide Management
- Municipal Facilities Pollution Prevention Plan
- Other applicable pollution control measures.
- Requirements of EPA approved TMDLs.

In addition, staff responsible for restricted use pesticide application are trained and certified under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) requirements and the California Food and Agriculture Code. The Permittees sponsor training twice a year for municipal maintenance staff. Permittee staff may also attend training sponsored by third parties (for example, California Stormwater Quality Association) in lieu of Permittee-sponsored training. The Permittees individually maintain a log of trained staff and report training in the Annual Reports.

Table 5-1a. Municipal Facilities and Activities

Type of Municipal Facility	Activities of Concern Conducted
Corporate Yards[1]	Loading, unloading, handling, and storage of animal wastes, anti-freeze, asphalt, batteries, chemicals, concrete, diesel wastes, emulsions, fertilizer, fuel, green wastes, hazardous materials, new and used oil, paint products, pesticides, scrap metal, solvents, trash and debris, and wash water
	Filling of aboveground and underground storage tanks (ASTs and USTs) with fuels
	Dispensing of fuels to vehicles, equipment, and portable fuel containers
	Vehicle and equipment parking and storage
	Vehicle, equipment, and material washing and steam cleaning
	Leak and spill cleanup
	Landscape, garden, and general maintenance and cleaning
Warehouses	Loading, unloading, handling, and storage of materials
	Landscape, garden, and general maintenance and cleaning
Fire and Police Stations	Loading, unloading, handling, and storage of antifreeze, chemicals, new and used oil, scrap metal, and trash and debris
	Filling of ASTs and USTs with fuels
	Dispensing fuel
	Vehicle and equipment maintenance
	Vehicle and equipment parking and storage
	Vehicle washing and steam cleaning
	Leak and spill cleanup
	Landscape, garden and general maintenance and cleaning
Hazardous Materials Storage Facilities[2]	Loading, unloading, handling, and storage of potentially hazardous materials
	Leak and spill cleanup
Animal Shelters	Loading, unloading, handling, and storage of animal wastes for off-site recycling, chemicals, and fuel
	Vehicle, equipment, and material washing
	Leak and spill cleanup
	Landscape, garden, and general maintenance and cleaning
Swimming Pools	Storage and use of chemicals, including chlorine
	Filter maintenance and backwashing
	Landscape, garden, and general maintenance and cleaning
Water Treatment Facilities	Loading, unloading, handling, and storage of materials
	Filling of ASTs and USTs with fuels
	Vehicle washing and steam cleaning
	Leak and spill cleanup
	Landscape, garden, and general maintenance and cleaning

1 Corporation yards include equipment, transit maintenance, public works, fleet maintenance, civic centers, and parks and recreation equipment yards.

2 Includes household hazardous waste collection facilities

Table 5-1b. Additional Municipal Facilities and Activities in Santa Margarita Region Inventory

Type of Municipal Facility	Activities of Concern Conducted
Roads, streets, highways and parking facilities	Leak and spill cleanup
	Stripping
	Sawcutting
	Sealing
Flood management projects, flood control devices and drainage facilities and associated maintenance activities	Leak and spill cleanup
	Vegetation control
Active or closed municipal/ sanitary landfills	Vehicle and equipment parking and storage
	Vehicle and equipment maintenance
	Leak and spill cleanup
POTWs and sanitary sewage collection facilities	Loading, unloading, handling and storage of materials
	Filling of ASTs and USTs with fuels
	Vehicle washing and steam cleaning
	Landscape, garden and general maintenance and cleanup
Sites for disposing and treating sewage sludge	Sewage sludge application
Municipal airfields	Leak and spill cleanup
	Filling of ASTs and USTs with fuels.
	Landscape, garden and general maintenance and cleaning
	Vehicle and equipment parking and storage
Parks and recreational facilities, including golf courses	Leak and spill cleanup
	Filling of ASTs and USTs with fuels
	Landscape, garden and general maintenance and cleaning
Cemeteries	Landscape, garden and general maintenance and cleaning
Other landscaped areas	Landscape, garden and general maintenance and cleaning
Facilities and activities tributary to a 303(d) listed water body or ESA	Where pollutants are generated for which the water body is impaired or which discharge directly to an Environmentally Sensitive Areas (ESAs).
Other facilities and activities	Facilities and activities that Permittee determines may contribute a significant pollutant load to the MS4

Table 5-2a. Santa Ana Region Permittees Municipal Facilities Matrix[1]

Permittee	Corporate Yards	Parks & Recreation Facilities	Warehouses	Fire Stations	Police Stations	Hazardous Materials Storage Facilities	Animal Shelters	Swimming Pools	Potable Water Treatment Facilities
District	1								
Riverside County	19		1	60		5	3		
Beaumont	2				1			1	
Calimesa	1								
Canyon Lake[2]									
Corona	1	2	1	7	1	1	1	2	3
Hemet	2			3	1				
Lake Elsinore	1								
Moreno Valley	1						1		
Murrieta	1	19		3	1			1	
Norco	1			2			1	1	
Perris	1								
Riverside	1			13	2	10		8	
San Jacinto	1				1			1	

1 This matrix does not include Permittee facilities having coverage under individual NPDES permits or the General Permit for Storm Water Discharges Associated with Industrial Activity.

2 The City of Canyon Lake does not own nor operate any municipal facilities.

Table 5-2b. Santa Margarita Region Permittees Municipal Facilities Matrix[1]

Permittee	Corporate Yards	Parking Lots & Structures	Parks & Recreation Facilities	Swimming Pools	Airfields	Fire Stations	Police Stations	Closed Landfills	Solid Waste Transfer Facilities	HHW Collection Facility
District	1									
Riverside County	3	8	3		1	11	1	1	1	1
Murrieta	1		34	1		3	1			
Temecula	1	3	35	3		2				

1 The SMR Permittees do not own or operate facilities in the following facility categories identified in the Third-term MS4 Permit: golf courses; cemeteries; warehouses; hazardous materials storage facilities; animal shelters; potable water treatment facilities; sanitary sewer collection systems; wastewater treatment facilities; land application sites; sites for treatment or disposal of sewage sludge; active landfills; uncontrolled sanitary landfills; incinerators; or hazardous waste treatment, disposal, and recovery facilities

Table 5-3. Potential Pollutants of Concern

Potential Pollutants	Material Loading, Unloading, Handling, or Storage	Filling of ASTs & USTs	Dispensing Fuel	Vehicle & Equipment Maintenance	Vehicle & Equipment Parking and Storage	Vehicle & Equipment Material Washing & Steam Cleaning	Leak & Spill Cleanup	Landscape, Garden, and General Maintenance & Cleaning
Animal Wastes	X							
Anti-freeze	X			X	X		X	
Asphalt	X							
Acid	X			X				
Chemicals	X			X	X		X	
Concrete	X						X	
Diesel Wastes	X			X			X	
Emulsions	X						X	
Fertilizer	X						X	
Fuel		X	X	X			X	
Green Wastes	X							X
Hazardous Materials	X			X	X		X	X
Herbicides	X						X	X
New/Used Oil	X			X			X	
Oil and Grease Spills	X			X	X	X	X	
Paint Products	X						X	X
Pesticides	X						X	X
Scrap Metal	X			X				
Solvents	X			X			X	
Trash and Debris	X							X
Wash Waters						X		

Table 5-4. Potential Source Control BMPs for Municipal Facilities and Activities

Activities	BMP References from Industrial Handbook															BMP References from Municipal Handbook																					
	SC-10	SC-11	SC-20	SC-21	SC-22	SC-30	SC-31	SC-32	SC-33	SC-34	SC-35	SC-40	SC-41	SC-42	SC-43	SC-44	SC-10	SC-11	SC-20	SC-21	SC-22	SC-30	SC-31	SC-32	SC-33	SC-34	SC-35	SC-41	SC-43	SC-60	SC-61	SC-70	SC-71	SC-72	SC-73	SC-74	SC-75	SC-76
Material Loading/Unloading/Handling/ Storage						X	X	X	X									X				X	X		X												
Waste Handling and Disposal	X							X		X							X									X			X							X	
Filling of ASTs/USTs			X															X	X																		
Dispensing Fuel			X															X	X																		
Vehicle/Equipment Maintenance/Repair					X						X							X			X			X													
Vehicle/Equipment Parking and Storage																																					
Vehicle and Equipment Cleaning	X			X				X			X						X			X										X						
Leak and Spill Cleanup	X	X					X	X									X	X												X						
Construction														X																							
Landscaping, Garden, and General Maintenance and Cleaning	X										X	X	X	X	X	X	X											X	X	X	X	X	X	X	X	X		X

6.0 DEVELOPMENT PLANNING

6.1 INTRODUCTION

With the adoption of the Third-term MS4 Permits, the Permittees were required to modify the DAMP, including revisions to meet requirements related to the planning and permitting of Development Projects[38] within their jurisdictions and to ensure that pollutant loads from development projects have been reduced to the MEP. This program element links a Co-Permittee's General Plan, environmental review process, and development approval and permitting processes to the later phases of detailed design, construction and operation. A General Plan specifies policies that guide development. The environmental review process examines potential impacts from proposed development with respect to the General Plan policies and many environmental issues, including water quality, and includes consideration of mitigation measures to reduce any identified significant impacts.

The development approval and permitting processes carries forth project-specific requirements in the form of conditions of approval, design specifications, tracking, inspection, and enforcement actions. These three "front-end" planning processes must be coordinated and linked to the later phases of design, construction and operation for development projects to ensure Urban Runoff quality protection features are planned, designed and evaluated in accordance with the Permittees' goals for protection of Receiving Waters. Figure 6-1 is a generalized flow diagram that depicts the relationship of the General Plan, environmental review process and development planning and permit process, as well as the project design, construction, and operation phases.

6.2 GENERAL PLAN

6.2.1 Background

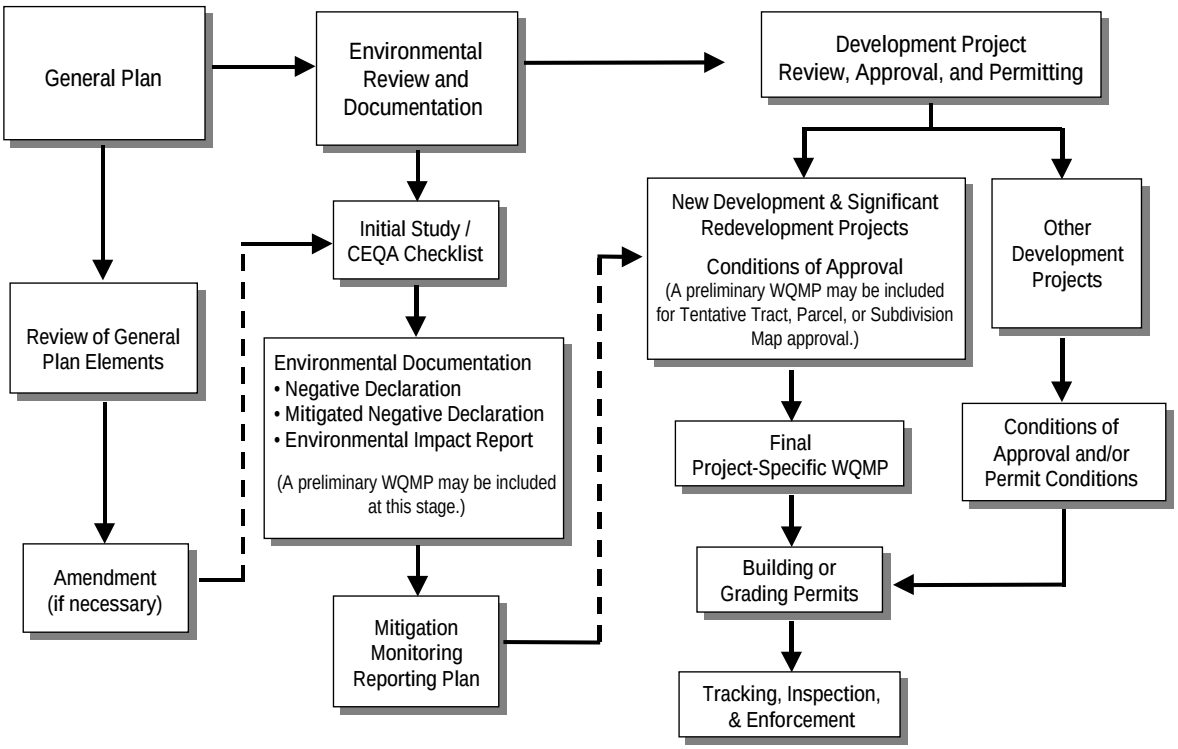
The General Plan consists of seven mandatory elements and any optional element that a city or county chooses to adopt. The mandatory elements include:

- Land Use
- Open Space
- Circulation and Infrastructure
- Conservation
- Housing
- Safety
- Noise

Any optional elements that are adopted by a city or the County, such as Public Facilities, have equal authority as the mandatory elements. Each city council and the County Board of Supervisors adopt zoning, subdivision and other ordinances to regulate land uses and to carry out the policies in the General Plan. The General Plan is also used to guide decision-makers in determining whether or not land use proposals are consistent with the applicable goals, objectives, and policies.

[38] "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

Figure 6-1. Relationship between General Plan, Environmental Review Process and Development Permit Process



A General Plan Amendment is a request to revise some component of a city's or the County's General Plan. This can include addition, deletion or modification of goals and policies; modifications to the land use map or other diagrams; or other changes. A General Plan Amendment is a legislative act. Under State law, General Plan Amendments are allowed four times per year (California Government Code §65358(b)). Most General Plan Amendments are carried out in conjunction with a specific development proposal, although a city, the County, or any other agency or party can request an amendment without a specific development proposal in mind. A General Plan Amendment must be approved by the planning commission and city council or at the County level by the Board of Supervisors at public hearings. In approving a General Plan Amendment, the approving body must assess the policy implications of the proposed General Plan Amendment and the impact and compatibility of the proposed General Plan Amendment on the long-term goals and desires of a city or the County and its citizens. In evaluating a proposed General Plan Amendment, the approving body must look at the "global" impacts of the proposed amendment. Although a General Plan Amendment may be proposed in conjunction with a specific development proposal, the amendment proposed might have policy and/or land use impacts far beyond any given project or property.

Various elements of a city's or the County's General Plan may contain existing goals and policies that can be related to watershed protection and the management of Urban Runoff. For example, the quantity and quality of Urban Runoff may be controlled by the type, location, and density of development. Such controls may be established through policies commonly found in the Land Use and Open Space Elements of the General Plan (e.g., development policies, development location guidelines, landscaping guidelines, open space policies, policies on preservation of and integration with natural features).

Development of local streets and roads (regulated under the policies of the Circulation and Infrastructure Element and to some extent, the Safety Element) results in increased impervious surfaces and accumulation of storm water pollutants from vehicles. The Public Facilities Element provides management policies for construction, operation and maintenance of various public facilities including flood control channels and storm drains, which convey Urban Runoff. The Conservation Element contains policies on water conservation that can be linked to water quality protection through efficient use of irrigation systems to prevent runoff.

6.2.2 General Plan Review and Amendment

The Permittees recognize the importance of addressing watershed protection and the management of Urban Runoff in the land development process. Therefore, watershed protection principles and objectives for managing Urban Runoff for land development are reflected in the appropriate policies, goals, and objectives of each Co-Permittee's General Plan. The Permittees have reviewed their General Plans to ensure that the following principles and policies are properly considered:

Santa Ana Region Specific Elements

- Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; minimize impacts from Urban Runoff on the biological integrity of natural drainage systems and water bodies;
- Minimize changes in hydrology and pollutant loading; require incorporation of source control and structural BMPs to mitigate the projected increases in pollutant loads and flows; ensure that post-construction runoff rates and velocities from a site do not result in significant adverse impact on downstream erosion and stream habitat; limit the quantity of Urban Runoff directed to impermeable surfaces and the MS4s; and maximize the percentage of permeable surfaces to allow more percolation of Urban Runoff into the ground;
- Preserve wetlands, riparian corridors, and buffer zones; establish reasonable limits on the clearing of vegetation from the project site;
- Encourage the use of BMPs to manage Urban Runoff quality and quantity;
- Provide for appropriate permanent measures to reduce pollutant loads in Urban Runoff from the development site; and
- Establish development guidelines for areas particularly susceptible to erosion and sediment loss.

Santa Margarita Region Specific Elements

- Minimize the amount of impervious surfaces and directly connected impervious surfaces areas of development and, where feasible, slow runoff and maximize on-site infiltration of runoff.
- Implement pollution prevention methods supplemented by source control and treatment control BMPs. Use small collection strategies located at, or as close as possible to, the source

(i.e., the point where water initially meets the ground) to minimize the transport of urban runoff and pollutants offsite and into an MS4.

- Preserve, and where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones. Encourage land acquisition of such areas.
- Limited disturbance of natural water bodies and natural drainage systems caused by development including roads, highways, and bridges.
- Prior to making land use decisions, utilize methods available to estimate increases in pollutant loads and flows resulting from projected future development. Require incorporation of appropriate BMPs to mitigate the projected increases in pollutant loads and flows.
- Avoid development of areas that are particularly susceptible to erosion and sediment loss; or establish development guidance that identifies these areas and protects them from erosion and sediment loss.
- Reduce pollutants associated with vehicles and increasing traffic resulting from development.
- Post-development runoff from a site shall not contain pollutant loads that cause or contribute to an exceedance of receiving water quality objectives and which have not been reduced to the MEP.

It should be noted that in some cases, these concepts are better addressed in other areas of Development Planning such as in the CEQA process or through the conditioning of a project in the development review process. Further, many Permittees within the SAR and SMR have incorporated the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP) into their general plan. The MSHCP addresses many of the concepts identified in the Third-term MS4 Permits. The MSHCP requires the conservation of over 500,000 acres of new land within the County, including significant lands adjacent to or encompassing receiving waters such as the San Jacinto River, Santa Ana River, and Santa Margarita River, including tributaries. The plan transfers approximately 1,000,000 acres of existing conservation lands to a specified land conservancy. The MSHCP also finds that participating Permittee's existing general plans, zoning ordinances and polices include measures capable of implementing the following planning concepts consistent with the Third-term MS4 Permit considerations identified above:

- Measures to ensure that the quality and quantity of runoff discharged to MSHCP conservation areas is not altered in any adverse way when compared to existing drainage conditions;
- Measures to avoid discharge of untreated surface runoff from developed and paved areas into MSHCP conservation areas; and
- Measures to require storm water systems to be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within MSHCP conservation areas.

When reviewing the General Plan in the future, special attention will be given to how the elements address the potential impacts of Urban Runoff on Receiving Waters. The Co-Permittees will keep in mind the following questions during this review, which may trigger the need for specific Urban Runoff

pollution protection policies in various elements of their General Plan either as new policies and objectives or amended text to existing policies and objectives:

- Are there sensitive Receiving Waters in or downstream of the jurisdiction?
- Are there existing or proposed Total Maximum Daily Loads (TMDLs) or other such regulations pertaining to receiving waters within the jurisdiction?
- Are major Development Projects expected?
- Are major new infrastructure projects anticipated (e.g., roads, sewer, flood control, storm drains)?
- Is Urban Runoff affecting recreational use of water bodies within the jurisdiction?

If a Co-Permittee initially determines that elements of their General Plan do not adequately consider watershed protection principles and objectives for managing Urban Runoff, the need for and the extent of revisions to the General Plan should be coordinated with its legal counsel. If a Co-Permittee, in consultation with its legal counsel, determines that it needs to amend elements of its General Plan to incorporate watershed and Urban Runoff management policies, goals or objectives, the Co-Permittee will develop a work plan and schedule for the General Plan amendment(s). In revising elements of the General Plan, associated maps will be revised, as necessary, to reflect location-specific watershed protection/Urban Runoff quality management policies, and eliminate conflicts among land use districts, permitted land uses, and Urban Runoff-specific goals and policies. For further reference, the Co-Permittees may review the sample general plan amendment text and sample urban runoff water quality general plan element outlined in Model Urban Runoff Program, A How to Guide for Developing Urban Runoff Programs for Small Municipalities (City of Monterey, et al, July 1998). This document can be viewed or downloaded at http://www.waterboards.ca.gov/stormwtr/murp.html.

Should a Co-Permittee amend elements of its General Plan, the Co-Permittee will provide the draft General Plan amendments to the Regional Board for comment.

6.3 CEQA Environmental Review Process

6.3.1 CEQA Initial Study Process

The Third-term MS4 Permits required the Permittees to review their CEQA processes to ensure that Urban Runoff issues are properly considered and addressed. Where necessary, the processes were revised to consider and mitigate impacts to Urban Runoff quality and Receiving Waters.

Santa Ana Region Specific Elements

The Third-term SAR MS4 Permit (Section VIII.8.A.8) identifies the following potential impacts to be considered during the CEQA process:

- Potential impact that construction of the project may have on Urban Runoff.
- Potential impact that operation of the project may have on Urban Runoff.

- Potential for discharge of pollutants in Urban Runoff from areas identified within the project site to be used for material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.
- Potential for pollutants in Urban Runoff discharged from a project site that may affect the beneficial uses of the Receiving Waters.
- Potential for significant changes in the flow velocity or volume of Urban Runoff from a project site that would result in environmental harm.
- Potential for significant increases in erosion of a project site or surrounding areas.
- Potential for the project to discharge Pollutants identified as impairing downstream Receiving Waters.

Santa Margarita Region Specific Elements

The Third-term SMR MS4 Permit (Section F.3) identifies the following potential impacts to be considered during the CEQA process:

- Could the proposed project result in increased impervious surfaces and associated increased runoff? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical storm water pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen demanding substances, and trash).
- Could the proposed project result in significant alteration of receiving water quality during or following construction?
- Could the proposed project result in increased impervious surfaces and associated increased runoff?
- Could the proposed project create significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes?
- Could the proposed project result in increased erosion downstream?
- Is the project tributary to an already impaired water body, as listed on the CWA section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired?
- Is the project tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions?
- Could the proposed project have a potentially significant environmental impact on surface water quality of marine, fresh, or wetland waters?
- Could the proposed project have a potentially significant adverse impact on groundwater quality?
- Could the proposed project cause or contribute to an exceedance of applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?

- Can the project impact aquatic, wetland, or riparian habitat?

These Urban Runoff pollution issues have been considered in the Initial Study process (project application form and checklist) and in the preparation and reviews of Environmental Impact Reports (EIRs) discussed in the subsections that follow.

6.3.1.1 Project Application Form

The current project application form contained in Appendix L (CEQA Guidelines, State of California Office of Planning and Research, February 2001) is used by nearly all the Permittees in their environmental review process. The CEQA Guidelines identify specific questions about the project to help environmental planners assess the potential for significant environmental impacts. However, there are no specific project description questions that help characterize the potential for impacts associated with Urban Runoff. For this reason, each Permittee has reviewed their existing project application forms and, as necessary, has revised their application form to include line items for:

- Expected percent change in pervious surface area of the site; and
- Submittal of preliminary project-specific Water Quality Management Plan (WQMP), if applicable, (along with required submittal of other development plans).

6.3.1.2 Initial Study Checklist

The current Initial Study Checklist contained in Appendix M [CEQA Guidelines, State of California Office of Planning and Research, February 2001] is also used by nearly all Permittees in their environmental review process. This Initial Study Checklist contains the following considerations under the environmental impact category "Hydrology and Water Quality (Section VIII)":

Would the project:

a) Violate any water quality standards or waste discharge requirements?

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

f) Otherwise substantially degrade water quality?

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

j) Inundation by seiche, tsunami, or mudflow?

The Permittees have concluded that considerations of potential impacts associated with Urban Runoff are generally covered in questions a) through f) of the Initial Study Checklist (Appendix M), but with less specificity than the questions provided in the Third-term MS4 Permits. To ensure that issues related to Urban Runoff are thoroughly considered in completing the Initial Study Checklist, the Permittees have reviewed the Initial Study checklist and made appropriate changes. The Permittees have considered adding the following question to the Hazardous and Hazardous Materials Section (Section VII) or Utilities and Service Systems Section (Section XVI) of the Initial Study Checklist used for projects within their jurisdiction:

> "Would the project include new or retrofitted storm water Treatment Control BMPs, (e.g., water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g., increased vectors and odors)?"

Further, to promote the consideration of the various impacts related to Urban Runoff, the Permittees may provide the list of permit considerations specified in the Third-term SAR (Section VIII.A.8) and SMR (Section F.3) MS4 Permits to:

- Environmental planning staff for use in preparing and reviewing CEQA documents for internal city/county projects and when reviewing CEQA documents prepared by the private sector
- Consultants and other members of the private sector for use in preparing CEQA documents
- Project applicants during the CEQA preliminary review process
- Participants attending training related to the requirements of the Third-term MS4 Permit, the DAMP, or the WQMP.

6.3.2 Environmental Review Guidance for CEQA Initial Studies and CEQA Document Preparation and Review

In evaluating the questions in Section VIII, Hydrology and Water Quality, of the CEQA Initial Study Checklist (or any additional questions added in response to provisions of the Third-term MS4 Permits), the Permittees may use the guidance provided in Appendix N of this DAMP. The guidance provided in Appendix N may also be used for the preparation or review of CEQA documents including Negative Declarations, Mitigated Negative Declarations and EIRs.

6.4 DEVELOPMENT PROJECT REVIEW, APPROVAL, AND PERMITTING

6.4.1 Project Review, Approval, and Permitting Process Overview

Development Projects[39] submitted to the SAR Co-Permittees after December 31, 2004 are conditioned to require the preparation, review, and approval of a project-specific WQMP. Development Projects under the jurisdiction of the SMR Co-Permittees that do not have Conditions of Approval or Tentative Tract, Subdivision, or Parcel map approval by July 13, 2005 are conditioned to require the preparation, review, and approval of a project-specific WQMP. Other development projects are required to incorporate site design, source control, and/or treatment control BMPs through Co-Permittee Conditions of Approval or permit conditions. This section describes the processes for incorporating post-construction (permanent) BMPs into the development project review, approval, and permitting process. This section also describes modifications to conditions of approval and plan check processes to assure consistency with the requirements of the Third-term MS4 Permits.

6.4.2 Identifying Development Projects Requiring a Project-Specific WQMP

To ensure that Development Projects are identified as early in the planning process as possible, the Permittees utilize a checklist to document the determination as to whether a project requires a project-specific WQMP or not. Example checklists that may be used by the Co-Permittees for this purpose are shown in Figure 6-2a and Figure 6-2b, the SAR and the SMR, respectively.

6.4.3 Development Projects

For Development Projects[40] submitted to the SAR Co-Permittees after December 31, 2004 are conditioned to the project applicant is required to prepare a project-specific WQMP that is in conformance with the Riverside County Water Quality Management Plan for Urban Runoff (a copy of which is included as Appendix O), prior to issuance of the first permit. For Development Projects under the jurisdiction of the SMR Co-Permittees that do not have Conditions of Approval or Tentative Tract, Subdivision, or Parcel map approval by July 13, 2005, the project applicant is required to prepare a project-specific WQMP that is in conformance with the Riverside County Water Quality Management Plan for Urban Runoff, prior to issuance of the first permit. At its discretion, a Co-Permittee may require a project-specific WQMP for projects prior to these implementation dates. The primary objective of the Riverside County Water Quality Management Plan for Urban Runoff, through application of Site Design, Source Control, and Treatment Control BMPs on a project-specific and/or sub-regional or regional basis, is to ensure that the land use approval and permitting process of each Co-Permittee will minimize the impact of Urban Runoff.

Since some Development Projects are subject to discretionary approval during the planning phase (land use entitlement) and ministerial approval for subsequent grading or building permits, project applicants may be required to submit a preliminary project-specific WQMP for discretionary project approval (land use entitlement). The level of detail in a preliminary project-specific WQMP submitted during the land

[39] "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

[40] Ibid.

use entitlement process depends upon the level of detail known about the overall project design at the time project approval is sought. Project applicants are required to submit for Co-Permittee review and approval, a final project-specific WQMP that is in substantial conformance with the preliminary project-specific WQMP prior to the issuance of any building or grading permit.

Figure 6-2a. Checklist – Projects Requiring Project-Specific WQMPs within the Santa Ana Region

Checklist for Identifying Projects Requiring a Project-Specific WQMP within the Santa Ana Region

Project File No.	
Project Name:	
Project Location:	
Project Description	

Proposed Project Consists of or Includes:	Yes	No
Significant Redevelopment: The addition or creation of 5,000 square feet or more of impervious surface on an existing developed site. This includes, but is not limited to, construction of additional buildings and/or structures, extension of the existing footprint of a building, construction of impervious or compacted soil parking lots. Does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, the original purpose of the constructed facility or emergency actions required to protect public health and safety		
Residential development of 10 dwelling units or more, including single family and multi-family dwelling units, condominiums, or apartments.		
Industrial and commercial development where the land area[1] represented by the proposed map or permit is 100,000 square feet or more, including, but not limited to, non-residential developments such as hospitals, educational institutions, recreational facilities, mini-malls, hotels, office buildings, warehouses, light industrial, and heavy industrial facilities.		
Automotive repair shops [Standard Industrial Classification (SIC) codes[2] 5013, 7532, 7533, 7534, 7537, 7538, and 7539].		
Restaurants (SIC code 5812) where the project site is 5,000 square feet or more.		
Hillside development that creates 10,000 square feet or more, of impervious surface(s) including developments in areas with known erosive soil conditions or where natural slope is 25 percent or more.		
Developments creating 2,500 square feet or more of impervious surface that is adjacent to (within 200 feet) or discharging directly into areas designated in the Basin Plan[3] as waters supporting habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law are rare, threatened, or endangered species (denoted in the Basin Plan as the "RARE" beneficial use) or waterbodies listed on the CWA Section 303(d) list of Impaired Waterbodies[4]. "Discharging directly to" means Urban Runoff from subject Development or Redevelopment site flows directly into aforementioned waterbodies. Urban Runoff is considered a direct discharge unless it first flows through a) a municipal separate storm sewer system (MS4) that has been formally accepted by and is under control and operation of a municipal entity; b) a separate conveyance system where there is co-mingling of flows with off-site sources; or c) a tributary or segment of a water body that is not designated with "RARE" beneficial uses nor listed on the 303(d) list before reaching the water body or segment designated as RARE or 303(d) listed..		
Parking lots of 5,000 square feet or more of impervious surface exposed to Urban Runoff, where "parking lot" is defined as a site or facility for the temporary storage of motor vehicles.		

1 Land area is based on acreage disturbed.

2 Descriptions of SIC codes can be found at http://www.osha.gov/pls/imis/sicsearch.html.

3 The Basin Plan for the Santa Ana River Basin, which has beneficial uses for Receiving Waters listed in Chapter 3, can be viewed or downloaded from www.swrcb.ca.gov/rwqcb8/pdf/R8BPlan.pdf.

4 The most recent CWA Section 303(d) list can be found at www.swrcb.ca.gov/tmdl/303d_lists.html.

DETERMINATION: Circle appropriate determination.

Any question answered "YES" ⟶ Project requires a project-specific WQMP.

All questions are answered "NO" ⟶ Project requires incorporation of Site Design BMPs and Source Control BMPs imposed through Conditions of Approval or permit conditions.

Figure 6-2b. Checklist – Projects Requiring Project-Specific WQMPs within the Santa Margarita Region

Checklist for Identifying Projects Requiring a Project-Specific SUSMP within the Santa Margarita Region

Project File No.	
Project Name:	
Project Location:	
Project Description	

Proposed Project Consists of or Includes:	Yes	No
Significant Redevelopment: The addition, creation, or replacement of at least 5,000 square feet of impervious surfaces on an already developed site of a project category or location as listed below in this table. This includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. [Note: Where redevelopment results in an increase of less than 50% of the impervious surfaces of a previously existing development, and the existing development was not subject to SUSMP requirements, the requirement for treatment control BMPs [MS4 Permit requirement F.2.b(3)]. applies only to the addition, and not to the entire development.]		
Housing subdivisions of 10 or more dwelling units. Includes single-family homes, multi-family homes, condominiums, and apartments.		
Commercial development greater than 100,000 square feet. Defined as any development on private land that is not for heavy industrial or residential uses where the land area for development is greater than 100,000 square feet. Includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.		
Automotive repair shops. Includes facilities characterized by any one of the following Standard Industrial Classification (SIC) codes[1]: 5013, 5014, 5541, 7532, 7533, 7534, 7536, 7537, 7538, or 7539.		
Restaurants. A facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for treatment control BMPs [MS4 Permit requirement F.2.b(3)] and peak flow management [MS4 Permit requirement F.2.b(2)(a)].		
All Hillside development greater than 5,000 square feet. Any development that creates greater than 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will include grading on any natural slope that is 25% or greater.		
Environmentally Sensitive Areas (ESAs)[2]. All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.		
Parking lots of 5,000 square feet or more. A land area or facility for the temporary parking or storage of motor vehicles used personally for business or commerce.		
Streets, roads, highways, and freeways. Includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.		
Retail Gasoline Outlets (RGOs). Includes RGOs that meet the following criteria: (a) 5,000 square feet or more, or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles.		

1 Descriptions of SIC codes can be found at http://www.osha.gov/pls/imis/sicsearch.html.

2 Areas "in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would easily be disturbed or degraded by human activities and developments. ESAs subject to urban runoff requirements include, but are not limited to: all CWA Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the Basin Plan; water bodies designated with a RARE beneficial use in the Basin Plan; areas within the Western Riverside County Multi-Species Habitat Conservation Plan area that contain rare or especially valuable plant or animal life or their habitat; and any other equivalent environmentally sensitive areas that the Permittees have identified. The Basin Plan for the San Diego Basin (beneficial uses listed in Chapter 2) can be viewed or downloaded from www.swrcb.ca.gov/rwqcb9/programs/basinplan.html. The most recent CWA Section 303(d) list can be found at www.swrcb.ca.gov/tmdl/303d_lists.html.

DETERMINATION: Circle appropriate determination.

Any question answered "YES" ⟶ Project requires a project-specific WQMP.

All questions are answered "NO" ⟶ Project requires incorporation of Site Design BMPs and Source Control BMPs imposed through Conditions of Approval or permit conditions.

6.4.4 Other Development Projects

The Co-Permittees require Other Development projects (projects that are not Development Projects) to incorporate Site Design BMPs and Source Control BMPs, as applicable and feasible, into project plans through conditions of approval or building/grading permit conditions. For Other Development projects that directly discharge Urban Runoff to Receiving Waters listed as impaired on the State Board's 303(d) List, project-specific and/or sub-regional or regional Treatment Control BMPs may be required on a case-by-case basis. A summary of the BMP requirements for Other Development projects is shown in Table 6-1. Brief descriptions of Site Design BMPs and Source Control BMPs are provided in Appendix O, the Riverside County Water Quality Management Plan for Urban Runoff, Sections 4.5.2.1 and 4.5.2.2, respectively.

Table 6-1. Summary of BMPs for Other Development Projects

<table>
<tr><th colspan="2">BMP Category</th><th>Applicable Projects</th></tr>
<tr><td colspan="2">Site Design BMPs
(See Appendix O, Section 4.5.1)</td><td>Required for all Other Development projects, to the extent applicable and feasible.</td></tr>
<tr><td rowspan="2">Source Control BMPs</td><td>Non-Structural BMPs
(See Appendix O, Section 4.5.2.1)</td><td>Required for all Other Development projects.
• Education/Training for Property Owners, Operators, Tenants, Occupants, or Employees
• Activity Restrictions
• Irrigation System and Landscape Maintenance
• Common Area Litter Control
• Street Sweeping Private Streets and Parking Lots
• Drainage Facility Inspection and Maintenance</td></tr>
<tr><td>Structural BMPs
(See Appendix O, Section 4.5.2.2)</td><td>Required for all Other Development projects that incorporate the target project features.
• MS4 Stenciling and Signage
• Landscape and Irrigation System Design
• Protection of Slopes and Channels
• Provide:
– Community Car Wash Racks
– Wash Water Controls for Food Preparation Areas
• Properly Design and Maintain:
– Fueling Areas
– Air/Water Supply Area Drainage
– Trash Storage Areas
– Loading Docks
– Maintenance Bays
– Vehicle and Equipment Wash Areas
– Outdoor Material Storage Areas
– Outdoor Work Areas or Processing Areas</td></tr>
<tr><td colspan="2">Treatment Control BMPs: Project-Specific, Regional, or Sub-Regional
(See Appendix O, Sections 4.5.3 and 5.0)</td><td>May be required on a case-by-case basis for Other Development projects that discharge Urban Runoff to Receiving Waters listed as impaired on the State Board's 303(d) List.</td></tr>
</table>

6.4.5 Conditions of Approval

The Permittees have reviewed and revised their standard conditions of approval to ensure that the standard conditions are not in conflict with any provisions of the Third-term MS4 Permits, the DAMP, the General Permit-Construction, the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity, the General Permit-Industrial, and adopted Total Maximum Daily Load allocations within their jurisdiction. For example, a condition requiring "sweeping or washing public access points within 30 minutes of dirt deposition" should be revised to specify that "washing" must include capture and proper disposal of all wash water.

To minimize the short-term and long-term impacts of Urban Runoff on Receiving Water quality from Development Projects and Other Development projects, Permittees have reviewed and will revise, or supplement their standard conditions of approval or building/grading permit conditions that may be used for projects to include the following conditions or the equivalent, as deemed appropriate:

- Prior to the issuance of any grading or building permits for projects that will result in soil disturbance of one or more acres of land, the applicant shall demonstrate that coverage has been obtained under California's General Permit for Storm Water Discharges Associated with Construction Activity (or the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity) by providing a copy of the Notice of Intent (NOI) submitted to the State Board (or the Santa Ana or San Diego Regional Boards) and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) number or other proof of filing.
- Projects that must comply with either the statewide General Permit for Storm Water Discharges Associated with Construction Activity or the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity shall prepare and implement a storm water pollution prevention plan (SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for review upon request.
- Prior to grading or building permit close-out and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall:
  - Demonstrate that all structural BMPs have been constructed and installed in conformance with approved plans and specifications; and
  - Demonstrate that applicant is prepared to implement all non-structural BMPs included in the conditions of approval or building/grading permit conditions.
- For industrial facilities subject to California's General Permit for Storm Water Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code, prior to grading or building permit close-out and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall demonstrate that coverage has been obtained by providing a copy of the Notice of Intent (NOI) submitted to the State Board and a copy of the notification of the issuance of a Waste Discharge Identification (WDID) Number or other proof of filing.

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Grading during the wet season should be limited and scheduled to coincide with seasonal dry weather periods to the extent feasible. Grading during the wet season should identify additional BMPs for rain events that may occur as necessary for compliance with the Third-term SMR MS4 Permit.

These and other conditions of approval applicable to Development Projects are provided in Section 2.2 of the Riverside County Water Quality Management Plan for Urban Runoff (Appendix O).

6.4.6 Review and Approval of Project-Specific WQMPs

Project-specific WQMPs may be submitted as "preliminary" during the discretionary or land use entitlement phase depending upon the level of detail known about the overall project design at the time project approval is sought. However, prior to issuance of grading or building permits, the project applicant must submit the final project-specific WQMP for review and approval by the Co-Permittee. The review and approval of a final project-specific WQMP is one of the last critical points at which a Permittee can impose conditions or standards that will minimize the impacts of Urban Runoff. To assist the Co-Permittees in conducting thorough and consistent reviews of project-specific WQMPs, the Co-Permittees utilize a WQMP Review Checklist. An example WQMP Review Checklist is included as Appendix P.

When reviewing project-specific WQMPs submitted for approval, Co-Permittees assess the potential project impacts on Receiving Waters and ensure that the project-specific WQMP adequately identifies such impacts, including all pollutants and hydrologic conditions of concern. The Co-Permittees examine the identified BMPs, as a whole, to ensure that they address the pollutants and conditions of concern identified within the project-specific WQMP. The project-specific WQMP is a project planning level document and as such is not expected to contain final BMP design drawings and details (these will be in the construction plans). However, the project-specific WQMP must identify and denote the location of selected structural BMPs, provide design parameters including hydraulic sizing of treatment BMPs and convey final design concepts. BMP fact sheets can be used in conjunction with project-specific design parameters and sizing to convey design intent. BMP fact sheets typically contain detailed descriptions of each BMP, applications, advantages/disadvantages, design criteria, design procedure, and inspection and maintenance requirements to ensure optimal performance of the BMPs

6.4.7 Plan Check: Issuance of Grading or Building Permits

6.4.7.1 Standard Notes for Plans

Prior to the issuance of a grading or building permit, Permittees require the applicant to include on the plans the following notes (or notes of substantially similar intent) that address pollution prevention to the MEP during the construction phase of a project on a year-round basis:

- Erosion control BMPs shall be implemented and maintained to minimize and/or prevent the entrainment of soil in runoff from disturbed soil areas on construction sites.

- Sediment control BMPs shall be implemented and maintained to prevent and/or minimize the transport of soil from the construction site.
- Stockpiles of soil shall be properly contained to eliminate or reduce sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.
- Appropriate BMPs for construction-related materials, wastes, spills or residues shall be implemented to eliminate or reduce transport from the site to streets, drainage facilities, or adjoining properties by wind or runoff.
- Runoff from equipment and vehicle washing shall be contained at construction sites and must not be discharged to receiving waters or the local storm drain system.
- All construction contractor and subcontractor personnel are to be made aware of the required best management practices and good housekeeping measures for the project site and any associated construction staging areas.
- At the end of each day of construction activity all construction debris and waste materials shall be collected and properly disposed in trash or recycle bins.
- Construction sites shall be maintained in such a condition that a storm does not carry wastes or pollutants off the site. Discharges other than storm water (non-storm water discharges) are prohibited, except as authorized by an individual NPDES permit, the statewide General Permit-Construction, or the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity. Potential pollutants include but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants, solvents, detergents, glues, lime, pesticides, herbicides, fertilizers, wood preservatives, and asbestos fibers, paint flakes or stucco fragments; fuels, oils, lubricants, and hydraulic, radiator or battery fluids; concrete and related cutting or curing residues; floatable wastes; wastes from engine/equipment steam cleaning or chemical degreasing; wastes from street cleaning; and super-chlorinated potable water from line flushing and testing. During construction, disposal of such materials should occur in a specified and controlled temporary area on-site physically separated from potential storm water runoff, with ultimate disposal in accordance with local, state and federal requirements.
- Discharging contaminated groundwater produced by dewatering groundwater that has infiltrated into the construction site is prohibited. Discharging of contaminated soils via surface erosion is also prohibited. Discharging non-contaminated groundwater produced by dewatering activities may require a National Pollutant Discharge Elimination System (NPDES) permit issued by the Santa Ana or San Diego Regional Board.
- Construction sites shall be managed to minimize the exposure time of disturbed soil areas through phasing and scheduling of grading to the extent feasible and the use of temporary and permanent soil stabilization.
- BMPs shall be maintained at all times. In addition, BMPs shall be inspected prior to predicted storm events and following storm events.

6.4.7.2 Plan Check for Development Projects

Construction plans submitted by the applicant for plan check must incorporate the structural BMPs identified in the approved final project-specific WQMP. Once a Development Project[41] reaches the plan check phase, the project applicant should have an approved final project-specific WQMP in accordance with Section 2.2 of the Riverside County Water Quality Management Plan for Urban Runoff (Appendix O).

To gain an understanding of the water quality issues and structural BMPs required, Co-Permittees review the relevant CEQA documentation (including the Mitigation Monitoring and Reporting Program) if applicable, the conditions of approval, and the project-specific WQMP as part of the plan check process. Construction plans are reviewed for consistency with the project-specific WQMP. If the selected BMPs were approved in concept during the land use entitlement process, the applicant is required to submit detailed construction plans showing locations and design details of all BMPs that are in substantial conformance with the preliminary approvals. The construction plans are reviewed to assure that the plans are consistent with the BMP design criteria and guidance provided in Appendix O, the Riverside County Water Quality Management Plan for Urban Runoff.

6.4.7.3 Plan Check for Other Development Projects

For Other Development projects (projects that do not qualify as Development Projects), applicants will typically submit a grading or building permit application with construction plans that incorporate the BMPs (Site Design and Source Control) required by the conditions of approval.

6.4.8 Permit Closeout, Certificates of Use, and Certificates of Occupancy

The end of the construction phase is typically accompanied by the close out of permits and issuance of certificates of use and/or occupancy. The Co-Permittees use this juncture to assure satisfactory completion of all requirements in a project-specific WQMP or the conditions of approval for Other Development projects by requiring the applicant to demonstrate, where applicable, that:

- All structural BMPs have been constructed and installed in conformance with approved plans and specifications;
- A mechanism or agreement acceptable to the Co-Permittee has been executed for the long-term funding and implementation, operation, maintenance, repair, and/or replacement of BMPs;
- The applicant is prepared to implement all non-structural BMPs;
- An adequate number of copies of the project-specific WQMP, if applicable, are available onsite; and
- Industrial facilities subject to California's General Permit for Storm Water Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code provide proof of coverage by providing a copy of the Notice of Intent (NOI) submitted to the State Board and/or a copy of the notification of the issuance of a Waste Discharge Identification (WDID) Number.

BMPs for Development Projects and Other Development projects cannot be considered effective unless a mechanism is in place to provide for long-term reliability, which is achieved through proper implementation, operation, and maintenance. Therefore, once construction of a project is complete, assurance is required for the long-term implementation, operation and maintenance of BMPs, and most particularly for Treatment Control BMPs.

The responsibility for implementation, operation, and maintenance of BMPs may be with a private entity or a public agency (for example, a Permittee) under various arrangements and with various funding sources. The responsibility to provide for the long-term implementation, operation, and maintenance of BMPs associated with Development Projects or Other Development projects may:

- Remain with a private entity (property owner, home owners association, etc.); or
- Be transferred to a public entity (e.g., a city, county, special district, etc.) through dedication of the property; or
- Be transferred to a public entity, or another private party through a contract.

Following satisfactory inspection, the Permittee may accept structural BMPs within public right-of-ways, and may accept structural BMPs on land dedicated to public ownership. Upon acceptance, responsibility for operation and maintenance will transfer from the developer or contractor to the appropriate entity, including the funding mechanism identified in the approved final project-specific WQMP for Development Projects or the conditions of approval or building/grading permit conditions for Other Development projects.

If a property owner or a private entity retains or assumes responsibility for implementation, operation, and maintenance of BMPs, the Permittee require an agreement that can take the form of:

- A Covenant and Agreement recorded with the County Recorder,
- A Home Owners Association or Property Owners Association Covenants, Codes, and Restrictions,
- The formation of, or annexation to, a maintenance district or assessment district, or
- Other instrument sufficient to guarantee long-term implementation, operation, and maintenance of BMPs.

Examples of requirements for typical maintenance mechanisms and a sample of a Covenant and Agreement are provided in Appendix O (Riverside County Water Quality Management Plan for Urban Runoff, Exhibits E and F, respectively).

[41] "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

6.5 TRAINING

6.5.1 Educational Program for Developers and Contractors

The Riverside County Water Quality Management Plan contains the legal, administrative, and technical information needed to acquaint developers and contractors with the requirements for post construction BMPs in Development Projects. It also provides information relevant and useful to Other Development projects. The Co-Permittees make the approved Riverside County Water Quality Management Plan for Urban Runoff available as part of the review process for project planning and permitting. The Permittees may also coordinate with the University Extension and other groups to provide training to the property owners, developers, builders, architectural and engineering firms, planning firms, etc.

6.5.2 Training Programs for Municipal Development Planning Staff

Co-Permittee staff responsible for implementing development planning requirements receive annual training regarding the following topics:

- Federal, state and local water quality laws and regulations applicable to development projects,
- The connection between land use decisions and short and long-term water quality impacts; and
- How impacts to receiving water quality resulting from development can be minimized via the WQMP process.
- TMDL requirements and appropriate post-construction BMPs to mitigate the impacts of development.

The Permittees have developed a PowerPoint presentation that can be provided to municipal development planning staff.

Co-Permittee staff responsible for conducting development planning may also attend other Permittee sponsored training, training sponsored by industry associations (e.g., Building Industry Association, American Society of Civil Engineers, etc.), the California Storm Water Quality Association, or training sponsored by other entities in lieu of Permittee sponsored training. The Permittees individually maintain a log of trained staff and type of training, and then include this information in the Annual Reports.

7.0 PRIVATE DEVELOPMENT CONSTRUCTION ACTIVITY

The initial construction site inspection program element was described in the Enforcement/Compliance Strategy (E/CS) as required by the 1996 SAR MS4 Permit. The construction site inspection program has been an effective element of the Riverside County DAMP. However, this program element has been revised to address the requirements of the Third-term MS4 Permits.

7.1 CONSTRUCTION SITE BMPS

The erosion control BMPs appropriate for use during construction are listed in Table 7-1 with cross references to the BMP designations used in the *2003 California Stormwater Best Management Practice Handbook, Construction*[42] and the Caltrans *Construction Site BMP Manual* (March 2003)[43]. Since BMP technology is constantly changing, the jurisdictional Permittee may consider other BMPs of equivalent or better performance on a case-by-case basis.

Santa Margarita Region Specific Elements

Each Permittee requires the use of a set of minimum BMPs that address pollution prevention by construction site owners, developers, contractors and other responsible parties, as appropriate, through standard notes that must appear on grading plans as described in Section 6.4.7.1 of the DAMP. Each Permittee also requires the implementation of additional controls as needed for construction sites tributary to CWA Section 303(d) listed water bodies impaired for sediment. In addition, the Permittees require construction sites discharging directly to receiving waters within Environmentally Sensitive Areas (ESAs) to implement additional controls as necessary to comply with the Third-term SMR MS4 Permit.

[42] California Stormwater Quality Association. January 2003. http://www.cabmphandbooks.com/ or CASQA, P.O. Box 2105, Menlo Park, California, 94026-2105.

[43] California Department of Transportation. March 2003. http://www.dot.ca.gov/hq/construc/stormwater/CSBMPM_303_Final.pdf

Table 7-1. Construction Site BMPs

BMP Name	California BMP Handbook – Construction	Caltrans Construction Site BMP Manual	Included in USEPA Construction Site Menu of BMPs
Stabilize Exposed Soils			
Chemical Stabilization (Soil Binders)	EC-5	SS-5	X
Polyacrylamide	EC-13		
Mulching			
Hydraulic Mulch	EC-3	SS-3	X
Straw Mulch	EC-6	SS-6	X
Wood Mulching	EC-8	SS-8	X
Permanent Seeding			X
Sodding			X
Soil Roughening			X
Temporary Seeding/Hydroseeding	EC-4	SS-4	
Protect Steep Slopes			
Earth Dikes/Drainage Swales/Lined Ditches	EC-9	SS-9	
Fiber Roll	SE-5	SC-5	
Geotextiles	EC-7	SS-7	X
Gradient Terraces			X
Soil Retention			X
Straw Bale Barrier	SE-9	SC-9	
Temporary Slope Drain	EC-11	SS-11	X
Protect Waterways			
Check Dams	SE-4	SC-4	X
Outlet Protection/Velocity Dissipation Devices	EC-10	SS-10	
Streambank Stabilization	EC-12	SS-12	
Temporary Stream Crossings	NS-4	NS-4	X
Vegetated Buffer			X
Phase Construction			
Construction Sequencing (Scheduling)	EC-1	SS-1	X
Dust Control	WE-1	WE-1	X
Preserve Site Condition			
Entrance/Outlet Tire Wash	TC-3	TC-3	
Preservation of Existing Vegetation	EC-2	SS-2	
Stabilized Construction Entrance	TC-1	TC-1	
Stabilized Construction Roadway	TC-2	TC-2	

7.2 INVENTORY DATABASE

Santa Ana Region Specific Elements

In conformance with Section IX.A.1 of the Third-term SAR MS4 Permit, each SAR Co-Permittee developed and maintains an inventory database (or databases) of construction sites 1-acre or larger for which they have issued a building or grading permit. Construction sites are included in the inventory regardless of whether the construction site is subject to the General Construction Activity Storm Water Permit or other individual construction storm water NPDES permits. In addition, New Development/Significant Redevelopment projects meeting the criteria defined in Section VIII.B.1 of the 2007 SAR MS4 Permit are also included in this database. These databases are updated with new projects added when the project is issued a building or grading permit or when the pre-construction meeting has occurred. Projects may be removed from the database when construction is completed and the project's building or grading permit is closed. At a minimum, the Co-Permittees' databases include the following project information:

- Facility/Project name,
- Facility/Project address,
- Tract number(s) or Assessor Parcel Number (APN),
- Watershed,
- Project type,
- Project priority,
- Number of inspections performed,
- Site size,
- WDID#,
- Grading Permit #,
- Other permits,
- Developer's information,
- Site contact information, and
- Enforcement status.

Santa Margarita Region Specific Elements

Annually, prior to the rainy season, each SMR Co-Permittee updates their inventory of construction sites within their jurisdiction regardless of site size or ownership.

7.3 CONSTRUCTION SITE INSPECTION

Santa Ana Region Specific Elements

Each construction site/project included in a Co-Permittee's inventory database is assigned a priority of High, Medium, or Low to reflect the potential for impairing Receiving Water quality. In order to standardize prioritization the Permittees developed a matrix for the relationship between priority ratings and Receiving Water pollution threat. This Construction Site Prioritization Matrix is presented in Table 7-2.

After each inspection, the priority assigned to the construction site/project is re-assessed based upon the prioritization matrix shown in Table 7-2 and the inspection frequency is determined. This information is used to update the construction site/project database. As shown in Table 7-2, the minimal inspection frequency is:

- Once every two weeks for construction sites designated as High priority.
- Once a month for construction sites designated as Medium priority.
- Once during the rainy season (October 1 through May 31) for construction sites designated as Low priority.
- Within two weeks for follow-up inspections related to non-compliance with the SAR Co-Permittee's storm water ordinance.

However, the MS4 Permit does not require the Co-Permittees to inspect construction sites already inspected by Regional Board staff. To facilitate this, Regional Board staff will post a list of construction sites/projects inspected on their website (http://www.waterboards.ca.gov/santaana/html/regional_ind_con_db.html/santaana/html/regional_ind_con_db.html) or make this information available to the Co-Permittees by other pre-arranged means.

Table 7-2. Construction Site Prioritization Matrix

Priority	Supporting Criteria [a]	Wet Season[b] Inspection Frequency
High	Project Size Sites that disturb an area greater than 50 acres (initial inventory) Project Location Sites that disturb an area greater than one(1) acre and are located adjacent to, within 200 feet, of an identified impaired water body within the Permit Area (initial inventory) Sites that disturb an area greater than one (1) acre and directly discharge to an identified water body within the Permit Area (initial inventory) Soil Erosion Potential Hillside sites that disturb an area greater than five acres History of Compliance Sites that disturb an area greater than one (1) acre with a low-range (0-50%) compliance with respective city/County NPDES site inspection/verification checklists	Once every two weeks
Medium	History of Compliance Sites that received repeated verbal notification of non-compliance with respective city/County NPDES site inspection/verification checklists	Once each month
Low	History of Compliance Sites that are in compliance with respective city/County NPDES site inspection/verification checklists Sites that disturb an area of one (1) acre or greater	Once

Notes:

[a] Prioritization factors listed in Third-term SAR MS4 Permit §IX.A.2 include soil erosion potential, project size, proximity and sensitivity to Receiving Waters, and history of compliance. §IX.A.3 of the Third-term SAR MS4 Permit describes the minimum inspection requirements, which are reflected in inspection checklists.

[b] Wet season: October 1st to May 31st

[c] Dry season: June 1st to September 30th

Santa Margarita Region Specific Elements

During the wet season, the Permittees inspect the following construction sites at least every two weeks:

1) All sites 50 acres or more in size and grading will occur during the wet season;
2) All sites 5 acres or more, and tributary to a CWA section 303(d) water body impaired for sediment or within or directly adjacent to or discharging directly to a receiving water within ESA; and
3) Other sites determined by the Permittee or the San Diego Regional Board as a significant threat to water quality. In evaluating threat to water quality, the following factors are considered: (1) soil erosion potential; (2) site slope; (3) project size and type; (4) sensitivity of receiving water bodies; (5) proximity to receiving water bodies; (6) non-storm water discharges; and (7) any other relevant factors.

However, any site meeting these criteria may be inspected on a monthly basis if the Permittee certifies in a written statement to the San Diego Regional Board that the Permittee has a record of construction site's WDID number documenting the site's coverage under the General Construction Permit, the Permittee has reviewed the construction site's SWPPP and finds it to be in compliance with local ordinances, permits and plans, and the Permittee finds that the SWPPP is being properly implemented on site.

The Permittees inspect all construction sites that do not meet these criteria but encompass 1 acre or more of soil disturbance at least three times during the wet season. Construction sites less than 1 acre in size are inspected on an as-needed basis. All construction sites are inspected as needed during the dry season.

Conducting Inspections

At a minimum, the following items are addressed during construction site inspections:

- For projects of one acre or more, verify that an NOI has been submitted to the State Board or to the Santa Ana Regional Board (projects in the San Jacinto watershed). Verification is typically made by reviewing a copy of the NOI Receipt letter from the State Board showing the Waste Discharge Identification (WDID) Number issued for the site.
- For projects of one acre or more, verify that a SWPPP is on-site.
- Confirm compliance with the Co-Permittee's storm water ordinance.
- Check for poorly managed authorized non-storm water discharges or evidence of unauthorized non-storm water discharges that may be potential illicit connections or illegal discharges to a MS4.

Some Co-Permittees have chosen to document this construction site inspection information on a separate form, while other Co-Permittees have chosen to incorporate this information into existing inspection forms. An example construction site inspection form is shown in Figure 7-1. Based on the inspection findings, the Permittees implement follow-up actions as necessary to comply with the requirements of the Third-term MS4 Permits.

7.4 ENFORCEMENT

If determined during a routine inspection or an inspection in response to a complaint that a site/project is non-compliant with the Co-Permittee's storm water or erosion control ordinance, the Co-Permittee begins enforcement procedures as described in Section 3.4.2 of the DAMP. As described in Section 3.4 (Legal Authority and Enforcement), the severity of the violation is based on various factors. After considering the various factors, the Co-Permittee determines the level of enforcement required consistent with the enforcement levels described in Table 3-3.

7.5 REGIONAL BOARD NOTIFICATION REQUIREMENTS

The Co-Permittees notify the respective Regional Board when construction site inspectors, other Co-Permittee staff, or third parties report observing potential non-compliance with the Construction Activity Permits of a non-Emergency Situation nature. Such notifications are made by telephone or email within 2 working days of receiving notice from its staff or a third party. Examples of non-compliance of a non-Emergency Situation nature are a site that cannot demonstrate coverage under the applicable Construction Activity Permit, a site that does not have a SWPPP available, or a site with BMPs that are not properly maintained. The Regional Board staff will then determine if an inspection and enforcement action for the Construction Activity Permit is appropriate. Upon providing notification to the Regional Board, no further action is taken by Co-Permittee staff with respect to enforcement of the Construction Activity Permits. However, the Co-Permittee continues with progressive enforcement of its ordinances and permits at the site as described in Section 3.4.2 of the DAMP. Notifications regarding Emergency Situations are described in Section 4.3.

Figure 7-1. Example Construction Site Inspection Form

Insert Co-Permittee logo here

Construction Activity Compliance Inspection Notice

Public Works Department and/or Division
Insert Co-Permittee address here, CA

			Date:
TRACT/PARCEL #:	WDID#:	WEATHER:	SITE INSPECTION PRIORITY LEVEL: ☐ HIGH ☐ MEDIUM ☐ LOW
APN:	GRADING PERMIT #:	SIZE/DISTURBED ACREAGE:	OFFICE USE: ☐--PAID ☐--INVOICE

SITE NAME AND ADDRESS:	PROPERTY OWNER AND MAILING ADDRESS (IF DIFFERENT):

CROSS STREETS:	INSPECTED BY:	PHONE #:	DATE FOR REINSPECTION:

FUTURE SITE USAGE: ☐ RESIDENTIAL ☐ INDUSTRIAL ☐ COMMERCIAL ☐ MIXED-USE	POST-CONSTRUCTION BMPs ON-SITE: ☐ YES ☐ NO NOTES-

NOTICE: The [Insert Co-Permittee Name] performs a construction site inspection to determine if the site is in compliance or not in compliance with the [Insert Co-Permittee Name] Stormwater Ordinance, local permits, regulations, and codes.

1. **PERMITS: (MS4 Permit Ref: Section IX.A.3.a)**
   - ☐ Copy of NOI located at the project site?
   - ☐ Copy of WDID located at the project site?
   - ☐ Copy of [Insert Co-Permittee Name] permit at project site?

2. STORM WATER POLLUTION PREVENTION PLAN (SWPPP): (MS4 Permit Ref: Section IX.A.3.b)
   - ☐ Copy of SWPPP located at the project site? If not, Regional Board must be notified.

3. BEST MANAGEMENT PRACTICES (BMPS):
   - ☐ BMPs installed in conformance with local permits and [Insert Co-Permittee Name] Stormwater Ordinance, i.e. perimeter controls, storm drain inlet protection, etc?
   - ☐ BMPs in place for the various subcontractor trades, i.e. PCC cleanout, material storage, waste storage, etc?
   - ☐ Project site BMPs effective?
   - ☐ Effective combination of erosion and sediment controls on site?

4. EROSION CONTROL:
   - ☐ No evidence of erosion present on manufactured and/or denuded slopes?
   - ☐ No evidence of rill or gully erosion present?
   - ☐ Erosion control BMPs installed in conformance with local permits and [Insert Co-Permittee Name] Stormwater Ordinance?

5. SEDIMENT CONTROL:
   - ☐ No evidence of sediment outside the permit area or present on the site in an area that requires protection?
   - ☐ No evidence of construction site sediment on City-maintained streets, downstream storm drains and/or drainage ways?
   - ☐ No evidence of "Track-out" observed on surface streets adjoining the project site?
   - ☐ Sediment controls installed and maintained in conformance with local permits and [Insert Co-Permittee Name] Stormwater Ordinance?

6. ILLEGAL/ILLICIT DISCHARGES:
   - ☐ No evidence that structural controls are breached or failed under storm events of minor intensity?
   - ☐ No evidence that active non-storm water discharges or potential illicit connections or illegal discharges to the streets or storm drains?

VIOLATIONS:	
☐ Verbal warning:	☐ Written warning: (attach copy)
☐ NOV: (attach copy)	☐ Stop Work: (attach copy)
☐ Other:	

ADDITIONAL:

RECEIVED BY:	NAME/SITE CONTACT (PRINT):	24-HOUR PHONE:
DATE:	VIOLATIONS: ☐ CORRECTED ☐ NOT CORRECTED	PAGE _____ OF _____
REGIONAL BOARD NOTFICIATION: ☐ YES ☐ NO	DATE: TIME:	CONTACT:

7.6 REPORTING REQUIREMENTS

For purposes of annual reporting, the Permittees developed the standardized spreadsheet shown in Figure 7-2 for listing construction sites within their jurisdiction and the associated inspection and enforcement information.

7.7 TRAINING REQUIREMENTS

Co-Permittee staff responsible for conducting construction site inspections receive annual training regarding the following topics:

- A summary of federal, state and local regulations (including the General Permit-Construction and the San Jacinto Watershed Construction Activities Permit, Third-Term MS4 Permits, the DAMP and the WQMP) that impact construction activities;
- The impacts of construction activities on water quality;
- Proper selection and maintenance of BMPs necessary to meet requirements of Permittee storm water ordinances and other local ordinances, resolutions and codes related to the protection of water quality;
- Local enforcement and compliance strategy/policy for construction sites;
- How to identify construction sites subject to the General Permit-Construction or the San Jacinto Watershed Construction Activities Permit and what actions to take if the appropriate permit has not been obtained by the construction site owner; and
- How to provide guidance to contractors on proper selection, implementation and maintenance of construction BMPs and compliance with the requirements of the Storm Water Ordinance during site inspections.
- TMDL requirements and appropriate BMPs to mitigate the impacts of construction activities.

This annual training for construction site inspectors is conducted prior to October 1, the start of the rainy season. The Permittees individually maintain a log of trained staff and report training in their annual reports.

Santa Ana Region Specific Elements

The Co-Permittees ensure that newly hired municipal staff or transferred municipal staff receive formal training within 6 months of beginning their inspection duties. When planning formal classroom training related to construction site inspectors, the Co-Permittees will notify and coordinate with Regional Board staff. Co-Permittee staff responsible for conducting construction site inspections may also attend training sponsored by industry associations (e.g., Building Industry Association, International Erosion Control Association, American Society of Civil Engineers, etc.), the California Storm Water Quality Association, or other entities in lieu of Permittee sponsored training.

Santa Margarita Region Specific Elements

Permittees are also required to implement a program to ensure that project applicants, contractors, developers, property owners and other responsible parties have an understanding of the topics identified above for Co-Permittee staff responsible for conducting construction site inspections. This is generally accomplished by the distribution of public education materials to responsible parties and by reviewing project site compliance deficiencies and necessary corrective actions with responsible parties during the inspection process. The Permittees may also coordinate with university extension programs and industry associations (e.g., Building Industry Association, International Erosion Control Association, American Society of Civil Engineers, etc.), the California Storm Water Quality Association, or other entities in lieu of Permittee sponsored training.

Figure 7-2. Standardized Spreadsheet for Co-Permittee Construction Site Inspections

PROJECT GENERAL INFORMATION												MUNICIPAL PERMITS See Note C.		DEVELOPER INFORMATION						SITE CONTACT INFORMATION		ENFORCEMENT STATUS See Note D.					
	Project Location															Mailing Address											
Facility Name (dba) See Note A.	Street Address	Cross Street	City	Zip	Tract Nos. or Assessor Parcel Nos. See Note B.	Watershed	Project Type	Project Priority	No. of Stormwater Inspections	Site Size	WDID No. (General Permit)	Grading Permit No.(s)	Other Permits Specify: Building, Encroachment, Right-of-Way, etc.	Name	Contact Name	Street Address	City	Zip	Phone Number	Name (24 Hour)	Phone Number (24 Hour)	Satisfactory	Verbal Warning	Written Warning	Notice of Violation	Stop Work Order	Referred to RWQCB

Notes:

A. Name of project, developer, or planning area. The facility name as used by Regional Boards can be obtained from the State Water Resources Control Board Construction General Permit database (Column titled "Facility_SiteName") or from a copy of the applicant's Notice of Intent.

B. Provide Tract Numbers or Assessor Parcel Nos. as appropriate to identify Facility (Project).

C. Enter the Municipal Permit Nos. as appropriate to identify Facility (Project).

D. Enter the number of each type of enforcement action for each Facility (Project).

8.0 INDUSTRIAL AND COMMERCIAL SOURCES

The initial industrial and commercial sources program element was described in the Enforcement/Compliance Strategy as required by the 1996 SAR MS4 Permit. The program included implementation of the Compliance Assistance Program (CAP), which made use of existing site County Department of Environmental Health inspections. As the responsible Certified Unified Program Agency (CUPA) in Riverside County, the County Department of Environmental Health was responsible for regularly inspecting all sites within the County that handle hazardous waste. There are approximately 5,500 facilities with hazardous materials permits, of which 2,300 are inspected annually. The remaining facilities are inspected at least every other year. The County Department of Environmental Health also inspects all food services restaurants (approximately 6,500 facilities) within the County at least annually. The Cities of Corona and Riverside also implemented a separate storm water inspection program as part of their Municipal Wastewater Pre-Treatment inspection program.

Under the CAP, County Department of Environmental Health inspectors added a storm water compliance survey to their regular inspection process. Completed surveys are forwarded to the appropriate Permittees for their records, review and further action, if necessary. The CAP and Municipal Wastewater Pre-Treatment industrial and commercial sources program has been an effective element of the DAMP.

This program element was revised to address the requirements of the Third-term MS4 Permits, including an expansion of the commercial businesses not covered by the CAP and Municipal Wastewater Pre-Treatment inspection programs. The expansion has required some Permittees to hire inspectors to address those facilities not currently covered by the CAP or the Municipal Wastewater Pre-Treatment Program. In addition, the Third-Term MS4 Permits required inventories/databases of facilities, prioritization of industrial and commercial sources relative to the potential to impact water quality, and specified inspection frequencies based upon facility priority. The revised industrial and commercial sources program continues to have both regional and local jurisdiction components. However, the Permittees will review the effectiveness of these programs annually and make additional program modifications as necessary.

8.1 INDUSTRIAL/COMMERCIAL FACILITY DATABASE

Each Co-Permittee has developed and maintains an inventory database (or databases) of industrial and commercial facilities within their respective jurisdictions. Facilities are included in these inventories regardless of whether the facility is subject to the General Industrial Activities Storm Water Permit, or other individual NPDES permits issued by the State or Regional Boards. Each Co-Permittee that presently has an existing local industrial inspection program (the cities of Corona and Riverside as to their respective POTW pre-treatment inspections and the County through the CAP) includes in their respective inventory information derived from existing compliance survey and inspection programs. Each Co-Permittee without an industrial/commercial facility inspection program includes in their inventory information from the CAP that is relevant to its jurisdiction and may include information derived from other agencies providing services within its jurisdiction, including, but not limited to, the appropriate Fire Department, health departments, and POTW servicing the Permit Area.

Co-Permittee maintenance of the facility inventory/database includes regularly updating the inventory/database for information obtained during facility inspections or from any of the following sources: conditional use permits, plot plans, building permits, business licenses, occupancy permits, hazardous materials permits, and hazardous waste generator permits are approved for the development of a new industrial facility, additional facilities are identified through the CAP, and as compliance surveys and inspections are completed and industrial facilities are identified. The Permittees existing inventory/ database of industrial and commercial facilities were updated to include the following categories:

- Mobile automobile or other vehicle washing (base of operations),
- Mobile carpet, drape or furniture cleaning (base of operations),
- Nurseries and greenhouses,
- Landscape and hardscape installation (base of operations), and
- Other commercial sites/sources that the SAR Co-Permittee determines may contribute a significant pollutant load to the MS4.

Santa Ana Region Specific Elements

Mobile high pressure or steam cleaning (base of operations)

Santa Margarita Region Specific Element

Many of these facility types are covered by the CAP within each Permittees jurisdiction. Each Permittee has reviewed the CAP site list and supplemented their local inspection programs to include any of the following facility types not covered by the CAP inspections:

- Automobile, airplane, and boat mechanical repair, maintenance, fueling, or cleaning
- Equipment repair, maintenance, fueling, or cleaning
- Automobile and other vehicle body repair or painting
- Automobile (or other vehicle) parking lots and storage facilities
- Retail or wholesale fueling;
- Pest control services (base of operations)
- Eating or drinking establishments
- Concrete mixing or cutting (base of operations)
- Painting and coating (base of operations)
- Golf courses, parks, and other recreational facilities
- Cemeteries
- Pool and fountain cleaning (base of operations)
- Port-a-Potty servicing (base of operations)

- Facilities subject to the General Permit-Industrial[44]
- Closed municipal landfills
- Facilities subject to SARA Title III
- Facilities tributary to a Receiving Water included on the 303(d) List of impaired waterbodies, where the facility generates pollutants causing the impairment(s)

At a minimum, the Co-Permittees' databases include the following information:

- Facility name,
- Facility street address,
- City,
- Zip code,
- Standard Industrial Classification (SIC) Codes,

Santa Ana Region Specific Element

- Mailing address (if different),
- Location reference (such as, geographic coordinates, cross streets, etc.),
- Facility contact
- Facility contact phone number,
- WDID Number associated with the General Permit-Industrial (if any)
- Other NPDES permit or Waste Discharge Requirements,
- Assessor's parcel number, and
- Site size.

Santa Margarita Region Specific Element

Narrative description that best reflects the principal products or services provided by each facility.

8.2 SMR MINIMUM BMPS FOR INDUSTRIAL/COMMERCIAL FACILITIES

In their Individual SWMP each SMR Co-Permittee has designated minimum BMPs for the industrial and commercial facilities within their jurisdiction to reduce the discharge of pollutants to the MEP. For those industrial and commercial facilities that are discharging directly to Receiving Waters that are included in the 303(d) List as impaired, each SMR Co-Permittee has designated additional BMPs as necessary to specifically target the pollutants contributing to the identified impairment. For those industrial and commercial facilities that are within, directly adjacent to, or discharging directly to ESAs, each SMR Co-

[44] See Attachment 1 to the General Permit-Industrial which can be reviewed or downloaded from the following website: http://www.waterboards.ca.gov/stormwtr/docs/induspmt.pdf.

Permittee has designated additional BMPs as necessary to protect the ESAs. Each SMR Co-Permittee's designated additional BMPs are reflected in their Individual SWMP.

The Co-Permittees have notified the industrial and commercial facilities of the minimum BMPs and additional BMPs (when appropriate) applicable to facilities within their jurisdiction. This notification identified and included a description of the Co-Permittee's storm water ordinance. Where implementation of the minimum BMPs and the additional BMPs are identified as being insufficient to achieve compliance with the SMR MS4 Permit, the Co-Permittees require the implementation of additional site-specific BMPs.

8.3 INDUSTRIAL/COMMERCIAL FACILITY PRIORITIZATION AND INSPECTION FREQUENCY

For each facility/business included in a Permittee's industrial and commercial inventory, the Permittees have assigned a priority of High, Medium, or Low to reflect the facility's/business's potential for contributing to the impairment of Receiving Water quality. In order to develop a consistent prioritization standard, the Permittees developed a matrix for the relationship between priority ratings (High, Medium, and Low) and Receiving Water pollution threat. This Industrial and Commercial Facility/Business Prioritization Matrix is presented in Table 8-1.

Table 8-1. Industrial and Commercial Facility/Business Prioritization Matrix

Priority	Inspection Frequency
High	Once a year
Medium	Once every two years
Low	Once during the Third-term Permit period

Criteria considered include types of industrial and commercial activities (SIC codes), materials or wastes used or stored outdoors, types of activities conducted outdoors, pollutant discharge potential, facility size, proximity and sensitivity of Receiving Waters, history of unauthorized non-storm water discharges, whether facility is subject to General Permit-Industrial, available facility-specific monitoring data, frequency of existing inspections based upon other California statutes or regulations, or local regulations, ordinances, or codes, and any relevant factors.

The initial priority assigned to a facility/business by the Permittees was based upon (1) completed survey forms from inspections conducted as part of the CAP, or (2) information provided in inspection reports completed as part of the Municipal Wastewater Pre-Treatment Inspection Programs (Cities of Corona and Riverside).

Santa Ana Region Specific Element

Within the SAR, at a minimum, a facility must be categorized as high priority if it is a facility subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 or if it is a facility with a high potential for or history of unauthorized non-storm water discharges.

8.4 INDUSTRIAL AND COMMERCIAL FACILITY INSPECTIONS

The Permittees have developed a mechanism to identify compliance of industrial and commercial facilities with local storm water ordinances and, where applicable, potential non-compliance with the General Permit-Industrial. There are two main components of this existing program: the Compliance Assistance Program and the local POTW inspection programs. When conducting facility/business inspections, at a minimum, the following are addressed:

- Verification of the type (or types) of industrial and/or commercial activities and facility SIC codes.
- Submittal of a NOI to comply with the General Permit-Industrial, if applicable based upon the facility's SIC code.
- Compliance with the local jurisdiction's storm water ordinance.
- Observation for non-storm water discharges, potential illicit connections, and illegal discharges to the MS4.
- Potential discharge of pollutants in Urban Runoff from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.
- Implementation and maintenance of appropriate or minimum BMPs.
- Qualitative assessment of the effectiveness of the BMPs implemented.
- Education regarding storm water pollution prevention.

8.4.1 Compliance Assistance Program

Regionally, the County's Department of Environmental Health implements the Compliance Assistance Program (CAP) for oversight and inspection of industrial and commercial sources. This is the baseline program for the SAR and SMR. The inspections performed as part of the CAP are conducted at frequencies required by other regulatory programs. All Co-Permittees either implement the CAP or an equivalent industrial and commercial facility inspection program.

In April 2004, the District and the County's Department of Environmental Health executed an agreement that provides continued support for the area-wide CAP. The CAP involves a detailed storm water compliance survey for facilities that must secure a hazardous materials permit for storing, handling or generating such materials and for retail food facilities. Many types of industrial and commercial establishments are inspected by the County's Department of Environmental Health Hazardous Materials Management staff including those that conduct automobile mechanical repair, maintenance, fueling, or cleaning operations, automobile or other vehicle body repair or painting operations, and painting or coating operations. There are approximately 5,500 facilities having a hazardous materials permit of which approximately 2,300 are inspected annually and all facilities are inspected at least once during a two-year cycle. There are approximately 6,750 retail food facilities, all of which are inspected one to three times annually.

Blank copies of the forms used by the County's Department of Environmental Health when conducting these storm water compliance surveys are included in Appendix Q. Completed survey forms are forwarded to the District and then to the appropriate Co-Permittee. The respective jurisdiction's representative identifies those surveys that indicate non-compliance to initiate a follow-up inspection.

During the CAP surveys of the hazardous materials permit facilities the following minimum BMPs are verified:

- Hazardous waste/materials storage areas are clean, no signs of leakage, and protected from rainfall and runoff;
- Trash bin areas are clean, the bin lids are closed, the bins are not filled with liquid, and no signs of leakage from the trash bins;
- Aboveground tanks have been properly maintained including no signs of leakage, and secondary containment in good condition;
- Onsite storm drain inlets are protected from inappropriate non-storm water discharges;
- Oil/water separators are connected to sanitary sewer;
- Wash water from wash pads (steam cleaning or high pressure cleaning) is directed to the sanitary sewer and does not discharge to the MS4;
- Mop bucket wash water is discharged to sanitary sewer via clarifier;
- Parking lot areas are free of trash, debris, and fluids other than water; and
- Facility has coverage under the General Permit-Industrial, if appropriate.

These specific topics are addressed in questions 1-10 of the "Hazardous Waste/Hazardous Materials Facility Storm Water Compliance Survey" form included in Appendix Q.

The Third-term MS4 Permits required the Permittees to ensure that the storm water compliance surveys of restaurants are conducted. During the CAP restaurant surveys the following minimum BMPs are verified:

- Oil and grease wastes are not discharged onto a parking lot, street or adjacent catch basin;
- Trash bin areas are clean, the bin lids are closed, the bins are not filled with liquid, and the bins have not been washed out into the MS4;
- Floor mats, filters and garbage containers are not washed in adjacent parking lots, alleys, sidewalks, or streets and that no wash water is discharged to MS4s; and
- Parking lot areas are cleaned by sweeping, not by hosing down, and that the facility operator uses dry methods for spill cleanup.

These specific topics are addressed in questions 1-8 of the "Food Facility Storm Water Compliance Survey" form included in Appendix Q.

The CAP includes educational outreach to the inspected facilities and completion of a detailed storm water compliance survey. In conducting a facility inspection, if it appears that the facility may be required to have coverage under the General Permit-Industrial and the facility operator indicated that an SWPPP is not onsite, the inspector provides the facility operator with an informational sheet on the requirements of the General Permit-Industrial and makes a notes on the compliance survey that the SWPPP was not available onsite. Each Permittee also verifies the SIC codes of each facility to ensure that the General Permit-Industrial is obtained where necessary.

8.4.2 Municipal Wastewater Pre-Treatment Inspection Programs

The Cities of Corona and Riverside, which operate publicly owned treatment works (POTWs), in combination conduct annually on average, approximately 4,400 wastewater pre-treatment inspections on a variety of industrial and commercial establishments, including, but not limited to, retail food establishments, car washes, and carpet, drape & furniture cleaning establishments. When conditions are observed during these wastewater pre-treatment inspections that appear to be a violation of either the General Permit- Industrial or other permit issued by the Regional Board (for example, an individual NPDES permit or Waste Discharge Requirements), the Cities of Corona and Riverside notify Santa Ana Regional Board staff.

During commercial or industrial facility inspections, the inspectors document whether the facility:

- Appears to be in compliance with local storm water ordinances;
- If applicable, has submitted an NOI to comply with the General Permit-Industrial; and
- Appears to have poorly managed authorized non-storm water discharges or evidence of unauthorized non-storm water discharges, which may be illicit connections or illegal discharges to the MS4.

This information is documented on a separate report or included on an inspection form. Inspections resulting in enforcement action are referred to the appropriate jurisdictional entity.

8.4.3 County Business License Inspection Program

The Riverside County Department of Building and Safety has been tasked with developing a pilot project to establish a stand alone Storm Water Compliance Inspection and Enforcement Program (CIEP) for industrial/commercial facilities in the unincorporated areas of the Count Ordinance 857 (Business Registration and Licensing) was adopted on September 12, 2006 by the County Board of Supervisors and provides the basis for registering all businesses that are within the unincorporated areas of the County. Once a database has been established and businesses are registered, inspections will occur to determine the compliance status of the registrants with the County's Storm Water Ordinance. Businesses that are determined to have a potential impact on the requirements of the MS4 Permit will be prioritized and inspected based upon a yet-to-be-defined compliance inspection schedule. The CIEP will be phased in over time with the initial inspections to start sometime in fiscal year 2007-2008. As the CIEP is implemented, the CAP will diminish except in the incorporated cities that rely on the CAP to meet their inspection requirements or until another compliance inspection option becomes available.

8.5 ENFORCEMENT

If during a routine inspection or an inspection in response to a complaint, an inspector observes that a business/facility is non-compliant with the Co-Permittee's storm water ordinance (including the prohibition of non-exempt non-storm water discharges or minimum BMPs); the Co-Permittee begins enforcement procedures. As described in Section 3.4 (Legal Authority and Enforcement), the severity of the violation is based on various factors. After considering the various factors, the Co-Permittee determines the level of enforcement that is required consistent with the enforcement levels described in Table 3-3.

8.6 REGIONAL BOARD NOTIFICATION REQUIREMENTS

The Permittees notify the Regional Board when inspectors, other Permittee staff, or third parties report observing potential non-compliance of a non-Emergency Situation nature with the General Permit-Industrial or other permits issued by the State Board or Regional Board. Such notifications are made by telephone or email within 2 working days of receiving notice from its staff or a third party. Examples of non-compliance of a non-Emergency Situation nature are a facility that cannot demonstrate coverage under the General Permit-Industrial when it is apparent that it should have coverage, a facility that has coverage under the General Permit-Industrial but does not have a SWPPP available on-site, or a facility that is not properly implementing or maintaining BMPs. The Regional Board staff will then determine if an inspection and enforcement action is appropriate. Upon providing notification to the Regional Board, Permittee staff take no further action with respect to enforcement of the General Permit-Industrial. However, the Permittee continues with progressive enforcement of its ordinances at the site as described in Section 3.4.2 of the DAMP.

Notifications regarding Emergency Situations are described in Section 4.3.

8.7 INVENTORY AND REPORTING

Santa Ana Region Specific Element

For purposes of annual reporting, the Permittees developed a standardized spreadsheet for inventorying industrial and commercial facilities/businesses within their jurisdiction and the associated inspection and enforcement information. That standardized spreadsheet is shown in Figure 8-1.

Santa Margarita Specific Element

Each Permittee inventories industrial and commercial facilities/businesses within their jurisdiction on a spreadsheet similar to the one in Figure 8-1 and maintains it in their Individual SWMP. Each Permittee also reports a list of industrial facilities that may require coverage under the General Industrial Permit, and for which a NOI has not been filed in their annual reports. The annually reported list of non-filers will include name, address, and SIC code(s) of the facility.

8.8 INDUSTRIAL/COMMERCIAL FACILITY INSPECTOR TRAINING

Co-Permittee staff and contractor personnel responsible for conducting industrial/commercial facility inspections or follow-up inspections receive annual training regarding the following topics:

- Selection, implementation, and maintenance of appropriate or minimum BMPs for industrial or commercial facilities,
- The General Permit-Industrial and NOI requirements,
- The local jurisdiction's Storm Water Ordinance and other local jurisdiction resolutions and codes related to protection of water quality,
- The local jurisdiction's enforcement and compliance strategy/policy for industrial commercial facilities
- The Third-term MS4 Permits and the DAMP, and
- How to provide guidance to facility operators on proper selection, implementation and maintenance of industrial/commercial BMPs and compliance with the requirements of the Storm Water Ordinance during site inspections.
- TMDL requirements and appropriate BMPs to mitigate the impacts of industrial and commercial facilities.

Santa Ana Region Specific Element

The Co-Permittees ensure that newly hired municipal staff or transferred municipal staff receive formal training within 6 months of beginning their inspection duties. Also, when planning formal classroom training related to conducting inspections of industrial or commercial facilities, the Co-Permittees notify and coordinate with Regional Board staff. Co-Permittee staff responsible for conducting industrial or commercial facility inspections may also attend training sponsored by industry associations (e.g., American Society of Civil Engineers, American Public Works Association, etc.), the California Storm Water Quality Association, other area-wide MS4 permittees, or other entities in lieu of Permittee sponsored training. The Permittees individually maintain a log of trained staff and report training in their annual reports.

Figure 8-1. Standardized Spreadsheet for Co-Permittee Industrial and Commercial Facility Inventory and Inspections

FACILITY GENERAL INFORMATION									MUNICIPAL PERMITS	FACILITY CONTACT INFORMATION					INSPECTION / ENFORCEMENT STATUS (See Note B.)						
	Facility Location											Mailing Address (if different from street address)									
Facility Name (dba) See Note A.	Street Address	Cross Street	City	Zip	Watershed	Facility SIC Code	Facility Site Size	WDID No. (General Permit)	Business License, Wastewater Permit, etc. (if applicable)	Contact Name	Contact Phone Number	Street Address	City	Zip	Number of Stormwater Inspections	Satisfactory	Verbal Warning	Written Warning	Notice of Violation	Cease & Desist Order	Referred to RWQCB

Notes: A. Name of facility. If the facility is covered by the General Permit for Stormwater Discharges Associated with Industrial Activity, the facility name as used by Regional Boards can be obtained from the State Water Resources Control Board Industrial General Permit database (Column titled "Facility_SiteName") or from a copy of the applicant's Notice of Intent.

B. Enter the number of inspections and the number of each type of enforcement action for each Facility.

9.0 RESIDENTIAL SOURCES

The Residential Sources program element is applicable only to the SMR.

9.1 HIGH PRIORITY RESIDENTIAL ACTIVITIES

Each SMR Co-Permittee has identified for its own jurisdiction the high priority residential activities that it believes may be contributing a significant pollutant load to its MS4. The residential activities that have been identified as high priority by each SMR Co-Permittee's are reflected in the Individual SWMPs. In identifying their high priority residential activities, the SMR Co-Permittees considered the following activities:

- Automobile repair and maintenance
- Automobile washing
- Automobile parking
- Home and garden care activities and product use (pesticides, herbicides, and fertilizers)
- Disposal of household hazardous waste
- Disposal of pet waste
- Disposal of green waste

9.2 MINIMUM BMPS FOR RESIDENTIAL ACTIVITIES

For each of the high priority residential activities identified for their jurisdiction, the Co-Permittees have designated a set of minimum BMPs to reduce the discharge of pollutants from these activities to the MEP. These designated minimum BMPs for high priority residential activities are identified in each Co-Permittee's Individual SWMP. The proposed Minimum BMPs are consistent with the public education programs targeting residential activities in Section 10 of the DAMP.

For those residential areas that are tributary to Receiving Waters that are included in the 303(d) List as impaired, each Co-Permittee has designated additional BMPs as necessary to specifically target the pollutants contributing to the identified impairment. For those residential areas that are within, directly adjacent to, or discharging directly to Environmentally Sensitive Areas (ESAs), each Co-Permittee has designated additional BMPs as necessary to protect the ESAs. Each Co-Permittee's designated additional BMPs are reflected in their Individual SWMP.

The Co-Permittees have notified the residents of the minimum BMPs and additional BMPs (when appropriate) applicable to their residences though the Public Education program. This notification identified and included a description of the Co-Permittee's storm water ordinance.

9.3 ENFORCEMENT

If during an inspection in response to a complaint, an inspector observes that a residence is non-compliant with the local jurisdiction's storm water ordinance (including the prohibition of non-exempt non-storm

water discharges); the Co-Permittee begins enforcement procedures. As described in Section 3.4 (Legal Authority and Enforcement), the severity of the violation is based on various factors. After considering the various factors, the Co-Permittee determines the level of enforcement that is required consistent with the enforcement levels described in Table 3-3.

10.0 PUBLIC EDUCATION AND OUTREACH

10.1 INTRODUCTION

Public education is an essential part of a municipal storm water program. Developing programs to increase public awareness and to involve the public can be an effective method for controlling pollution associated with Urban Runoff. Emphasizing the relevant impact of Urban Runoff to each particular target audience increases the likelihood that the messages will be noticed and that the audience will support and participate in program implementation. The Permittees have developed a strong area-wide public education and outreach program.

To leverage finite resources, the public education program has frequently partnered with various entities (Riverside County's Waste Management Department, Western Riverside Council of Governments, Los Angeles County Department of Public Works, Riverside Corona Resource Conservation District, and the California Conservation Corp, etc.) to promote conservation, pollution prevention and environmental awareness. The education program also expands outreach opportunities by collaborating with entities such as Riverside County's Agricultural Commissioner and University California Cooperative Extension to promote proper use of pesticides and herbicides to specific target groups such as pesticide applicators and home gardeners.

The public education program developed an Internet website that provides information to residents and businesses about the problem of storm water pollution and offers simple storm water pollution prevention activities. The website also provides materials order form for all educational materials. The website also has a tracking mechanism for the number of queries. The website address is http://www.floodcontrol.co.riverside.ca.us/stormwater/.

10.2 MS4 PERMIT REQUIREMENTS

The Third-term MS4 Permits require the Permittees to continue and expand implementation of public information activities, and other appropriate outreach activities to facilitate the development and implementation of the Urban Runoff management program. In general, the Third-term MS4 Permits require the Permittees to meet the following goals:

- Incorporation of Public Involvement in the program development and implementation process.
- To continue to participate in joint outreach efforts to ensure that a consistent and effective message on Urban Runoff pollution prevention is brought to the public.
- To establish a Public Education Committee to oversee and guide the implementation of the public education program.
- Expand the existing public educational program to include a concentrated, business-specific element. This education program must include information to encourage commercial facility owners and/or operators to comply with the local jurisdiction's storm water ordinance and, where applicable, the General Permit-Industrial or other NPDES permit or Waste Discharge Requirements issued by the State Board, Santa Ana or San Diego Regional Board.

- To target residents, including businesses, commercial, and industrial establishments.
- To measurably increase the awareness of Urban Runoff issues.
- To develop targeted BMP guidance for specific pollutants and residential and business activities, including identification of actions to prevent sewage spills.
- To develop, implement and promote a 1-800 hotline for reporting clogged storm drains, faded or missing catch basin stencils, illegal dumping from residential, industrial, construction and commercial sites into public streets, storm drains and waterbodies, and providing general Urban Runoff and BMP information.

10.3 OBJECTIVES

The public education program element has established the following guiding objectives.

Outreach Objectives:

- Foster broad public awareness of water pollution concerns;
- Increase public acceptance of pollution prevention activities to curtail everyday human behaviors that contribute to water quality problems;
- Educate/inform the general public, regulators and key local government and state decision makers on Urban Runoff conditions in Riverside County;
- Promote stewardship of local water resources.

Pollution prevention based education BMPs are a major focus of the outreach program. The outreach program includes three categories: Public Behavior, Business Activity, and Potential Pollutants. Table 10-1 identifies typical audience and outreach programs for the three categories of the outreach program.

Table 10-1. Public Education and Outreach Methods

Category	Audience	Potential Outreach Methods
Public Behavior	Residents; General Public	• Pamphlets • Brochures • Radio • TV/Cable • Billboards • Utility Bill Inserts • Direct Mail • Newspaper Inserts • Advertisements • Community Events • Surveys • Community Presentations
	Students	• Classroom Presentations • Videos • Workbook Materials • Coloring Contests
	Home Gardeners	• Focused Brochures • Posters • Workshops • Newspaper Inserts
Business Activity	Commercial; Industrial	• Brochures • Posters • Site Inspections
	Mobile Operators (auto maintenance; vehicle washing; mobile carpet, drape and furniture cleaning; mobile steam cleaning)	• Brochures • Information at Public Permit Counters • Site Inspections (base of operations)
	Groundskeepers, landscape installation, nurseries, greenhouses	• Focused Brochures • Posters • Workshops • Newspaper Inserts • Site Inspections (base of operations)
	Architects; Developers	• Focused Brochures • Information at Public Permit Counters • WQMP and Supplement A Compliance reviews
	General Contractors; Construction Contractors	• Focused Brochures • Information at Public Permit Counters • New Development Guidelines • Site Inspections
Potential Pollutants	Users or Generators of fertilizers, pesticides, chemicals, and other pollutants	• Pamphlets • Brochures • Radio • TV/Cable • Utility Bill Inserts • Newspaper Inserts • Advertisements • Community Events • Community Presentations • Surveys • Licensing

Program Management Objectives:

- Encourage/educate/inform the regulators, Permittee personnel and other key local government and state decision makers on the purpose, use and requirements of the DAMP;
- Solicit public involvement in the development of local water quality programs;
- Focus on water quality issues specific to each Region.
- Coordinate public education efforts with adjacent storm water management programs and other related education programs to share resources, coordinate outreach efforts, and avoid costly duplication of effort; and
- Adapt public education programs and objectives, based on feedback surveys, monitoring data, and other methods, to address changing MS4 program needs and objectives.

Program management objectives serve as a management strategy for public education program implementation and development. These objectives are achieved through techniques such as local coordination meetings, participation in regional organizational efforts, advertising and outreach to adjacent programs. Table 10-2 identifies secondary objectives and typical techniques used to implement them.

Table 10-2. Public Management Methods

Category	Potential Outreach Methods
DAMP Education (Section 10.5.2.1)	• Management Steering Committee • Permittee Technical Committee • Personnel Training Programs • Coordination Meetings with other Departments/Agencies • Comments on CEQA Documents
Public Participation (Section 10.5.2.2)	• Information at Public Permit Counters • Public Workshops • Public Notifications • Posting Notices on Web Sites • Notifying Interested Parties
Program Coordination (Section 10.5.2.3)	• Participation in California Association of Stormwater Quality Agencies • Participation in various Watershed Management Efforts • Direct contact with adjacent or overlapping program managers (storm water, waste, others)
Adaptive Management (Section 10.5.2.4)	• Surveys of attendants of public fairs and events • Online web surveys • Review of monitoring data • Participation in surveys organized and coordinated by other local/state agencies • Staff Feedback • Incorporation of new state or federal guidelines or information

10.4 IMPLEMENTATION

10.4.1 Public Education Committee

The Permittees established the Public Education Committee to provide oversight and guidance for the implementation of the public education program. The Public Education Committee includes members of the Technical Committee and is chaired by the Public Education Coordinator. The Committee meets as needed but at least twice per year.

10.4.2 Program Framework

The Public Education Program is implemented at a countywide, regional and local level. The following subsections describe how the public education program is implemented at each level.

10.4.2.1 Countywide Level

As Principal Permittee for the County's three NPDES MS4 permits, the Riverside County Flood Control and Water Conservation District acts as administrator for the Public Education program and is responsible for developing a consistent and effective message on Urban Runoff pollution prevention throughout the County. This countywide element consists of developing a program image and core message, implementing countywide education programs, and coordinating countywide events and countywide interagency activities. The countywide program maintains a consistent look, theme and focus of the public education materials in each region. Countywide activities coordinated by the District include school education programs, distribution of public education materials to countywide inspection programs, participation in state organizations such as the CASQA, coordinating with other county agencies on various advertising campaigns, developing a look and theme for all public education materials and operation of the County's 24-hour 1-800 storm water pollution hotline.

10.4.2.2 Regional Level

The public education program is also tailored for each of the three regions in the County. This approach integrates elements of the countywide program while focusing on the specific geography and water quality issues of the area and allows the program to address the impacts of local activities on local water

quality. As Principal Permittee for each of the County's three MS4 permits, the District incorporates regional public education requirements established by each region's MS4 permit. The District also works with each region's Permittees to incorporate other regional public educational needs into that region's public education activities. Regional public education needs are established through formal and informal public education committees who discuss public education requirements and funding requirements each year. Regional public education programs may include participation in large community fairs, customized public education materials to address regional water quality issues, and participation in other local agencies regional public education efforts.

10.4.2.3 Local Level

Outside of the countywide and regional public education activities undertaken by the District on behalf of the Permittees, each Permittee may also undertake individual public education activities to address specific local needs or MS4 Permit requirements. These local activities may include distribution of public education information during construction site/business inspections; distribution of public education materials at front counters, local fairs and other community activities; and/or development of specific public education programs/materials to address specific needs.

10.5 PROGRAM COMPONENTS

The following subsections identify specific programs currently implemented by the Permittees to address program objectives. These programs are adaptively managed by the Permittees to meet the changing needs of the overall MS4 program based on changing regulations, water quality conditions, and feedback surveys.

10.5.1 Outreach Objectives

10.5.1.1 Public Behavior Education Program

The following programs are currently being implemented to foster broad public awareness of water pollution concerns; increase public acceptance of pollution prevention activities to curtail everyday human behaviors that contribute to water quality problems; and to promote stewardship of local water resources:

- **School Education Outreach**. Outreach to schoolchildren is the core to developing an environmental ethic in the next generation that can help prevent storm water pollution. The objective of this element of the public education program is implementation of a coordinated and comprehensive program that combines multiple elements – classroom or assembly presentations, teacher workshops and field events, and has the greatest potential to leave a lasting impression on school children. The program is implemented through contracts with the Riverside-Corona Resource Conservation District and the Mission Resource Conservation District. The program focuses on K through 6th grade. Videos on how to conduct an environmentally friendly car wash are passed out to secondary schools and secondary school level student organizations.
- **Brochures**. Brochures regarding illegal dumping, disposal of Household Hazardous Waste and Antifreeze, Batteries, Oil and Paint disposal information, lawn and garden maintenance

brochures, car washing, fertilizer, pesticide and household chemical use, pet care brochure, and home garden care guide.

- **Outreach Materials**. Various materials including oil containers, dust pans, pens, pencils, etc., based on availability and budget are provided free of charge to the public at community events to promote pollution prevention activities.
- **1-800 Hot Line**. The District operates a countywide 1-800 hotline number to encourage the public to report clogged storm drains, faded or missing catch basin stencils and illegal dumping from residential, industrial, construction and commercial sites into public streets, storm drains and waterbodies. This hotline is capable of receiving reports in both English and Spanish 24 hours/day seven days per week.
- **Website**. The District operates a website that provides information on how to report illegal dumping, clogged storm drains and lack of curb markers, as well as provides information on upcoming activities, opportunities for public participation in program development, and general information about Urban Runoff pollution prevention techniques. It also provides information for kids and teachers as well as an online media library and materials order form.
- **Mailing Inserts**. The District currently distributes various public education materials as mailing inserts. Public education materials have been distributed through mailings from the County of Riverside Environmental Health Division, County Mail, County Auditor and Controller, County Libraries, County Fleet, etc.
- **Media Outreach**. The Permittees have implemented radio-advertising campaigns and are evaluating the use of billboard campaigns to communicate pollution prevention concepts and information to the public.
- **Partnerships**. The District partners with several agencies:
  - Animal Care Services. The County Community Health Services provides pet licensing and patrol services to contracted cities and unincorporated areas of the County. They routinely distribute education materials that provide guidelines for pet care activities throughout Riverside County.
  - Riverside County Waste Management. Riverside County Waste Management (RCWMD) manages the recycling and composting programs and utilizes a variety of educational materials to recommend alternatives for reducing, reusing and the recycling of unwanted hazardous products, food wastes, paper and aluminum. There has been close coordination with RCWMD to ensure that the Permittees promote the proper disposal of unwanted waste in most forms of media print, as well as at outreach events. For example, the Permittees contribute funds towards the operation and maintenance of several Antifreeze, Battery, Oil and Paint (ABOP) and Household Hazardous Waste (HHW) Recycling centers, both fixed and mobile, throughout the County. In further support of this activity, the Permittees, Environmental Health and RCWMD also coordinate on the development of several outreach materials that identify the times and locations of HHW/ABOP recycling activities. These materials include a free environmental calendar that is passed out at public events, two page fliers that are mailed to residents via the Penny Saver, as well as a brochure regarding

HHW/ABOP disposal that describes how and where to properly dispose of HHW/ABOP items.

– Public Outreach Events. Participation in several public outreach events including Children's Groundwater Festival, Southern California Fair, Community Water Festival, Santa Margarita Watershed Clean Up, and Keep Riverside Clean and Beautiful, and Orange Blossom Festival.

10.5.1.2 Business Specific Education Program

The business education program consists of the development and distribution of formal BMP guidance for certain potentially polluting business activities including mobile detailing, automotive service center and restaurant cleaning operations; and outreach to business associations. The business specific public education program also attempts to educate businesses regarding the State Board's General Permit-Industrial. The business specific education efforts currently include:

- **Food Services Inspection Program**. This program focuses on the inspection of retail and wholesale food facilities. The Permittees have collaborated with County Environmental Health to ensure that storm water issues are discussed during food services inspections. The Registered Environmental Health Specialists (REHS) inspect over 6,700 food establishments throughout Riverside County. During these inspections food establishments are provided brochures such as entitled "What you should know for…The Food Service Industry" and the poster entitled "Good Cleaning Practices for the Food & Restaurant Industry." The materials provide food service employees, managers and owners with the best management practices that businesses should employ while performing various maintenance activities. In addition, Inspectors discuss common pollution prevention activities that food services facilities can undertake to prevent storm water pollution. The inspectors generally review appropriate methods for cleaning of dumpster and grease bin areas; replacement of leaking or dirty dumpsters; reducing liquid waste in trash and double bagging trash to prevent leaks; encouraging dry sweeping and using dry methods for spill clean up; disposing of wash water to the sanitary sewer rather than the storm drain system; stopping spills at their source; and proper maintenance of outdoor grease interceptors.
- **Industrial Business Inspection Program**. The Permittees have partnered with County Environmental Health's Hazardous Materials Management Division (HMMD) to ensure that storm water issues are discussed during HMMD's CUPA inspections of Riverside County businesses. HMMD implements the Hazardous Waste Inspection Program throughout Riverside County. Specialists in this program inspect 2,300 facilities that generate hazardous waste, evaluate hazardous waste generating industries, investigate reports illegal hazardous waste disposal, and respond to emergency spills of hazardous chemicals. During inspections, specialists routinely distribute appropriate storm water pollution prevention brochures, such as "What you should know for…Automotive Maintenance & Car Care" with a supporting poster entitled, "Keep Your Shop in Tune" to business owners. They also distribute brochures regarding the requirements of the General Permit-Industrial. In addition, Inspectors discuss common pollution prevention activities that facilities can undertake to prevent storm water pollution. Common activities discussed include proper disposal of automotive fluids; working on transmissions, engines, and miscellaneous repairs; preventing & cleaning up leaks and spills/dry method clean up; control of wastewater discharges; vehicle fueling and battery removal and storage; solvent

and grease management; metal grinding and finishing; storing and disposal of waste; outdoor parking and wash water management during outdoor cleaning; and steam cleaning practices.

- **Construction Inspection Program**. Each Permittee inspects construction projects within it's jurisdiction to ensure compliance with their local ordinances and to ensure that the site is covered under the General Permit-Construction, or equivalent Regional Water Quality Control Board Construction Permit, as appropriate. During these inspections, the inspectors discuss appropriate methods to prevent pollutants from being mobilized at construction sites.
- **Water Quality Management Plan and DAMP Section 6 Review**. The Permittees within the SAR and SMR of Riverside County review development projects within their regions for compliance with the Riverside County Water Quality Management Plan for Urban Runoff and Section 6 of the DAMP. During this review, the Permittees discuss appropriate BMPs with developers and engineers to ensure their developments incorporate reasonable site design, source control, and treatment control BMPs to protect downstream Receiving Waters.
- **Brochures**. Outdoor Cleaning Activities, General Storm Water Protection Information, General Construction and Site Supervision, Automotive Maintenance and Car Care, Outdoor Cleaning Activities, You Know…Your Facility May Need a Storm Water Permit (GIASP) and Food Service Industry.
- **BMP Posters**. Posters to address activities associated with the automotive repair industry, and the food/restaurant industry that may pose a threat to water quality and recommends BMPs that can be implemented to reduce the impact on the environment.
- **Website**. The District operates a website that provides downloadable Page Display Format (PDF) versions of brochures and posters, as well as additional information that businesses and developers can use to ensure that they are implementing appropriate BMPs at their sites. An online media library and materials order form is also available.
- **Media Outreach**. The Permittees have used radio campaigns and considered billboard campaigns to deliver pollution prevention messages to appropriate businesses.
- **Community Events**. Information and materials may be delivered to business people during trade shows, trade meetings, or other appropriate community events.

10.5.1.3 Potential Pollutants Education Program

The District has developed a number of brochures and outreach methods to address specific targeted pollutants such as fertilizers, pesticides, household hazardous waste chemicals, antifreeze, oil, batteries, and paint.

- **Partnerships**. The District partners with several agencies:
  - Riverside County Waste Management. Riverside County Waste Management manages the recycling and composting programs and utilizes a variety of educational materials to recommend alternatives for reducing, reusing and the recycling of unwanted hazardous products, food wastes, paper and aluminum. There has been close coordination with RCWMD to ensure that the Permittees promote the proper disposal of unwanted waste in most forms of media print, as well as at outreach events.

- Public Outreach Events. Participation in several public outreach events including Children's Groundwater Festival, Southern California Fair, Community Water Festival, Santa Margarita Watershed Clean Up, and Keep Riverside Clean and Beautiful, and Orange Blossom Festival.

- **Brochures**. Brochures regarding illegal dumping, disposal of household hazardous waste and antifreeze, batteries, oil and paint disposal information, lawn and garden maintenance brochures, car washing, fertilizer, pesticide and household chemical use, pet care brochure, and home garden care guide.
- **Outreach Materials**. Various materials including oil containers, dust pans, etc., based on availability and budget are provided free of charge to the public at community events to promote pollution prevention activities.
- **1-800 Hot Line**. The District operates a countywide 1-800 hotline that local residents can use to report illegal dumping, clogged storm drains, and obtain schedules for household hazardous waste and antifreeze, batteries, oil and paint clean-up locations and schedules.
- **Website**. The District operates a website that provides information on how to report illegal dumping, clogged storm drains and lack of curb markers, as well as provides information on upcoming activities, opportunities for public participation in program development, and general information about urban runoff pollution prevention techniques. It also provides information for kids and teachers as well as an online media library and materials order form.
- **Mailing Inserts**. The District currently distributes various public education materials as mailing inserts. Public education materials have been distributed through mailings from the County of Riverside Environmental Health Division, County Mail, County Auditor and Controller, County Libraries, County Fleet, etc.
- **Media Outreach**. The Permittees have implemented radio-advertising campaigns and are looking at billboard campaigns to deliver pollution prevention concepts and information to a broader range of the public.

10.5.2 Management Objectives

In order for the DAMP to be an effective planning tool for reducing pollutants in storm water, it is essential to involve the general public in the development of compliance documents, to train Permittee staff on the purpose, requirements and implementation of the programs outlined in the DAMP, to ensure that a consistent and cost effective message is brought to the public by coordinating with other regional education programs, and to ensure that the public education message is adaptively managed to ensure that it keeps up with the most recent regulatory requirements, watershed information, and changing MS4 program needs and objectives.

10.5.2.1 DAMP Education

The Permittees have incorporated methods into their DAMP programs to ensure that regulators, Permittee personnel and other key local government and state decision makers are educated regarding the purpose, use and requirements of the DAMP. The following paragraphs describe some of the specific practices used:

- **Management Steering Committee –** As Principal Permittee, the District chairs quarterly meetings with Permittee City Managers or Executive Officers to discuss program requirements, regulatory requirements, upcoming activities, and budgeting issues that impact the operations of their Cities/County. These meetings ensure that the top levels of each local government are aware of the changing needs and requirements of the NPDES Program.
- **Permittee Technical Committee –** Each month the District chairs a meeting of the Permittees for each of the NPDES Permit regions in Riverside County. These meetings are open to the public. Members of regulatory agencies and other local government and state agencies are invited to attend, particularly when issues affecting their operations are addressed. These meetings are used to discuss progress on DAMP development, upcoming activities, changes to the regulatory framework, and to present information on available BMP technologies. Special presentations are also occasionally made by other NPDES permit holders to discuss their programs and how they inter-relate with our programs.
- **Permittee Staff Training Programs –** The District provides staff training at least twice a year for the Permittee groups that the following four broad categories of activities: construction inspection, new development review, municipal activities, and industrial/commercial business inspection. These training programs provide a broad overview of the NPDES regulatory framework, discuss other state permits that impact Permittee activities, discuss DAMP and local ordinance requirements, and BMPs to be deployed during those activities. These programs are coordinated with Regional Board staff. The Permittees continue to review the adequacy of the existing staff training programs and continue to develop and improve them. The Permittees are also seeking to work with neighboring MS4 programs to cooperate in the development of staff training materials.
- **Coordination Meetings with other Agencies/Departments –** As needed the Permittees coordinate with other local governments and state agencies to discuss the requirements of the DAMP and the NPDES MS4 programs. These meetings are used to coordinate agency activities.
- **Comment on CEQA Documents –** Each Permittee reviews CEQA documents for public and private projects in their jurisdictions. The CEQA review includes specific questions regarding water quality and compliance with the DAMP and local ordinances. These questions help to ensure that other public and private entities are aware of water quality requirements.

10.5.2.2 Public Participation

In order for the DAMP to be an effective planning tool for reducing pollutants in storm water, it is essential to educate both the general public and other agencies on the purpose, requirements and implementation of programs outlined in the DAMP. The public participation process integrates public values into the planning, decision-making and problem-solving process. Under the public participation approach, interested and affected persons are afforded opportunities to influence the planning and decision-making process prior to the identification of a recommended solution. This approach allows solutions to public sector problems to be developed that are much more likely to be acceptable to the public and therefore implementable. The following methods may be used to facilitate the public participation process:

- **Open Meetings** – The Permittees currently hold Technical Advisory Committee meetings regarding the ongoing development of the DAMP and related programs. These programs are open to the public and they may provide comment on any activity that the Permittees are undertaking in support of the DAMP.
- **Public Notice** – The Permittees use public notices, posted on their websites and in local newspapers, to notify the public of the upcoming development of compliance programs, or of the release of draft compliance documents. These notices identify the period in which public comment will be accepted, where public comments may be submitted, and where copies of draft documents or supporting information may be located.
- **Public Workshop** – The Permittees may use formal or informal public workshops to facilitate an interactive discussion on draft compliance documents. These public workshops are usually publicly noticed at least two weeks prior to their date and are usually held in conjunction with publicly noticed comment periods.
- **Community Meetings** – The Permittees may use Community Meetings, such as City Council Meetings, local agency meetings, or others, to solicit comments from the public and other agency staff.

10.5.2.3 Program Coordination

A key factor in planning a cost effective and well-organized public education program is coordinating with existing, related programs at the local, state and national level. Such Programs include storm water pollution programs being developed in counties adjacent to Riverside County and throughout California; environmental education programs at the community level offered through other local agencies, environmental organizations, or schools; and County-wide or municipal efforts to promote ride-sharing, recycling, water conservation, and proper household hazardous waste disposal. These programs are coordinated to deliver a consistent message regarding Urban Runoff to the public.

The Permittees currently coordinate activities with several agencies and entities including the San Bernardino County MS4 Program; San Diego County MS4 Program; CASQA; Riverside-Corona and Mission Resource Conservation Districts; Riverside County Environmental Health, the Farm Bureau, the Building Industry Association, Riverside County Waste Management, City of Riverside Utilities, the Auditor-Controllers Office, the Regional Water Quality Control Boards and Caltrans.

10.5.2.4 Adaptive Management

The success of the public education program will depend on its ability to assess its effectiveness and adapt to changing water quality issues within each region of Riverside County. At least twice a year, the public education committee, convened as an individual sub-committee or as part of a budget committee, meets to discuss the effectiveness of the Countywide and Regional public education programs, to discuss countywide and regional needs, and to discuss necessary changes to the public education program to ensure that it adapts to those needs. The following tools may be used by the Permittees to assess the effectiveness of the public education program or to determine changing needs:

- **Monitoring Data** – The Permittees are collecting storm water monitoring data from each region of Riverside County. This data is analyzed for trends in pollutant loading and to see if pollutant

problems can be tied to particular activities or land uses. This data may be used to modify the public education program to address potential pollutant problems or activity problems within specific regions or countywide.

- **Public Surveys** – The Permittees either conduct surveys or may coordinate with surveys conducted by other agencies, to help assess the effectiveness of Permittee public education outreach activities. The Permittees have been conducting a storm water survey of attendants of various community fairs for the past three years. The Permittees also recently coordinated with the Lake Elsinore/San Jacinto Watershed Council on a phone survey of residents of the San Jacinto Watershed regarding water quality concerns. Results from these surveys will be used to adaptively manage the Permittees public education program. In addition, the Permittees Public Education subcommittee is conducting a review of the adequacy of our existing survey program and may make recommendations to modify the survey format or scope to better assess public education program effectiveness. Expansion and/or modification of the public survey program may include analysis of results from construction inspection and industrial/commercial inspection forms. The Permittees may also develop or coordinate with other agencies on other surveys, such as phone surveys or web based surveys in lieu of, or addition to, existing surveys in order to assess effectiveness.
- **Staff Feedback** – The Permittees may modify the public education program based on staff feedback or knowledge of water quality issues affecting Riverside County or specific regions of Riverside County.
- **Incorporation of New State or Federal Guidelines** – The Permittees may modify the public education program to address changes to the regulatory framework or regulatory requirements for specific DAMP related programs or activities.

11.0 MONITORING PROGRAM

11.1 OVERVIEW OF THE CONSOLIDATED PROGRAM FOR WATER QUALITY MONITORING

As Riverside County is within the jurisdiction of three Regional Boards, a Consolidated Program for Water Quality Monitoring (Consolidated Monitoring Program or CMP) was developed in 1994 to integrate the requirements of the three area-wide MS4 Permits. The overall goal of the CMP continues to be to develop information that can be used to support effective implementation of the Urban Runoff management programs throughout Riverside County.

The purpose of the MS4 Urban Runoff program is to manage the quality of Urban Runoff to the MEP to prevent impacts to Receiving Waters. The monitoring program goals necessary to support this purpose are:

- Develop and support an effective MS4 management program.
- Identify those Receiving Waters, which, without additional action to control pollution from Urban Runoff, cannot reasonably be expected to achieve or maintain applicable Water Quality Standards.
- Characterize pollutants associated with Urban Runoff and assess the influence of urban land uses on Receiving Water quality.
- Analyze and interpret the collected data to identify trends, if any, both to prevent impairments through the implementation of preventive BMPs and to track improvements based on the MS4 management program.

The Permittees have revised the CMP to address the detailed objectives specified in the Third-term MS4 Permits[45] and to more effectively utilize finite monitoring resources. The core part of the CMP identifies general monitoring elements common to the three MS4 permits applicable to Riverside County, while appendices to the CMP address watershed-specific requirements. The Permittees have also revised the CMP to reflect an integrated watershed monitoring approach consistent with the detailed objectives specified in the Third-term MS4 Permits. The CMP addresses the following:

- TMDL/303(d) monitoring
- Microbial monitoring
- Bioassessment monitoring
- Field Reconnaissance
- Evaluation of other sources of data
- Mass emission monitoring
- Water column toxicity monitoring
- Hydrologic monitoring
- Land use correlations
- Special studies

[45] Order No. R8-2002-0011, Appendix 3 (Monitoring and Reporting Program), Section II; Order No. R9-2004-001, Monitoring and Reporting Program, Section I.

The water quality monitoring activities require sampling and analysis from both wet weather and dry weather flows. Wet weather sampling involves weather forecasting, scheduling and mobilization of field crews, collection of representative samples from the runoff hydrograph, compositing samples, laboratory analysis, and maintenance of the laboratory analytical results in a water quality database. Dry weather flow in the MS4 indicates a source not related to a rainfall event, which may reflect an illicit connection, an illegal discharge, rising groundwater or other permitted or non-permitted non-storm water discharges. Therefore, the CMP also addresses mobilization guidance; water quality sampling procedures; quality assurance and quality control (QA/QC) procedures; data collection and analysis guidance; monitoring costs; and health and safety issues.

The CMP monitoring stations primarily sample Receiving Waters and discharges from MS4 outfalls. Receiving Water sampling locations were selected to provide baseline information of ambient water quality. The Receiving Water sampling stations include creeks, rivers, lakes, and reservoirs. A summary of the CMP stations is maintained in a sampling data base (spreadsheet format) that includes channel type, location information, nearest rain gauge, type of sampling location (MS4 outfall vs. Receiving Water), sampling methods and equipment, tributary area, and land use mix.

Santa Ana Region Specific Elements

In coordination with the Santa Ana Regional Board staff, the Permittees have identified monitoring locations that focus on areas in the SAR with elevated pollutant concentrations. The intent of these monitoring stations is to characterize Urban Runoff quality from urban land uses.

San Diego Region Specific Elements

San Diego Regional Board staff specified the monitoring locations that are to be used for the triad[46] and tributary monitoring stations and require the Permittees to identify IC/ID stations. This is intended to provide information regarding how the MS4 program as a whole is working by tracking changes in these stations over time.

The CMP is reviewed and updated annually by the Permittees in consultation with the Regional Boards based on program findings and changes in program needs, including TMDL development and implementation. The CMP is also revised to reflect modifications to procedures or to modify the location of monitoring stations as needed to incorporate new technology, address site safety deficiencies, address updated or revised sampling protocols or make other minor modifications to ensure the ongoing effectiveness of the CMP. Major revisions of the CMP, including addition or deletion of stations, or changes to monitoring constituents, are submitted for approval by the Regional Boards.

In addition, the State Board is required to develop a statewide municipal storm water (Urban Runoff) monitoring and reporting program. Once this statewide monitoring and reporting program has been developed, the Permittees will incorporate appropriate components into the CMP.

[46] A station where chemical, toxicity, and bioassessment monitoring occur.

11.2 PARTICIPATION IN REGIONAL AND WATERSHED-BASED MONITORING EFFORTS

The Permittees participate in several regional and/or watershed based efforts that either collect monitoring data or utilize existing monitoring data.

Santa Ana Region Specific Elements

As authorized by the Third-term SAR MS4 Permit, the Permittees may participate in statewide, national, and other monitoring programs in lieu of portions of the Urban Runoff monitoring program. The Permittees also participate in special studies in collaboration with universities, research organizations or other MS4 programs. The purpose of this collaboration is to leverage finite resources to obtain information that will be beneficial on a watershed or region-wide basis. The Permittees coordinate participation in these activities with the Regional Board and summarize such participation in the Annual Report.

Santa Margarita Region Specific Elements

The Third-term SMR MS4 Permit authorizes the Permittees to participate and coordinate with federal, state, and local agencies and other dischargers in the Santa Margarita watershed in development and implementation of a regional watershed monitoring program as directed by the Executive Officer. The intent of a regional monitoring program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled resources of the watershed. During a coordinated watershed sampling effort, the Permittees' sampling and analytical effort may be reallocated to provide a regional assessment of the impact of discharges to the watershed.

11.2.1 Storm Water Monitoring Coalition

The District participates in the Storm Water Monitoring Coalition on behalf of the Permittees. The Storm Water Monitoring Coalition includes representatives from the Los Angeles, San Diego and Santa Ana Regional Boards and each of the Principal Permittees in Southern California (i.e., the counties of Los Angeles, Orange, San Bernardino, San Diego and Ventura), and other interested municipalities. The overall goal for the Storm Water Monitoring Coalition is to establish a Southern California storm water research and monitoring agenda that would focus on improving storm water monitoring science, coordinate data collection efforts, and evaluate the effects of storm water discharges to receiving waters specific to Southern California.

11.2.2 Santa Margarita River Executive Management Team

The latest Memorandum of Agreement (MOA) for the "Santa Margarita Watershed Water Supply Augmentation, Water Quality Protection, and Environmental Enhancement Program", Agreement No. 02-AA-35-0078, between the United States Bureau of Reclamation, The Department of the Navy, United States Marine Corps, Riverside County Flood Control and Water Conservation District, Murrieta County Water District, Rancho California Water District, Fallbrook Public Utilities District, and County of San Diego Planning and Land Use Department, was executed on May 21, 2003. This MOA is for the support and development of Phase 3A of the SMR Study. The MOA established the Santa Margarita River Executive Management Team (SMREMT). The purpose of Phase 3A was:

- The development of a Santa Margarita River watershed water quality model,
- The evaluation of its usefulness for future TMDL development, and
- The evaluation of its usefulness to model assimilative capacity of the watershed.

Data used in development of the Santa Margarita River watershed model came from Fallbrook Public Utilities District, Rancho California Water District, Eastern Municipal Water District, Riverside County Flood Control and Water Conservation District, the Santa Margarita River Watermaster, the Pechanga, Cahuilla, Pauma, and Ramona Band of Indians, US Bureau of Indian Affairs, and the Camp Pendleton Marine Corps Base Office of Water Resources.

11.2.3 San Diego Prop 13 Santa Margarita Watershed Project Team

The County of San Diego obtained funding through a contract with the SWRCB pursuant to the Costa-Machado Water Act of 2000 (Proposition 13) to prepare a Watershed Management Plan for the Santa Margarita River watershed as required to implement California's Non-Point Source Pollution Control Program. A Watershed Management Plan is intended to be a mechanism by which watershed and land use decisions can be made with due consideration of all foreseeable effects on resources throughout the entire watershed. Due to funding limitations, the Santa Margarita River Watershed Management Plan is a less comprehensive effort that basically identifies existing water quality problems within the watershed, and potential solutions to those problems. The document can also be used to assist stakeholders who wish to pursue grant proposals.

A Technical Advisory Committee was formed to assist with the watershed planning effort. The Technical Advisory Committee consists of the U.S. Bureau of Reclamation, U.S. Forest Service, U.S. Marine Corps Base Camp Pendleton, the County of Riverside; the County of San Diego; City of Temecula; the Metropolitan Water District of Southern California, Mission Resource Conservation District, Fallbrook Land Conservancy, San Diego State University Field Station Programs, Boldt Consulting; and RB Riggen and Associates. In addition to the Technical Advisory Committee members, key stakeholders include, among others, San Diego Regional Board; the Murrieta County Water District, the Rancho California Water District, Eastern Municipal Water District, the Santa Margarita Ecological Reserve, the City of Murrieta; the Friends of Santa Margarita; and the U.S. Army Corps of Engineers.

11.2.4 Water Quality Standards Task Force

The Water Quality Standards Task Force is made up of the Principal Permittees of the San Bernardino, Orange and Riverside County MS4 programs, the Santa Ana Regional Water Quality Control Board and other interested stakeholders. The objective of the group is to review the REC-1 Beneficial Use and its assigned Water Quality Objectives to determine if they are appropriate to the needs of the Santa Ana watershed. The group is particularly focused on the appropriateness of the water quality objective for pathogens associated with REC-1.

11.3 WATER QUALITY ASSESSMENT

Precipitation and water quality data are maintained in a proprietary integrated data management system by the District. Stringent quality control procedures, including data analysis and reporting procedures, are

implemented to ensure the integrity of the data in the data management system. Other software may be used as needed to analyze the data and create reports. The Permittees meet at least annually to review and assess available water quality data, assess overall program effectiveness, and review and update the DAMP as necessary.

Specific procedures for assessing the water quality of Receiving Waters based on existing water quality data, results from ongoing IC/ID and Monitoring Programs, and data obtained from other sources are incorporated into CMP. Variations from these procedures will be noted in the Annual Reports. When assessing water quality, the Permittees consider known impairments for Receiving Waters.

The 2006 303(d) List[47] identified some Receiving Waters in the SAR and SMR as impaired. The identified causes for the various impairments include nutrients (nitrogen and/or phosphorus), pathogens, sediment, suspended solids, and unknown toxicity. Additionally, the Regional Boards also identified Receiving Waters that require additional monitoring to improve the quantity and/or quality of the data used to develop the 303(d) List. Some Receiving Waters in the SAR and SMR were designated for additional monitoring for parameters such as metals (aluminum, copper, iron, manganese, and silver), sulfates, total dissolved solids, and salinity.

11.4 IC/ID PROGRAM

The CMP contains a general procedure used to identify and eliminate illicit discharges. The procedure will be updated as appropriate within the SAR Region. The SMR MS4 permit specifies a procedure that must be followed within the SMR.

[47] The current 303(d) List can be viewed or downloaded from the following websites: http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r8_final303dlist.pdf or http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r9_final303dlist.pdf.

12.0 PROGRAM EVALUATION, REPORTING AND REVISION

12.1 ANNUAL REPORTING

Each year the Permittees prepare an Annual Report summarizing the implementation of the programs described in the DAMP for submittal to the Regional Boards. To support preparation of the Annual Reports, the Permittees submit to the District documentation of their implementation of the DAMP compliance programs utilizing standardized reporting forms. Copies of these standardized reporting forms are included in Appendix R. The reporting forms will be amended by the Permittees as needed to facilitate changes in compliance programs or more accurate reporting of compliance programs.

12.2 PROGRAM EVALUATION

The Permittees will regularly assess the component programs of the DAMP to identify improvements that will promote the reduction of pollutants in Urban Runoff to the MEP while also supporting the responsible management and allocation of the public resources available to implement the DAMP.

The short-term strategy for assessing the effectiveness of the DAMP will focus on quantitative, but indirect methods (that is, not directly based on the quality of Urban Runoff or receiving water quality) of assessment. The Permittees will track and report the following data that are believed to have a positive influence on Urban Runoff and receiving water quality:

- The estimated quantity of material removed from the MS4. (Regional and Permittees)
- The estimated quantity of material collected under litter removal and street sweeping programs. (Co-Permittees)
- The total number of construction sites inspections for storm water compliance. (Co-Permittees)
- The total number of industrial and commercial facility inspections for storm water compliance (Co-Permittees).
- The quantity of household hazardous waste material collected through the HHW Collection and ABOP Programs. (Regional)
- The number of Permittee staff receiving training for activities related to DAMP implementation. (Regional and Permittees)
- The number of Urban Runoff complaints received through hotlines. (Regional and Permittees)
- The number of illicit connections detected and eliminated. (Permittees)
- Construction outreach events conducted. (Regional and Co-Permittees)
- Industrial/Commercial outreach events conducted. (Regional and Co-Permittees);
- Media impressions. (Regional and Co-Permittees)
- Classroom presentations. (Regional)
- Public education events conducted. (Regional and Co-Permittees)

In addition to assessing the effectiveness of the various program elements, the Permittees will conduct an assessment of the effectiveness of their overall programs. In the SMR, the Permittees will assess the overall program effectiveness using the measurable goals and direct and indirect assessment measurements described in their Individual SWMPs. The legal authority and program management elements of the Permittee programs will also be considered in this assessment. Major accomplishments and changes to be implemented in the subsequent year to improve the effectiveness of the program will be included in the evaluation.

The long-term strategy for assessing the effectiveness of the DAMP will focus on water quality data obtained as part of the CMP. This is by necessity a long-term strategy since the first step will be to develop and understand baseline data, and then due to the inherent variability of Urban Runoff, years of monitoring data will be necessary to identify statistically significant trends or conclusions. Additionally, because there are numerous program elements being implemented concurrently and because other environmental regulation indirectly impacts Urban Runoff, the ability to identify cause-and-effect relationships between a specific program element and/or BMP and improvement in the quality of Urban Runoff is complicated, if not infeasible.

12.3 DAMP REVISIONS

As part of the annual reporting process for the SAR and SMR, the Permittees review the DAMP to identify the need, if any, for revisions. The Annual Reports will include the findings of these reviews. Additionally, the Permittees will propose revisions to the DAMP under the following conditions:

- As directed by the Executive Officer to reflect regional and watershed-specific requirements and/or Waste Load Allocations developed and approved pursuant to the TMDL process for Impaired Waterbodies.
- As directed by the Executive Officer where the DAMP must be revised in order to address exceedances of Receiving Water Limitations that have been determined to be contributed to or caused by Urban Runoff.

Specific TMDL requirements and programs will also be incorporated into the DAMP as the TMDLs are incorporated into the Basin Plan. The DAMP is sufficiently flexible to allow many TMDL requirements to be incorporated without the need for revision. These requirements may include schedules for meeting interim and final Urban Runoff Waste Load Allocations, evaluating the effectiveness of BMPs and/or other control actions implemented to meet the Waste Load Allocations, and evaluating compliance with the Waste Load Allocations. Interagency Agreements or Memoranda of Agreement may be developed to identify Permittee and non-Permittee responsibility in TMDL activities. Current TMDLs that are in process include:

- San Jacinto Watershed Nutrient TMDL – Board Order R8-2004-0037
- Reach 3 Santa Ana River Bacteria TMDL – Tentative Order R8-2005-0001
- Canyon Lake Pathogen TMDL – Board Order not assigned

The revised Riverside County DAMP will be submitted with the respective SAR or SMR ROWD. Upon approval by the Executive Officer, the Permittees will implement the DAMP revisions in accordance with the schedule included as part of the ROWD.

13.0 TMDL IMPLEMENTATION

13.1 INTRODUCTION

The federal Clean Water Act Section 303(d) requires that states identify receiving waters that do not or are not expected to meet Water Quality Standards (beneficial uses, Water Quality Objectives and the antidegradation policy). Once a waterbody has been so identified placed on the 303(d) List of impaired waters, states are required to develop a TMDL to address each Pollutant causing impairment. A TMDL defines how much of a Pollutant a waterbody can tolerate and still meet Water Quality Standards. Each TMDL must account for all sources of the Pollutant, including: discharges from wastewater treatment facilities; runoff from homes, forested lands, agriculture, and streets or highways; contaminated soils/sediments, legacy contaminants; on-site disposal systems (septic systems) and aerial deposition.

Federal regulations require that the TMDL, at a minimum, account for contributions from point sources (permitted discharges) and contributions from non-point sources, including natural background. In addition to accounting for past and current activities, TMDLs may consider projected growth that could increase Pollutant levels. TMDLs allocate allowable Pollutant loads to each source, and identify management measures that, when implemented, will assure that Water Quality Standards are attained. State Water Code Section 13000 also requires the Regional Boards to develop implementation plans to define schedules, dischargers, tasks, and other actions necessary to attain Water Quality Standards.

This section summarizes the Permittees programs to comply with TMDL Waste Load Allocations and TMDL implementation plan tasks assigned to the Permittees. It should be noted that TMDLs are waterbody specific, and therefore do not always regulate all of the Permittees in either the SAR or the SMR. Specific Permittees identified as discharging to TMDL regulated waterbodies are identified in Tables 13-1 and 13-2. Existing TMDL Waste Load Allocations and implementation plan tasks assigned to the various Permittees as part of USEPA approved TMDLs are also summarized in Tables 13-1 and 13-2.

Several tables from Chapter 5 of the Santa Ana Region Basin Plan are summarized in this section of the DAMP. However, the Basin Plan is a living document and is amended on occasion. The Basin Plans should always be reviewed for the most accurate and up-to-date information regarding TMDL compliance requirements.

Table 13-1. TMDLs Adopted and Approved by the Regional Board and USEPA and Associated Waste Load Allocations

Waterbody	Pollutant/Stressor	Assigned Dischargers	WLA
Canyon Lake (Resolution R8-2004-0037)	Total Phosphorus – MS4 Discharges	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont	306 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – MS4 Discharges	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont	3,974 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
Lake Elsinore(Resolution R8-2004-0037)	Total Phosphorus – MS4 Discharges	County of Riverside and City of Lake Elsinore	124 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – MS4 Discharges	County of Riverside and City of Lake Elsinore,	349 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
Middle Santa Ana River Reach 3 (Resolution R8-2005-0001)	Pathogen Indicators – MS4 Discharges	County of Riverside, Cities of Corona, Riverside and Norco	Fecal Coliform: log mean less than 200 organisms/100 ml based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 ml for any 30-day period to be achieved as soon as possible, but no later than December 31, 2020

Table 13-2. Adopted TMDLs and Implementation Tasks

TMDL	Implementation Plan Task	Responsible Party
Nutrient TMDLs for Lake Elsinore and Canyon Lake (Resolution R8-2004-0037)	Task 4 – Nutrient Water Quality Monitoring Program for Lake Elsinore, Canyon Lake and the San Jacinto Watershed	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 6 – On site Disposal Systems (Septic System) Management Plan	County of Riverside, Cities of Perris, Moreno Valley, and Murrieta
	Task 7 – Urban Discharges – Revise DAMP and WQMP	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 9 – Lake Elsinore In-Lake Sediment Nutrient Reduction Plan	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 10 – Canyon Lake In-Lake Sediment Treatment Evaluation	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 11 – Watershed and Canyon Lake and Lake Elsinore In-Lake Model Updates	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 12 – Pollutant Trading Plan	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
Middle Santa Ana River Watershed Bacterial Indicator TMDL (Resolution R8-2005-0001)	Task 3 – Develop and Implement Watershed Wide Bacterial Indicator Water Quality Monitoring Program	County of Riverside, Cities of Perris, Moreno Valley, and Murrieta
	Task 4 – Urban Discharges – Develop Urban Source Evaluation Plan, Revise DAMP and WQMP	County of Riverside, Cities of Perris, Moreno Valley, and Murrieta

13.2 TMDL IMPLEMENTATION STRATEGY

USEPA's Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits, 60 Federal Register 43761 (Aug 26, 1996) recognizes the need for an iterative BMP approach to control Pollutants in storm water discharges. In addition, USEPA recommends the use of the term

"phased TMDLs" for TMDLs with significant data uncertainty where the State expects that the loading capacity and allocation scheme will be revised in the near future as additional information is collected[48].

TMDLs are often based on preliminary and incomplete data. Further, the variability in hydrologic systems and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings and load reductions for individual dischargers or groups of dischargers.

The Permittees have continued to work with the Regional Board staff to determine if it is appropriate to implement TMDL Waste Load Allocations through a phased TMDL and/or iterative BMP process. The Regional Board describes the TMDL Waste Load Allocation and implementation requirements in the TMDL implementation plan. TMDL implementation plans assign responsibilities to specific MS4 dischargers to identify sources of impairment, to propose BMPs to address those sources, and to monitor, evaluate and revise BMPs based on the effectiveness of the BMP implementation program. Once a TMDL is approved by USEPA, the Permittees begin efforts, to comply with TMDL Waste Load Allocations as defined by the TMDL implementation plan requirements. In many cases compliance efforts are already underway prior to approval of the TMDL.

Because TMDLs often regulate a broad cross-section of dischargers beyond MS4 permittees, the stakeholders generally form a task force to address implementation plan task assigned to multiple dischargers. A task force utilizes economies of scale for implementing TMDL compliance tasks and assist in the pursuit of grant opportunities. Task forces specifically are useful to develop a regional BMP compliance document, implement regional compliance monitoring, and develop stakeholder consensus on necessary recommendations regarding modification to the TMDL or Basin Plan that are necessary to protect Beneficial Uses or to recognize site specific conditions. Such Basin Plan amendments are usually submitted to the Regional Board through the Basin Plan Triennial Review Process.

13.3 PROGRAMMATIC DAMP COMPLIANCE EFFORTS

The DAMP contains several provisions that are intended to function as essential BMPs for any adopted TMDL. These BMPs form the foundation for compliance with TMDL requirements. Additional BMPs necessary to address specific TMDL Waste Load Allocations and implementation plan tasks are described in the following sections.

Programmatic TMDL BMPs:

- Permittees are required to review their CEQA processes to ensure that related TMDL issues are properly considered and addressed (Section 6.3).
- TMDL compliance requirements are discussed in formalized training prepared for the Permittees (Section 5.5, 6.5, 7.7, and 8.8).

[48] US EPA 2006. Clarification Regarding "Phased" Total Maximum Daily Loads, http://www.epa.gov/owow/tmdl/tmdl_clarification_letter.html

- Pollutants that are impairing downstream Receiving Waters are recommended as a high priority for violations IC/ID activities (Table 3-2).
- New Developments and Significant Redevelopments are required to implement BMPs with a high or medium effectiveness when there is a potential for Pollutants from the project site to aggravate impairments in downstream Receiving Waters (Appendix O – Section 4.3 and 4.5.3). In addition, the Permittees are developing a revised Storm Water Quality BMP Design Handbook that will further promote BMPs that are effective at addressing impairments.
- Section 2.3.5 and Section 2.4.5 summarize existing water quality issues within each watershed.
- Section 13 has been added to the DAMP to describe TMDL implementation.

13.4 LAKE ELSINORE / CANYON LAKE NUTRIENT TMDL

13.4.1 Regional Board Action History

In 1998, the Santa Ana Regional Board listed Lake Elsinore and Canyon Lake as impaired water bodies in the Clean Water Act Section 303 (d) list for excessive levels of nutrients. Lake Elsinore was also listed for low dissolved oxygen among other constituents.

In 2000, the Santa Ana Regional Board initiated the process to develop a nutrient TMDL (with response targets for Chlorophyll *a*, low dissolved oxygen, and ammonia) for Canyon Lake and Lake Elsinore, as required by the federal Clean Water Act and California's Non-point Source Pollution Control Plan. This process included the formation of the Lake Elsinore/Canyon Lake TMDL Workgroup in August 2000, as well as, the development and implementation of various in-lake and watershed water quality monitoring programs.

In December 2004, the Santa Ana Regional Board adopted the proposed Lake Elsinore and Canyon Lake nutrient TMDL Basin Plan Amendment. The Basin Plan Amendment established nutrient Waste Load Allocations and Load Allocations and included an implementation plan. The implementation plan requires stakeholders to develop various nutrient management plans and long term monitoring plans aimed at identifying appropriate lake management measures reducing nutrient discharges to Lake Elsinore and Canyon Lake and assessing the appropriateness of TMDL targets and allocations. Work on the TMDL is on-going through the efforts of the TMDL Task Force.

The Santa Ana Regional Board is in the process of developing additional TMDLs to address the Canyon Lake pathogen impairment and the Lake Elsinore PCB and toxicity impairments.

USEPA recommends the use of the term "phased TMDLs" for TMDLs with significant data uncertainty where the State expects that the loading capacity and allocation scheme will be revised in the near future as additional information is collected. The Lake Elsinore/Canyon Lake TMDL has implemented a phased approach in recognition of the limits of the current data and that optimum strategies for TMDL compliance may change with better data.

13.4.2 TMDL Task Force

Since August 2000, TMDL Task Force efforts have been coordinated and administered through the Lake Elsinore San Jacinto Watersheds Authority (LESJWA), a joint powers authority. As a result of the adoption of the TMDL in 2004 the TMDL dischargers formally organized the existing TMDL stakeholder group into a funded TMDL Task Force in 2006. The purpose of the Task Force is to conduct studies necessary to collect data to analyze the appropriateness of the TMDL, identify in-lake and regional watershed solutions, pursue grants, coordinate activities among all of the various stakeholders, and recommend appropriate revision to the Basin Plan language regarding Lake Elsinore and Canyon Lake based on data collection and analysis.

13.4.3 Lake Elsinore San Jacinto Watersheds Authority's Role

The LESJWA was formed in April of 2000 after California voters passed Proposition 13, a bond measure to fund water projects throughout the state. Proposition 13 specifically earmarked $15 million for LESJWA to implement projects to address the impairments in Lake Elsinore and Canyon Lake. LESJWA is made up of representatives from the Santa Ana Watershed Project Authority, Elsinore Valley Municipal Water District, the City of Lake Elsinore, the City of Canyon Lake and County of Riverside. LESJWA is charged with improving water quality and protecting wildlife habitats, primarily in Lake Elsinore, but also in Canyon Lake and the surrounding watershed.

Several LESJWA projects are central to the stakeholders TMDL compliance strategies. Specific LESJWA projects include:

- Lake Elsinore Aeration System
- Lake Elsinore Wetland Enhancement
- Lake Elsinore Carp Removal
- Lake Elsinore Axial Flow Pumps
- Lake Elsinore Island Wells
- Lake Elsinore Dredging Project

In addition, LESJWA has conducted several studies to evaluate lake conditions, alternative management measures and potential funding mechanism. These efforts for the basis of the ongoing compliance work of the TMDL Task Force. In addition, the TMDL Task Force continues to rely on the LESJWA Technical Advisory Committee for technical guidance.

13.4.4 Permittee Compliance Strategy

13.4.4.1 Implementation Plan

Due to limits in the quality of monitoring data, the Santa Ana Regional Board and dischargers agreed to incorporate USEPA's interim approach for TMDL implementation (60 FR 43761) by proposing a phased implementation of the Canyon Lake and Lake Elsinore TMDL. The TMDL also allows the dischargers until 2020 to comply with nutrient Waste Load Allocations and Load Allocations so that iterative BMP implementation can also be considered. The TMDL Implementation Plan also provides for an initial

phase of data collection and analysis necessary to determine if a Use Attainability Analysis, Site Specific Objective or other regulatory actions such as modifications to TMDL numeric targets, Load Allocations or Waste Load Allocations are appropriate. Preliminary recommendations from the Task Force to the Regional Board are scheduled for 2010.

13.4.4.2 Overall Approach to Achieve Waste Load Allocations

As noted in the Santa Ana Regional Board TMDL Staff Report dated December 17, 2004, the costs to implement watershed based BMPs believed capable of meeting current TMDL requirements is between $2.7 - $40 billion dollars. These costs indicate that achieving the specified Waste Load Allocations for Urban Runoff may be infeasible. In addition, there is no guarantee that such an expenditure on watershed based BMPs would be capable of fully achieving compliance with the adopted Waste Load Allocations. The experts who conducted a peer review of the TMDL on behalf of the Santa Ana Regional Board noted that compliance with the TMDL may be infeasible.

To comply with the Lake Elsinore / Canyon Lake Waste Load Allocations, the Permittees, in conjunction with the TMDL Task Force proposed a phased BMP implementation strategy prioritizing in-lake treatments systems under development through LESJWA and the Task Force over watershed-based BMPs in order to maximize the likelihood for success and cost effectiveness. This strategy would help quantify the effectiveness of in-lake BMPs and focus initial TMDL resources toward BMPs that would most likely produce the greatest gains toward TMDL compliance.

The County of Riverside and City of Lake Elsinore, as member agencies of LESJWA, are also contributing towards the construction of the Lake Elsinore Aeration System and participating in the ongoing operations and maintenance cost of the axial flow pumps and various bio-manipulation projects such as carp removal and wetland enhancements. These projects are expected to jointly achieve the 35% reductions in in-lake phosphorous concentrations required by the TMDL. These projects may attain further reductions that can be used to offset excess nutrient discharges from other sources.

The TMDL Task Force will review the TMDL assumptions and evaluate opportunities for site specific objectives, pollutant trading strategies and integration strategies; that will be coordinated with the development of Basin Plan Amendment language with the RWQCB. If necessary the TMDLs will be revised as part of the RWQCB's Triennial Reviews at a minimum, or no later than by June 2010. In addition, the TMDL requires that models be updated to evaluate appropriateness of Waste Load Allocations and Load Allocations. These models will consider natural background loads, effects of lake water level management activities, changes in land use, changes in water use, hydrologic modifications, impacts of watershed BMPs, and in-lake water quality control projects. These model updates will help the Permittees with adaptive management of the watershed.

The Permittees have also identified feasible watershed-based BMP, such as BMPs for New Development and Significant Redevelopments that are tributary to the lakes to control the discharge of nutrients.

To comply with the initial phase of the TMDL, the Task Force would evaluate attainment of Water Quality Standards by LESJWA projects. The Task Force will also evaluate opportunities for Pollutant trading and additional steps, if required, to achieve Waste Load Allocations. Current Task Force work and studies are intended to be complete by 2010.

The TMDL Task Force or LESJWA have obtained the following grants that help stakeholders to comply with TMDL:

- In January 2002, LESJWA received a Water Quality Planning Program "205(j) Grant" to perform the "Lake Elsinore and Canyon Lake Nutrient Source Assessment," which was completed in January 2003.
- In August 2002, LESJWA obtained Proposition 13 funding to develop a "Nutrient Management Plan", completed in April 2004. This Plan identified alternative implementation measures to control excess nutrients in the watersheds.
- In December 2005, the TMDL Task Force obtained, through the San Jacinto Watershed Council, a Proposition 50 grant to fund data collection.

13.4.4.3 TMDL Task specific to Permittee Dischargers

13.4.4.3.1 Task 6 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan

Task 6 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan requires that no later than 6 months after the effective date of an agreement between the County of Riverside and the Santa Ana Region Regional Water Quality Control Board (RWQCB) to implement regulations adopted pursuant to Water Code Sections 13290-13291.7, or if no such agreement is required or completed, within 12 months of the effective date of these regulations, the County and the cities of Perris, Moreno Valley, and Murrieta shall, as a group, submit a Septic System Management Plan to identify and address nutrient discharges from septic systems within the San Jacinto Watershed. The Septic System Management Plan shall implement regulations adopted by the State Water Resources Control Board pursuant to California Water Code Section 13290 – 13291.7.

Regulations promulgating Sections 13290-13291.7 are still pending. Upon adoption of these regulations by the SWRCB, the named Permittees will develop the required Septic System Management Plan in accordance with Task 6. The Septic System Management Plan may be incorporated into the DAMP and/or Water Quality Management Plan (WQMP) upon its completion.

In the interim, the County of Riverside has adopted Ordinance 856 which prohibits new septic systems in two designated areas of Quail Valley, which is within the San Jacinto Watershed. This prohibition affects 1530 lots, which constitutes 59% of the undeveloped lots in those areas. The Ordinance also mandates the connection of all existing homes in Quail Valley to a sewer system within one (1) year of its availability. In addition to this Ordinance the Department of Environmental Health is refining the review process for septic systems and has drafted revisions to County Ordinance 650 to preclude lots that would be contributory to the surfacing septic waste issue in the region.

In addition, the Permittees have partnered with the San Jacinto River Watershed Council to obtain a Prop 50 IRWM Planning Grant, which includes a task to develop a septic system management plan for the San Jacinto Watershed. The Permittees are using this grant money to initiate the development of the compliance document consistent with the requirements of Task 6. The Prop 50 IRWM Planning Grant is proposed be used to develop a map of areas of concentrated septic systems that may be adversely impacting surface waters or groundwaters within the watershed. Potential mitigation measures for these areas will also be proposed. The Prop 50 IRWM Planning Grant septic system management plan will form the basis for the final Task 6 Septic System Management Plan, which will be completed no later than 6 months after the effective date of an agreement between the County of Riverside and the Santa Ana

Region Regional Water Quality Control Board (RWQCB) to implement regulations adopted pursuant to Water Code Sections 13290-13291.7, or if no such agreement is required or completed, within 12 months of the effective date of these regulations.

13.4.4.3.2 Task 7 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan

Task 7 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan mandates that various Urban Runoff dischargers modify compliance documents as necessary to comply with the Lake Elsinore and Canyon Lake Nutrient TMDL. Tasks 7.1 and 7.2 require the specified Permittees(County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont) to modify the DAMP and WQMP(Appendix O to the DAMP), respectively to address TMDL Implementation Plan requirements. Necessary revisions to comply with Tasks 7.1 and 7.2 are incorporated throughout the DAMP and are summarized in the following paragraphs. Specifically:

- Section 13.4.4.2 summarizes the Permittees strategy for complying with the Lake Elsinore and Canyon Lake TMDL WLA assigned to the specified Permittees.

- Section 13.3 describes programmatic BMPS implemented by the Permittees to address this and other TMDLs, including public education and outreach, inspection and enforcement actions taken by the Permittees. Section 13.4.4.2 and 13.4.4.3 describes the Permittees participation in the Lake Elsinore and Canyon Lake TMDL Task Force and LESJWA and their roles in assisting the Permittees in implementing Tasks 4, 9, 10, 11 and 12 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan.

- Section 13.4.4.5 describes how the Permittees propose to address BMP Effectiveness evaluations.

- Section 13.4.4.6 describes how the Permittees propose to conduct monitoring to determine compliance with Lake Elsinore and Canyon Lake Nutrient TMDL Waste Load Allocations assigned to the Permittees.

- In addition to the compliance programs specified above, the Permittees also implement the following additional compliance programs that manage nutrient discharges to Canyon Lake and Lake Elsinore:

    - The Permittees have coordinated with local sanitary sewer operators to develop a Sanitary Sewer Overflow (SSO) response procedure designed to protect the MS4 from impacts of SSOs (Section 4.7 of the DAMP). In addition, the Permittees have summarized County Health Department regulations related to septic system management.

    - The Permittees implement a comprehensive Household Hazardous Waste collection program (Section 4.8.1 of the DAMP) designed to collect fertilizers among other potential pollutants. These collection programs help to reduce the nutrient loading from urban areas to Lake Elsinore and Canyon Lake.

- Applicable Permittee public works projects are required to comply with WQMP requirements (Section 5.1 of the DAMP). See Section 6.4.3 of the WQMP (Appendix O) for specific WQMP requirements that address the TMDLs.

- Permittee construction projects are required to comply with the provisions of the General Construction Permit, including the preparation of a SWPPP (Section 5.2 of the DAMP). The SWPPP ensures that stormwater and non-stormwater pollutant discharges, including sediments, nutrients, and other pollutants from Permittee construction projects are mitigated.

- The Permittees developed maintenance schedules and report on BMP and MS4 maintenance activities annually (Section 5.3.1 of the DAMP). The maintenance schedules promote proper operation of publicly owned BMPs and MS4 facilities and assist with mitigating pollutant discharges from MS4s and effective pollutant removal from BMPs.

- The Permittees are required to develop, implement and maintain facility specific Pollution Prevention Plans. Section 5.3.2 of the DAMP includes a summary of applicable nutrient-related BMPs to be incorporated into the facility-specific PPPs. Nutrient management measures include BMPs for outdoor material storage, building and grounds maintenance, housekeeping practices, landscape maintenance, and water and sewer utility maintenance. Additional BMPs are identified and incorporated as necessary to address unique discharges from the facility.

- During General Plan updates, the Permittees are asked to evaluate their General Plan's ability to address several policy questions including "Are there existing or proposed TMDLs or other such regulations pertaining to receiving waters in the jurisdiction?" If so, the Permittees are asked to consider additional watershed protection principals and objectives for managing Urban Runoff (Section 6.2 of the DAMP).

- The Permittees have implemented procedures to ensure that new development and redevelopment projects address their water quality impacts (Section 6.4). These procedures include requiring developers to identify the impacts of their projects, propose appropriate BMPs to mitigate those impacts, and identify perpetual maintenance mechanisms to ensure that those BMPs will continue to function throughout the life of the development. Requirements for project types rising to WQMP status are addressed in Section 6.4.3 of the WQMP (Appendix O). Projects not rising to WQMP status, defined as "Other Development Projects" in DAMP Section 6.4.4, are also required to mitigate their impacts. Section 6.4.4 specifically notes that Other Development Projects are required to implement Site Design BMPs and Source Control BMPs. Other Development Projects may also be required to implement Treatment Control BMPs if they discharge Urban Runoff to Receiving Waters listed as impaired on the State Board's 303(d) List.

- The WQMP is designed to specifically address the TMDL requirements. Per Provision VIII.B.1 of the MS4 Permit, the Permittees must require developments of the applicable categories to implement a WQMP. Applicable projects must complete a project-specific WQMP. In the project-specific WQMP the project proponents must characterize the development site, including identification of any pollutants that may be generated by the development and legacy pollutants from previous land uses, identify any 303(d) listed waterbodies or TMDL regulated Receiving Waters within the Watershed to which they are tributary, and compare the list of pollutants for which the Receiving Waters are

impaired with the pollutants expected to be generated by the Project (Section 4.3 of the WQMP). Pollutants associated with impairments must implement medium or high effectiveness BMPs as defined by Table 3 of the WQMP. In addition, developments must implement Site Design BMPs and Source Control BMPs designed to reduce nutrient discharges from stormwater discharges and prevent non-stormwater discharges. Site Design BMPs include minimizing Urban Runoff, conserving natural areas and minimizing directly connected impervious areas. Source Control BMPs include resident education (including garden and lawn care guides, pet waste brochures and HHW/ABOP event brochures), irrigation system and landscape maintenance restrictions, common area litter control, drainage facility inspection and maintenance, wash water controls for food preparation areas, and properly designed trash storage areas and outdoor material storage areas. Developers must also propose adequate operation, maintenance and funding mechanisms to ensure the efficacy of the BMPs for the life of the development.

- The Permittees are also developing new, more comprehensive BMP guidance for use by the Permittees and the development community to assure compliance with the nutrient WLAs for Urban Runoff. The revised guidance will focus on landscape based BMPs with infiltration components. These BMPs will be more effective at addressing nutrient sources from new development by reducing runoff volume and trapping nutrients in sand media. The Permittees are also reviewing BMP guidance recently issued by Caltrans that may more effectively address nutrient treatment and removal. The guidance will include detailed design criteria to assist in ensuring the ongoing functionality of BMPs. The Permittees expect to complete the proposed guidance by October 1, 2008.

- Construction sites that disturb an area greater than one acre and are located adjacent to, within 200 feet of, or directly discharge to an identified impaired waterbody within the Permit area are assigned a high priority for wet weather inspections (Section 7.7 of the DAMP).

- The Permittees are required to inspect a number of industrial and commercial businesses including nurseries, greenhouses, landscape and hardscape installation business base of operations, restaurants, and facilities handling hazardous wastes. The Permittees review the activities of these businesses to ensure compliance with local stormwater ordinances and the NPDES MS4 Permit. Inspectors specifically look for observations of non-stormwater discharges, potential illicit connections, and illegal discharges to the MS4, and for implementation and maintenance of appropriate minimum BMPs, including a quantitative assessment of the effectiveness of the BMPs implemented. Appropriate education materials are also distributed (Section 8 of the DAMP).

13.4.4.4 Other TMDL Tasks Including Permittee Dischargers

The following tasks outlined in the Lake Elsinore/Canyon Lake TMDL[49] are assigned to a number of stakeholders in the TMDL, including specific Permittees. Compliance documents are being prepared through the TMDL Task Force to collectively comply with the TMDL. The tasks are outlined in Table 13.2 as well as listed below:

[49] http://www.sawpa.org/tmdl/Lake_elsinore_Canyon_lake.html

- Task 4 – Nutrient Water Quality Monitoring Program for Lake Elsinore, Canyon Lake and the San Jacinto watershed
- Task 9 – Lake Elsinore In-Lake Sediment Nutrient Reduction Plan
- Task 10 – Canyon Lake In-Lake Sediment Treatment Evaluation
- Task 11 – Watershed and Canyon Lake and Lake Elsinore In-Lake Model Updates
- Task 12 – Pollutant Trading Plan

13.4.4.5 Effectiveness Analysis

The existing effectiveness and qualitative assessments described in Section 12 of the DAMP meet TMDL BMP evaluation requirements. In summary, the Permittees annually review their programs for indications of internal process/procedure deficiencies that need to be addressed to properly implement specified BMPs. Every five years as part of the ROWD the Permittees evaluate the overall effectiveness of their MS4 programs, including attainment of specified Waste Load Allocations and TMDL implementation plan requirements and make appropriate changes to MS4 Permit compliance programs.

13.4.4.6 Monitoring for Compliance with the TMDL

Urban Waste Load Allocation compliance monitoring is achieved through Task 4 of the TMDL Implementation Plan, which requires three separate monitoring programs (watershed-wide, Lake Elsinore, and Canyon Lake monitoring programs). The three monitoring programs are administered by the TMDL Task Force to determine compliance with TMDL Waste Load Allocations and Load Allocations. The monitoring program is supported by District staff and funding from designated Permittees. The TMDL Task Force prepares and submits annual reports on behalf of the Permittees.

In addition, the Permittees' NPDES MS4 Monitoring Program also collects data on nutrient discharges. The Permittees also participate in regional monitoring efforts sponsored by the Storm Water Monitoring Coalition, the Southern California Coastal Watershed Research Group, California Stormwater Quality Association, and other groups as appropriate. Data and conclusions from these programs are analyzed and summarized as part of the Permittees' Annual Monitoring Reports.

13.5 THE MIDDLE SANTA ANA RIVER TMDL

13.5.1 Regional Board Action History

In August 2001, the Santa Ana Regional Board initiated TMDL development to address the excess levels of pathogen indicators in Reach 3 of the Santa Ana River, Cucamonga Creek, and Mill Creek. This effort included the formation of the Middle Santa Ana River TMDL Workgroup. This workgroup (which includes representatives from cities in Riverside, San Bernardino, and Los Angeles counties, the Counties of Riverside and San Bernardino, agriculture and dairy operators, and environmental groups) worked in cooperation with Santa Ana Regional Board staff to assess pathogen indicator sources to the impaired waterbodies and identify potential mitigation measures.

The objectives of the workgroup efforts include the development and implementation of a water quality monitoring program to evaluate in-stream "pathogen indicator" concentrations. In addition, a field survey

to evaluate the extent, frequency, and degree to which these waterbodies are used by the public for recreational activities (REC-1 and REC-2). Funding for this project has been provided in full or in part through an agreement with the State Board pursuant to the Costa-Machado Water Act of 2000 (Proposition 13) and any amendments thereto for the implementation of California's Nonpoint Source Pollution Control Program.

Beginning in February 2002, the workgroup developed and implemented an extensive pathogen water quality monitoring program. Samples were collected by Santa Ana Regional Board staff and stakeholder agencies at 10-13 locations on weekly basis during nine 30-day sampling periods. These sampling periods occurred during February, March, July and September of 2002, January and March of 2003, and from January through mid-April 2004. Agencies participating in the monitoring program included San Bernardino County Flood Control District, City of Riverside, Orange County Water District, Inland Empire Utilities Agency, and Chino Basin Watermaster. Results of this program verified significant impairments to the identified water bodies and established the basis of the Santa Ana Regional Board TMDL report.

The TMDL Workgroup also conducted a beneficial use survey of the watershed as part of the data collection effort to support the development of TMDLs for the Middle Santa Ana River watershed. The primary objective of this effort was to collect data to evaluate the extent, frequency, and degree to which the Santa Ana River channel and its Chino Basin tributaries are used by the public for recreational activities (REC-1 and REC-2). The Middle Santa Ana River TMDL was adopted by the Regional Board on August 26, 2005.

13.5.2 TMDL Task Force

In 2002 the stakeholder groups formed a TMDL Task Force. TMDL Task Force efforts have been coordinated and administered through the Santa Ana Watershed Project Authority (SAWPA) a joint powers authority. SAWPA jurisdiction extends throughout the Santa Ana watershed, crossing over multiple jurisdictional lines. Their jurisdictional scope and expertise have been instrumental in carrying out interagency functions. The purpose of the Task Force is to conduct studies necessary to collect data to analyze sources of impairments and potential mitigation measures, pursue grants, and coordinate activities among all of the various stakeholders.

The TMDL Implementation Plan also provides for an initial phase of data collection and analysis necessary to determine if a Use Attainability Analysis, Site Specific Objective or other regulatory actions such as modifications to TMDL numeric targets, Load Allocations or Waste Load Allocations are appropriate. The Storm Water Quality Standards Task Force (SWQSTF) was created to reevaluate Water Quality Standards as they relate to storm water and dry weather flows within the Watershed necessary to protect REC-1 beneficial uses. Changes to the Water Quality Standards and an evaluation of beneficial uses would be incorporated into the Basin Plan through the Triennial Review process.

A $600,000 grant for this TMDL has been received to be used primarily for monitoring efforts. Currently a source assessment is underway to identify urban sources. In addition a Use Attainability Analysis has been conducted to very recreational uses and water contact recreations that are occurring in waters that impact the Santa Ana River. Monitoring efforts will continue to be developed through stakeholder groups.

13.5.3 Permittee Compliance Strategy

13.5.3.1 Implementation Plan

The TMDL recognized the efforts to amend REC-1 Water Quality Standards by the SWQSTF. Therefore, per USEPA guidance, the TMDL is phased. It is expected that the SWQSTF will change the Water Quality Standards and Beneficial Uses through the Basin Plan's Triennial Review process. Phase 1 is a data collection effort. In order to properly channel funds to efforts that will result in the greatest benefit toward TMDL compliance, Phase 1 of the TMDL is pending results from the SWQSTF. Phase 2 is implementation of waste load and Load Allocation compliance strategies, which will follow Phase 1 tasks and are due to be completed by 2020.

13.5.3.2 Overall Approach to Achieve Waste Load Allocations

Once the TMDL and basin plan amendments have been adopted, the specific tasks that are assigned to all stakeholders including Permittees will be identified in this section, per the Implementation Plan.

13.5.3.3 TMDL Task specific to Permittee Dischargers

Once the TMDL and basin plan amendments have been adopted, the specific tasks that are assigned to all stakeholders including Permittees will be identified in this section, per the Implementation Plan.

13.5.3.4 Other TMDL Task which include Permittee Dischargers

Once the TMDL and basin plan amendments have been adopted, the specific tasks that are assigned to all stakeholders including Permittees will be identified in this section, per the Implementation Plan.

13.5.3.5 Effectiveness analysis

The existing effectiveness and qualitative assessments described in Section 12 of the DAMP meet TMDL BMP evaluation requirements. In summary, the Permittees annually review their programs for indications of internal process/procedure deficiencies that need to be addressed to properly implement specified BMPs. Every five years as part of the ROWD the Permittees evaluate the overall effectiveness of their MS4 programs, including attainment of specified Waste Load Allocations and TMDL implementation plan requirements and make appropriate changes to MS4 Permit compliance programs.

13.5.3.6 Monitoring for TMDLs

Urban Waste Load Allocation compliance monitoring is achieved through the TMDL Implementation Plan. The monitoring program is administered by the TMDL Task Force to determine compliance with TMDL Waste Load Allocations and Load Allocations. The monitoring program is supported by District staff and funding from the Permittees. The TMDL Task Force prepares and submits annual reports on behalf of the Permittees.

In addition, the Permittees' NPDES MS4 Monitoring Program also collects data on pathogen discharges. The Permittees also participate in regional monitoring efforts sponsored by the Storm Water Monitoring Coalition, the Southern California Coastal Watershed Research Group, California Stormwater Quality Association, and other groups as appropriate. Data and conclusions from these programs are analyzed and summarized as part of the Permittees' Annual Monitoring Reports.

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Introduction

One of the fundamental values of the Vision for Riverside County highlights the importance of safety to the people of Riverside:

> *"We acknowledge security of person and property as one of the most basic community needs and commit to designing our communities so that vulnerability to natural and man made hazards, as well as criminal activities, is anticipated and kept to a minimum."*

This "value" underlies the policy direction of the Safety Element and is further defined by the following Vision statement:

> *"Considerable protection from natural hazards such as earthquakes, fire, flooding, slope failure, and other hazardous conditions is now built into the pattern of development authorized by the General Plan."*

Based on the direction provided by the Vision, and in compliance with state law, the primary objective of the Safety Element is to "reduce death, injuries, property damage, and economic and social impact from hazards".

The Safety Element serves the following functions:

- Develops a framework by which safety considerations are introduced into the land use planning process;
- Facilitates the identification and mitigation of hazards for new development, and thus strengthens existing codes, project review, and permitting processes;
- Presents policies directed at identifying and reducing hazards in existing development; and
- Strengthens earthquake, flood, inundation, and wildland fire preparedness planning and post-disaster reconstruction policies.

RELATION TO OTHER DOCUMENTS

Technical Background Report

The Safety Element represents an extensive effort to reduce the impacts of future disasters in Riverside County. The Safety Element Technical Background Report (Appendix H), is a comprehensive, up-to-date assessment of natural and man-made hazards in the County, including, but not limited to: earthquakes, landslides, subsidence/settlement, floods, inundation, and wildland fire. The report serves as the foundation for the Safety Element and includes detailed Geographic Information System (GIS) hazard mapping and analyses.

The following sections of the Safety Element summarize mitigation goals, specific policies, and key topics identified in the Technical Background Report. Issues and policies are organized by the following topics:

- Seismic Hazards;
- Slope and Soil Instability Hazards;
- Flood and Inundation Hazards;
- Fire Hazards;
- Hazardous Waste and Materials; and
- Disaster Preparedness, Response, and Recovery

Other General Plan Elements

The Safety Element is only one of several components of the General Plan. Other social, economic, political and aesthetic factors must be considered and balanced with safety needs. Rather than compete with the policies of related elements, the Safety Element provides policy direction and designs safety improvements that complement the intent and policies of other General Plan elements.

Crucial relationships exist between the Safety Element and the other General Plan elements. How land uses are determined in areas prone to natural hazards, what regulations limit development in these areas, and how hazards are mitigated for existing development, are all issues that tie the elements together. For instance, Land Use Element diagrams and policies must consider the potential for various hazards identified in the Safety Element and must be consistent with the policies to address those hazards. The Multipurpose Open Space Element is also closely tied to the Safety Element. Floodplains, for example, are not only hazard areas, but also often serve as sensitive habitat for threatened or endangered species, or provide recreation or passive open space opportunities for residents and visitors. As such, flood and inundation policies balance the need to protect public health and safety with the need to protect habitat and open space. Safety Element policies, especially those concerning evacuation routes and critical facilities, must also be consistent with those of the Circulation Element.

Area Plans

Together, the Safety Element and Technical Background Report provide a comprehensive set of hazard maps and policies that cover all unincorporated areas of the County. The 19 area plans described in the General Plan, Chapter 1 Introduction, provide additional policy direction, as appropriate, as well as depict major hazards on more detailed maps than the countywide maps can provide. They show more precisely where hazard areas are, providing a more visible link between geography, land use, and policies. For additional policy guidance in specific areas, please refer to the applicable area plan.

Setting

Historically, Riverside County has had the second highest number of state and federally-declared disasters in California. Which hazard poses the greatest risk? Which threat renders Riverside County most vulnerable? How bad will it get, how often? These deceptively simple questions lie at the heart of risk management.

For example, Riverside County has suffered six fire disasters since 1970. Much of the County is at risk from wildland fire, which is a severe and growing problem. Meanwhile, throughout the 20th century, floods caused by storms have been the number one natural disaster in the United States, for lives lost and property damage. Since 1975, Riverside County has suffered eleven floods severe enough to merit Gubernatorial or Presidential declarations of disaster. Inundation due to dam failure, while unlikely, would have even more devastating consequences. Failure of unstable ground, whether due to collapsing or expanding soil, or slope failures such as landslides, debris flows and rockfalls, can cause localized but expensive damage. Areas prone to unstable soil and slopes can generally be predicted, but, absent mitigation and maintenance, such failures can be frequent and recurring.

All of these hazards are costly and potentially life-threatening and affect significant portions of Riverside County. Some hazards must be avoided entirely, while the potential impacts of others can be mitigated by special building techniques. In still other cases, safety-oriented organizations, such as Fire Safe, can provide assistance in educating the public and promoting practices that contribute to improved public safety. With existing development in areas prone to these disasters, an aggressive program is needed to persuade property owners to mitigate, or to sell the property to the County or other entity, or to modify use of the property.

Major earthquakes will cause disasters less frequently than other hazards, yet they have the most serious life, safety, and economic consequences. A mere tens of seconds of strong ground shaking can devastate large areas of the County and overwhelm the County's ability to respond. Economic consequences could last for years. A large earthquake can also trigger occurrences of most of the other disasters considered in this Safety Element.

Because major earthquakes are such high-consequence events, because relatively easy land use mitigation efforts do not considerably reduce earthquake hazards, and because earthquakes have far-reaching consequences outside of damaged areas, much legislation has been written to reduce society's vulnerability to such hazards. For the same reasons, many of the Safety Element policies address earthquake hazards.

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Issues and Policies

The following issues and policies are organized under the headings of "General" - those that apply to all natural hazards and "Hazard Specific" - those that only apply to a specific hazard type (i.e., flood or seismic). Those policies that are "General" are subcategorized by types of policies: code conformance, special development regulations, or hazard reduction. Following the general policies are those that are categorized by specific hazard types. Additional safety policies that only apply to a specific geographical area of the County may be found in any of the General Plan's 19 area plans.

In addition to this Safety Element, land use and development in Riverside County are regulated by the other elements and area plans of the General Plan, County Building and Grading Ordinances, the California Environmental Quality Act (CEQA), and specific resolutions adopted by the County Board of Supervisors.

The General Plan policy and implementation item reference system:

Identifies which element contains the Policy, in this case the Land Use Element, and the sequential number.

LU 1.3

Neighborhood
Commercial uses should be located near residential uses.

(AI 1 and AI 4)

Reference to the relevant Action Items contained in the implementation Program

GENERAL ISSUES & POLICIES

Code Conformance & Development Regulations

The County Department of Building and Safety provides technical expertise in reviewing and enforcing the County Building and Fire Codes. These codes establish site-specific investigation requirements, construction standards, and inspection procedures to ensure that development does not pose a threat to the health, safety and welfare of the public. Every three years, the County's Building and Fire Codes are adapted from the Uniform Building and Fire Codes. They contain baseline minimum standards to guard against unsafe development. As discussed in the Technical Background Report, project variables may modify the implementation of a particular standard.

At a minimum, it is imperative to enforce the most recently adopted regulatory codes for new development and significant redevelopment, including the County's Land Use Ordinance and Land Division Ordinance, which support the Building and Fire Codes. The California Environmental Quality Act (CEQA) adds another level of safety review, requiring that environmental constraints be considered prior to approval of significant projects. Additional guidelines and standards are introduced through the Safety Element. Table S-1, Multi-Hazard Safety Actions, identifies the relationship between these various regulatory and planning tools and the hazards that they address.

Table S-1
Multi-Hazard Safety Actions

Hazards		Risk			Scope of Risk*	Code Conformance and Hazard Management#			
		Low	Moderate	High		Building	Fire	Special Development	Hazard Reduction
EARTHQUAKE DAMAGE	Strong Ground Motion			X	Countywide/Regional	X	X	X	X
	Fault Rupture			X	Local			X	X
	Liquefaction		X	X	Local			X	X
	Settlement/Subsidence		X		Local	X		X	X
	Landslide		X		Local	X		X	X
	Dam/Reservoir Inundation	X			Local			X	X
	Building Damage		X	X	Countywide/Regional	X	X	X	X
	Infrastructure/Utilities Damage		X	X	Countywide/Regional	X	X	X	X
SLOPE AND FOUNDATION STABILITY	Deep-Seated Landslide	X			Local	X		X	X
	Soil Slumps		X		Local	X		X	X
	Settlement/Subsidence		X		Local	X		X	X
INUNDATION	Stream Flooding			X	Local			X	X
	Dam/Reservoir Inundation	X			Local			X	X
FIRE	Wildland Fire			X	Local/Countywide	X	X	X	X
	Industrial Fire		X		Local	X	X	X	
	Residential Fire		X		Local	X	X		

***Scope of Risk:**

Local - Hazard impacts localized or site-specific portion of County.
Local/Countywide - Hazard impacts a significant portion or all of County.
Countywide/Regional - Hazard affects large multi-jurisdictional area.

#Code Conformance and Hazard Management Options:

Special Development Regulations reinforce and augment existing codes.
Hazard Reduction Programs are designed to improve the safety of existing development.
Special Development Regulations and Hazard Reduction policies exceed current code requirements and are implemented by this Safety Element.

Special development regulations can reinforce and augment existing code standards by raising the level of hazard-conscious project design and mitigation engineering. Examples include additional geologic/geotechnical investigation and additional reinforcement of foundations in areas of potential ground failure. While foundation investigations are required by the County's Building Code, it is important to emphasize expected levels of investigation and protection. Furthermore, some requirements that may only apply to critical facilities, such as detailed seismic analyses, could be expanded to include other structures and lifelines. Where engineering methods cannot mitigate the hazards, avoidance of the hazard is appropriate, such as where ground rupture along active or potentially active fault traces are identified during project investigation. Special minimum setbacks away from active faults, which are already required for critical facilities, can also be defined for other structures and lifelines.

Policies:

S 1.1 Mitigate hazard impacts through adoption and strict enforcement of current building codes, which will be amended as necessary when local deficiencies are identified.

S 1.2 Enforce state laws aimed at identification, inventory, and retrofit of existing vulnerable structures.

Hazard Reduction

Hazard reduction programs are designed to improve the safety of existing development. For example, older structures, built to superseded code standards, may need seismic upgrading. Owners of older structures may voluntarily upgrade, be strongly persuaded to upgrade, or be required to do so. Additional examples of hazard reduction programs include:

- Strengthening pipelines and developing emergency back-up capability by public utilities serving the County;
- Conducting regular fire safety inspections and fire flow tests to identify areas with cracked or damaged water lines;
- Encouraging the construction of auxiliary water systems to supplement existing water lines. This will help ensure adequate water flow for fire suppression even if main water lines are damaged. Gravity-fed or generator-operated pumps for swimming pools and tanks can also supplement flow;
- Planning for emergency response at the government and individual level to reduce the risk to the public from hazards; and
- Identifying unsafe structures and posting public notices.

To reduce hazards in areas mapped as hazard zones, the County of Riverside uses a combination of methods:

- Special investigation and reporting requirements;
- Land use planning;
- Real-estate disclosure;
- Incentives to encourage mitigation;

- Public education; and
- Disincentives including fines and fees for those who choose to take the risk of that hazard.

Policies:

S 1.3 Require structural and nonstructural assessment and, when necessary, mitigation, of other types of potentially hazardous buildings that: 1) are undergoing substantial repair or improvements resulting in more than half of the assessed property value, or 2) are considered an element of blight in a redevelopment district. Potential implementation measures could include: (AI 81, 88, 89, 90, 100)

a. Use of variances, tax rebates fee waivers, credits, or public recognition as incentives.
b. Inventory and structural assessment of potentially hazardous buildings based on screening methods developed by the Federal Emergency Management Agency.
c. Development of a mandatory retrofit program for hazardous, high occupancy, essential, dependent or high-risk facilities.
d. Development of a mandatory program requiring public posting of seismically vulnerable buildings.

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Lessons learned from recent earthquakes and extensive scientific research conducted as part of the National Earthquake Hazard Reduction Program (NEHRP) have led to significant improvements in building codes. Adopted by the County of Riverside in July 1999, the 1997 Uniform Building Code (UBC) is a prime example of an effort to reduce hazard risks in response to recent earthquakes. Seismic codes will continue to improve under the International Building Code, which replaced the UBC in the year 2000.

★

Building damage is commonly classified as either ***structural*** *or* ***non-structural****. Structural damage impairs the building's structural support. This includes any vertical and lateral force-resisting systems, such as frames, walls, and columns. Non-structural damage does not affect the integrity of the structural support system. Non-structural damage includes broken windows, collapsed or rotated chimneys, and fallen ceilings.*

HAZARD SPECIFIC ISSUES AND POLICIES

Seismic Hazards

While Riverside County is at risk from many natural and man-made hazards, the event with the greatest potential for loss of life or property and economic damage is an earthquake. This is true for most of southern California, since damaging earthquakes are frequent, affect widespread areas, trigger many secondary effects, and can overwhelm the ability of local jurisdictions to respond. In Riverside County, earthquake-triggered geologic effects include ground shaking, fault rupture, landslides, liquefaction, subsidence, and seiches, all of which are discussed in the Safety Element Technical Background Report, Appendix H. Earthquakes can also cause human-made hazards such as urban fires, dam failures, and toxic chemical releases.

Earthquake risk is very high in the most heavily populated western portion of the County and the Coachella Valley, due to the presence of two of California's most active faults, the San Andreas and San Jacinto. Risk is moderate in the eastern portion of the County beyond the Coachella Valley.

Most of the loss of life and injuries from earthquakes are due to damage and collapse of buildings and structures. Building codes have generally been made more stringent following damaging earthquakes. However, in the County of Riverside, structures built prior to improved building codes have generally not been upgraded to current standards, and are vulnerable in earthquakes.

Comprehensive hazard mitigation programs that include the identification and mapping of hazards, prudent planning and enforcement of building codes, and expedient retrofitting and rehabilitation of weak structures can significantly reduce the scope of an earthquake disaster.

The intent of these policies is to minimize the impact of earthquakes on Riverside County's citizens, property, and economy.

Fault Rupture

Primary ground damage due to earthquake fault rupture typically results in a relatively small percentage of the total damage in an earthquake, but proximity to a rupturing fault can cause profound damage. It is difficult to reduce this hazard through structural design. The primary mitigative technique is to set back from, and avoid, active faults. The challenge comes in identifying all active faults. Faults throughout southern California have formed over millions of years. Some of these faults are generally considered inactive under the present geologic conditions; that is, they are unlikely to generate further earthquakes. Other faults are known to be active. Such faults have either generated earthquakes in historical times (within the last 200 years), or show geologic and geomorphic indications of relatively recent movement. Faults that have moved in the relatively recent geological past are generally presumed to be the most likely candidates to generate damaging earthquakes in the lifetimes of residents, buildings, or communities (Figure S-1).

The State Alquist-Priolo Earthquake Fault Zoning Act (A-P Act) was passed in 1972 to mitigate the hazard of surface faulting. Surface rupture is the most easily avoided seismic hazard. The main purpose of the A-P Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The A-P Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. Alquist-Priolo Earthquake Fault Zones have been designated by the California Division of Mines and Geology for the Elsinore, San Jacinto, and San Andreas fault zones in Riverside County.

Within the rapidly growing county, State A-P mapping has not kept pace with development. The County of Riverside has zoned fault systems and required similar special studies prior to development. These are referred to as County Fault Zones on Figure S-2 and in the Technical Background Report. They generally represent zones that have been identified from groundwater studies, and should be viewed as doubtful. However, until solid field evidence is generated to prove or disprove their existence, they should continue to be considered a hazard.

Within A-P and County Fault Zones, proposed tracts of four or more dwelling units must investigate the potential for and setback from ground rupture hazards. This is typically accomplished by excavation of a trench across the site, determining the location of faulting, and establishing building setbacks.

As there are many active faults in Riverside County, with new fault strands being continually discovered, all proposed structures designed for human occupancy should be required to investigate the potential for and setback from ground rupture. Also of concern are structures, not for human occupancy, that can cause harm if damaged by an earthquake, such as utility, communications, and transportation lifelines.

The County regulates most development projects within earthquake fault zones (Figure S-2). Projects include all land divisions and most structures for human occupancy. Exempted projects include single family, wood-frame and steel-frame dwellings that are one or two stories, are not part of a development of four units or more, and are not located within 50 feet of a fault.

Before a project can be permitted within an A-P Earthquake Fault Zone, County Fault Zone, or within 150 feet of any other potentially active or active fault mapped

in published United States Geological Survey (USGS) or California Division of Mining and Geology (CDMG) reports, a geologic investigation must demonstrate that proposed buildings will not be constructed across active faults. A site-specific evaluation and written report must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy must be set back 50 feet from the fault, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented to support a different setback.

Policies:

S 2.1 Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies: (AI 80, 91)

a. Require geologic studies or analyses for critical structures, and lifeline, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the Earthquake Fault Studies Zones map.
b. Require geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented. The County may require geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.
c. Require that lifelines be designed to resist, without failure, their crossing of a fault, should fault rupture occur.
d. Support efforts by the California Department of Conservation, Division of Mining and Geology to develop geologic and engineering solutions in areas of disseminated ground deformation due to faulting, in those areas where a through-going fault cannot be reliably located.
e. Encourage and support efforts by the geologic research community to define better the locations and risks of County faults. Such efforts could include data sharing and database development with regional entities, other local governments, private organizations, utility agencies or companies, and local universities.

Critical Facilities: Facilities housing or serving many people, which are necessary in the event of an earthquake or flood, such as hospitals, fire, police, and emergency service facilities, utility "lifeline" facilities, such as water, electricity, and gas supply, sewage disposal, and communications and transportation facilities.

An example of an area of disseminated ground deformation is the Newport- Inglewood Fault through the northern part of Long Beach, California, where young river sediments bury the fault faster than the fault can reassert itself every thousand years or so with an earthquake. Potential examples in Riverside County could include several locations along the Elsinore Fault, the northern San Jacinto Fault, some of the faults in the Temecula area, and some of the secondary strands of the San Andreas Fault in Indio.

Seismically-Induced Liquefaction, Landslides, and Rock Falls

Portions of the County of Riverside are susceptible to liquefaction and landslides or rockfall, which are very destructive secondary effects of strong seismic shaking. This section addresses these hazards as they relate specifically to seismic events. General slope and soil instability hazards, which can occur in the absence of seismic shaking, are addressed separately in following sections of the Safety Element.

Figure S- 1 Mapped Faulting in Riverside County

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Figure S- 2 Earthquake Fault Study Zones

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Liquefaction occurs primarily in saturated, loose, fine- to medium-grained soils in areas where the groundwater table is within approximately 50 feet of the surface. Shaking causes the soils to lose strength and behave as liquid. Excess water pressure is vented upward through fissures and soil cracks, and a water-soil slurry bubbles onto the ground surface. Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, and flow failures or slumping. Site-specific geotechnical studies are the only practical and reliable way of determining the specific liquefaction potential of a site; however, a determination of general risk potential can be provided based on soil type and depth of groundwater. Areas identified as susceptible to liquefaction are identified in Figure S-3.

As demonstrated by past earthquakes, seismic settlement is primarily damaging in areas subject to differential settlement. These can include cut/fill transition lots built on hillsides, where a portion of the house is built over an area cut into the hillside while the remaining portion of the house projects over man-made fill. During an earthquake, even slight settlement of the fill can lead to a differentially-settled structure and significant repair costs.

Seismically-induced landslides and rock falls should be expected throughout the County in a major earthquake. Field investigation enables identification of slide-prone slopes before an earthquake occurs. Landslides and rock falls occur most often on steep or compromised slopes. Factors controlling the stability of slopes include: 1) slope height and steepness; 2) engineering characteristics of the earth materials comprising the slope; and 3) intensity of ground shaking. Figure S-4 maps areas with varying levels of earthquake-induced slope instability.

Pseudo-static stability analyses requires detailed geotechnical investigations, including subsurface soil sampling and laboratory testing.

Policies:

S 2.2 Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement as part of the environmental and development review process, for any structure proposed for human occupancy, and any structure whose damage would cause harm. (AI 81)

S 2.3 Require that a State-licensed professional investigate the potential for liquefaction in areas designated as underlain by "Susceptible Sediments" and "Shallow Ground Water" for all general construction projects (Figure S-3).

S 2.4 Require that a State-licensed professional investigate the potential for liquefaction in areas identified as underlain by "Susceptible Sediments" for all proposed critical facilities projects (Figure S-3).

S 2.5 Require that engineered slopes be designed to resist seismically-induced failure. For lower-risk projects, slope design could be based on pseudo-static stability analyses using soil engineering parameters that are established on a site-specific basis. For higher-risk projects, the stability analyses should factor in the intensity of expected ground shaking, using a Newmark-type deformation analysis.

S 2.6 Require that cut and fill transition lots be over-excavated to mitigate the potential of seismically-induced differential settlement.

S 2.7 Require a 100% maximum variation of fill depths beneath structures to mitigate the potential of seismically-induced differential settlement.

S 2.8 Encourage research into new foundation design systems that better resist the County's climatic, geotechnical, and geological conditions. (AI 104)

Slope & Soil Instability Hazards

Covering approximately 7,310 square miles and spanning from the Colorado River at the Arizona border to within ten miles of the Pacific Ocean, Riverside County contains a variety of topographical and geological conditions that pose various slope and soil instability hazards. Mass wasting, which includes landslides, rockfalls, and debris flow, is associated with the mountainous regions primarily composed of igneous and metamorphic rock, while subsidence and hydroconsolidation are concentrated in valleys filled with sediments.

The intent of these policies is to reduce the occurrence and costs of slope and soil instability hazards, and eliminate human contribution to their occurrence.

★

In a typical year in the United States, mass wasting causes 25 to 50 deaths and over $1.5 billion in damages.

★

The greatest southern California debris flow events of the 20th century occurred in 1934, 1938, 1969 and 1978, but there is generally a destructive event each decade.

Landslides, Rockfalls, and Debris Flows

Landslides, rockfalls, and debris flows occur continuously on all slopes; some processes act very slowly, while others occur very suddenly, often with disastrous results. As human populations expand over more of the land surface, these processes become an increasing concern.

There are predictable relationships between local geology and landslides, rockfalls and debris flows. Knowledge of these relationships can improve planning and reduce vulnerability. Slope stability is dependent on many factors and their interrelationships, including rock type, pore water pressure, slope steepness, and natural or man-made undercutting. Slope and geologic conditions are identified in Figures S-5 and S-6, respectively.

For new development, the County Building and Safety Department enforces current building codes. Building codes establish specific site investigation requirements and define various standards by which hillside projects are assessed.

Landslide Management Zones (LMZs) identify regions susceptible to slope instability. This instability can include deep-seated landslides, rockfalls, soil slumps, and debris flows. Without the presence of extensive flood control devices, including large debris basins, the areas outlined by an LMZ may be subject to debris flow inundation. Most often, debris flow inundation results in roadways and improvements blocked by boulders. Rarely do debris-flow-generating storms affect the entire county.

Most of the area within Landslide Potential Management Zones of the County, as shown on Figure S-4, are designated for open space or rural development. Investigations and stability evaluations should be conducted prior to any proposed grading, if conditional use permits or variances are granted. Within a Landslide Potential Management Zone, mitigation of existing and/or potential slope problems can be required when substantial improvements are proposed.

Figures S- 3 Generalized Liquefaction

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Figure S- 4 Earthquake-Induced Slope Instability Map

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Figure S- 5 Regions Underlain by Steep Slopes

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Figure S- 6 Engineering Geologic Materials Map

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Policies:

S 3.1 Require the following in landslide potential hazard management zones, or when deemed necessary by the California Environmental Quality Act: (AI 104)

a. Preliminary geotechnical and geologic investigations.
b. Evaluations of site stability, including any possible impact on adjacent properties, before final project design is approved.
c. Consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications be prepared by State-licensed professionals.

S 3.2 Require that stabilized landslides be provided with redundant drainage systems. Provisions for the maintenance of subdrains must be designed into the system.

S 3.3 Before issuance of building permits, require certification regarding the stability of the site against adverse effects of rain, earthquakes, and subsidence.

S 3.4 Require adequate mitigation of potential impacts from erosion, slope instability, or other hazardous slope conditions, or from loss of aesthetic resources for development occurring on slope and hillside areas.

S 3.5 During permit review, identify and encourage mitigation of onsite and offsite slope instability, debris flow, and erosion hazards on lots undergoing substantial improvements.

S 3.6 Require grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, as appropriate, in order to assure the adequate demonstration of a project's ability to mitigate the potential impacts of slope and erosion hazards and loss of native vegetation.

S 3.7 Support mitigation on existing public and private property located on unstable hillside areas, especially slopes with recurring failures where County property or public right-of-way is threatened from slope instability, or where considered appropriate and urgent by the County Engineer, Fire, or Sheriff Department. (AI 100)

Subsidence and Expansive & Collapsible Soils

Subsidence refers to the sudden sinking or gradual downward settling and compaction of soil and other surface material with little or no horizontal motion. It may be caused by a variety of human and natural activities, including earthquakes.

Figure S-7 identifies areas susceptible to subsidence hazards based on geologic and hydrogeologic characteristics that are similar to regions of the County in which subsidence is documented.

Land subsidence and fissuring have been well-documented in Riverside County. Most of the early documented cases of subsidence affected only agricultural land

or open space. As urban areas have expanded, so too have the impacts of subsidence on structures for human occupancy. Ground subsidence and associated fissuring in Riverside County have resulted from both falling and rising ground water tables. In addition, many fissures have occurred along active faults that bound the San Jacinto Valley and the Elsinore Trough.

Subsidence typically occurs throughout a susceptible valley. In addition, differential displacement and fissures occur at or near the valley margin, and along faults. In the County of Riverside, the worst damage to structures as a result of regional subsidence may be expected at the valley margins. Alluvial valley regions are especially susceptible.

Expansive soils have a significant amount of clay particles which can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The occurrence of these soils is often associated with geologic units having marginal stability. Expansive soils can be widely dispersed and can be found in hillside areas as well as low-lying alluvial basins.

Expansion testing and mitigation are required by current grading and building codes. Special engineering designs are used effectively to alleviate problems caused by expansive soils. These designs include the use of reinforcing steel in foundations, drainage control devices, over-excavation and backfilling with non-expansive soil. For new development, future problems with expansive soils can be largely prevented through proper site investigation, soils testing, foundation design, and quality assurance during grading operations as required by the County Building Code. Active enforcement, peer review, and homeowner involvement are required to maintain these standards. Homeowners are important because moisture control and modified drainage can minimize the effects of expansive soils. Homeowners should be educated about the importance of maintaining a constant level of moisture below their foundation. Excessive swelling and shrinkage cycles can result in distress to improvements and structures.

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A well-documented case of property damage due to collapsible soils occurred in the Murrieta area (Shlemon and Hakakian, 1992). There, alluvium was left in place during rough grading, and later collapsed when ground water levels rose significantly. The ground water rose because of new golf course and residential irrigation.

Although expansive soils are now routinely alleviated through the County Building Code, problems related to past, inadequate codes constantly appear. Expansive soils are not the only cause of structural distress in existing structures. Poor compaction and construction practices, settlement, and landslides can cause similar damage, but require different mediation efforts. Once expansion has been verified as the source of the problem, mitigation can be achieved through reinforcement of the existing foundation, or alternatively, through the excavation and removal of expansive soils in an affected area.

Hydroconsolidation, or *soil collapse*, typically occurs in recently deposited, Holocene (less than 10,000 years old) soils that were deposited in an arid or semi-arid environment. Soils prone to collapse are commonly associated with man-made fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. These soils typically contain minute pores and voids. The soil particles may be partially supported by clay or silt, or chemically cemented with carbonates. When saturated, collapsible soils undergo a

Figure S- 7 Documented Subsidence Areas

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rearrangement of their grains, and the water removes the cohesive (or cementing) material. Rapid, substantial settlement results. An increase in surface water infiltration, such as from irrigation, or a rise in the ground-water table, combined with the weight of a building or structure, can initiate settlement and cause foundations and walls to crack.

In the County of Riverside, collapsible soils occur predominantly at the base of the mountains, where Holocene-age alluvial fan and wash sediments have been deposited during rapid runoff events. In addition, some windblown sands may be vulnerable to collapse and hydroconsolidation. Typically, differential settlement of structures occurs when lawns or plantings are heavily irrigated in close proximity to the structure's foundation. Forensic indications of collapsible soils include:

- tilting floors;
- cracking or separation in structures;
- sagging floors; or
- non-functional windows and doors.

Policies:

S 3.8 Require geotechnical studies within documented subsidence zones, as well as zones that may be susceptible to subsidence, as identified in Figure S-7 and the Technical Background Report, prior to the issuance of development permits. Within the documented subsidence zones of the Coachella, San Jacinto, and Elsinore valleys, the studies must address the potential for reactivation of these zones, consider the potential impact on the project, and provide adequate and acceptable mitigation measures.

S 3.9 Develop a liaison program with all County water districts to prevent water extraction-induced subsidence (AI 4).

S 3.10 Encourage and support efforts for long-term, permanent monitoring of topographic subsidence in all producing groundwater basins, irrespective of past subsidence.

Wind Erosion

Wind erosion is a serious environmental problem attracting global attention. Soil movement is initiated as a result of wind forces exerted against the surface of the ground. Dust particles in the air create major health problems. Atmospheric dust causes respiratory discomfort, may carry pathogens that cause eye infections and skin disorders, and reduces highway and air traffic visibility. Dust storms can cause additional problems. Buildings, fences, roads, crops, trees and shrubs can all be damaged by abrasive blowing soil.

Wind and wind-blown sand are an environmentally-limiting factor throughout much of Riverside County. Approximately 20 percent of the land area of Riverside County is vulnerable to "high" and "very high" wind erosion susceptibility. The Coachella Valley, the Santa Ana River Channel in northwestern Riverside County, and areas in and around the Cities of Hemet and San Jacinto are zones of high wind erosion susceptibility (Figure S-8).

Wind-blown sand is a well-recognized hazard for developments in the Coachella Valley. It has forced abandonment of dwellings and subdivided tracts in the central Coachella Valley. The primary source of sand here is the Whitewater River. Increases in the amount of wind-blown sand are related to episodic flooding of the Whitewater River. A 15-fold increase in wind erosion rates in this area has been noted following heavy flood events. Therefore, mitigation of wind-blown sand is directly related to mitigation of flood potential on the Whitewater River. Efforts to control the wind, using hedges and other barriers, may not be effective in mitigating wind erosion.

However, the Whitewater River provides a large component of sand to sustain the dune fields, home to several endangered species. Erosion intervention has had serious and unforeseen consequences in many places, so any proposed mitigation program should be approached carefully, with an extended period of preparatory study.

Policies:

S 3.11 Require studies that address the potential of this hazard on proposed development within "High" and "Very High" wind erosion hazard zones as shown on Figure S-8, Wind Erosion Susceptibility Map.

S 3.12 Include a disclosure about wind erosion susceptibility on property title. (AI 92)

S 3.13 Require buildings to be designed to resist wind loads.

S 3.14 Educate builders about the wind environment and encourage them to design projects accordingly (AI 93, 97, 98).

Flood & Inundation Hazards

Riverside County has experienced severe flooding many times throughout its history, resulting in the loss of lives and millions of dollars in property damage. Floods are caused by rivers and creeks overrunning their banks, and most property damage has occurred where development has been allowed without regard for flood hazard. If urban development continues to encroach onto the floodplains without major structural improvements, Riverside County will face an ever-increasing flood hazard, and potential losses will escalate.

The tremendous capital investments made in dikes, channels, levees, and dams over the last half century have not eliminated all flood hazards, and in some instances, the protective facilities may be unable to accommodate the 100-year flood. In recent years, the idea has become increasingly accepted that, while it is essential to protect existing development, the provision of massive flood control facilities merely to permit new development over major floodplains may be unwise. It is often more effective and less costly to locate development outside of hazard areas than to attempt to control the hazard itself.

Figure S- 8 Wind Erosion Susceptibility Map

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Furthermore, consistent with the intent and policies of the Multipurpose Open Space Element, the Safety Element recognizes the need to protect watercourses in their natural state. Flood and inundation policies limit the alteration of floodways and channelization when alternative methods of flood control are not technically feasible. The intent is to balance the need for protection with prudent land use solutions, recreation needs, and habitat requirements; and, as applicable, to provide incentives for natural watercourse preservation, including density transfer programs.

One-hundred- and five-hundred-year flood hazard zones are identified in Figure S-9, while dam inundation zones are identified in Figure S-10.

The intent of these policies is to eliminate the need for state or federal flood disaster declarations through aggressive flood mitigation activities.

Flood and Inundation Hazard Abatement

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Since 1965, eleven Gubernatorial and Presidential flood disaster declarations have been declared for Riverside County. State law generally makes local government agencies responsible for flood control in California.

While local agencies operate and maintain many flood control facilities, funding for the construction of such facilities often is shared with federal and state agencies. Nevertheless, local agencies independently fund many local projects without financial assistance from the federal or state governments.

Flooding susceptibility in Riverside County is primarily associated with several major stream drainages, including but not limited to the Santa Ana, San Jacinto and Whitewater Rivers, as well as smaller scale and flash flood events on many of the alluvial fans that flank the County's hillsides. Large-scale developments have utilized golf courses and greenbelts as part of a network of channels that collect flood flows on the upstream side of a project, carry it safely through the project, and disperse it on the downstream side. However, given the low permeabilities of the underlying bedrock, heavy runoff from the surrounding hills and mountains during strong storms cannot be prevented.

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Flood Facts:

- *Most lives are lost when people are swept away by flood currents.*
- *Most flood-related deaths are due to flash floods.*
- *Fifty percent of all flash flood fatalities are vehicle-related.*
- *Most property damage results from inundation by sediment-laden water.*
- *Most homeowners' insurance policies do not cover flood water damage.*
- *Individuals and business owners can protect themselves from property losses by purchasing flood insurance through FEMA's National Flood Insurance Program.*

The nation has seen several catastrophic collapses of highway and railroad bridges, due to scouring and a subsequent loss of support of foundations. Major bridge crossings that are vital to the County of Riverside should be designed and built to withstand scouring. Scour at highway bridges involves flood water sediment-transport and erosion processes that cause streambed material to be removed from the bridge vicinity. The State of California participates in the bridge scour inventory and evaluation program. In addition, California's seismic retrofit program of bridges includes underpinning of foundations. In western Riverside County, this is expected to help reduce the vulnerability of foundations to be undermined by scour. However, since the eastern portion of the County has only a moderate seismic risk, bridges in these areas are of lower priority for seismic underpinning.

A review of records maintained at the California Office of Emergency Services provided potential failure inundation maps for 23 dams affecting Riverside County. These maps were compiled into the geographic information system digital coverage of potential dam inundation zones for Riverside County. These maps are intended to be used by state and local officials for the development and approval of dam failure emergency procedures as described in Section 8589.5 of the California Government code. The maps are also used to provide information needed to make natural hazard disclosure statements required under recent legislation (AB 1195 Chapter 65, June 9, 1998; Natural Hazard Disclosure Statement).

Seismically-induced inundation refers to flooding that occurs when water retention structures fail during an earthquake. Often, inundation is triggered by damage from a seiche. A seiche is a wave that reverberates on the surface of water in an enclosed or semi-enclosed basin, such as a reservoir, lake, bay or harbor, in response to ground shaking during an earthquake. Seismically-induced inundation can also occur if strong ground shaking causes structural damage to above-ground water tanks. In response to this hazard, a new tank design includes flexible joints that can accommodate movement in any direction.

Floodplains are comprised of the floodway and the floodway fringe. They are the low, flat, periodically flooded lands adjacent to rivers, lakes and oceans inundated by 100-year flood.

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the 100-year flood without cumulatively increasing the water surface elevation more than one foot.

Floodway Fringe: That portion of the floodplain between the floodway and the limits of the existing 100-year floodplain.

100-Year Floodplain: Land bordering a river or channel that can expect to be flooded in a storm that has a one-percent chance of occurring each year. Federal legislation requires that the County have a flood management program for areas that are within the 100-Year Floodplain.

Policies:

S 4.1 For new construction and proposals for substantial improvements to residential and nonresidential development within 100-year floodplains as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, the County shall apply a minimum level of acceptable risk; and disapprove projects that cannot mitigate the hazard to the satisfaction of the Building Official or other responsible agency. (AI 25)

S 4.2 Enforce provisions of the Building Code in conjunction with the following guidelines: (AI 25)

a. All residential, commercial and industrial structures shall be flood-proofed from the 100-year storm flow, and the finished floor elevation shall be constructed at such a height as to meet this requirement. Critical facilities should be constructed above grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies.

b. Critical facilities shall not be permitted in floodplains unless the project design ensures that there are two routes for emergency egress and regress, and minimizes the potential for debris or flooding to block emergency routes, either through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access.

c. Development using, storing, or otherwise involved with substantial quantities of onsite hazardous materials shall not be permitted, unless all standards for evaluation, anchoring, and flood-proofing have been satisfied; and hazardous materials are stored in watertight containers, not capable of floating, to the extent required by state and federal laws and regulations.

d. Specific flood-proofing measures may require: use of paints, membranes, or mortar to reduce water seepage through walls; installation of water tight doors, bulkheads, and shutters; installation of flood water pumps in structures; and proper modification and protection of all electrical equipment, circuits, and appliances so that the risk of electrocution or fire is eliminated. However, fully enclosed areas that are below finished floors shall require openings to equalize the forces on both sides of the walls.

Figure S- 9 100- and 500-Year Flood Hazard Zones

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Figure S- 10 Dam Failure Inundation Zones

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S 4.3 Prohibit construction of permanent structures for human housing or employment to the extent necessary to convey floodwaters without property damage or risk to public safety. Agricultural, recreational, or other low intensity uses are allowable if flood control and groundwater recharge functions are maintained. (AI 25)

Alteration of

Watercourses: For more detailed policies regarding the alteration of natural watercourses, please refer to the Watershed Management Section of the Multipurpose Open Space Element.

S 4.4 Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or unless alternative methods are utilized to the maximum extent practicable. The intent is to balance the need for protection with prudent land use solutions, recreation needs, and habitat requirements, and as applicable to provide incentives for natural watercourse preservation, including density transfer programs as may be adopted. (AI 25, 60)

a. Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.

b. Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood control purposes in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.

S 4.5 Prohibit substantial modification to water courses, unless modification does not increase erosion or adjacent sedimentation, or increase water velocities, so as to be detrimental to adjacent property, nor adversely affect adjacent wetlands or riparian habitat. (AI 60, 61)

S 4.6 Direct flood control improvement measures toward the protection of existing and planned development. (AI 25)

S 4.7 Any substantial modification to a watercourse shall be done in the least environmentally damaging manner possible in order to maintain adequate wildlife corridors and linkages and maximize groundwater recharge. (AI 25, 60)

S 4.8 Allow development within the floodway fringe, if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety. (AI 25, 60)

S 4.9 Within the floodway fringe of a floodplain as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, require development to be capable of withstanding flooding and to minimize use of fill. However, some development may be compatible within flood plains and floodways, as may some other land uses. In such cases, flood proofing would not be required. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows. (AI 60)

S 4.10 Require all proposed projects anywhere in the County to address and mitigate any adverse impacts that it may have on the carrying capacity of local and regional storm drain systems.

S 4.11 Encourage neighboring jurisdictions to require development occurring adjacent to the County to consider the impact of flooding and flood control measures on properties within unincorporated Riverside County.

High-Risk Facilities

Many essential public and quasi-public facilities and hazardous materials sites are located within the 100- or 500-year flood zones of Riverside County, including: 14 of the County's 39 airports; 4 of 18 hospitals; 47 of 109 police stations, fire stations and emergency operation centers; 92 of 380 schools; 446 of 1,306 highway bridges; and 695 of 1,978 hazardous materials sites.

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Environmental legislation that protects rare and endangered species will continue to make construction of flood control structures difficult. In arid environments, twice as many species and about 250 percent more plant cover are associated with natural wash areas, compared with surrounding land. The County should consider a "Flood-prone Land Acquisition Program" that will reduce the losses associated with flooding, as well as the costs associated with mitigation. Developers can still profit from leaving wash corridors untouched, as home buyers will pay premiums to live by open space.

Policies:

S 4.12 Require certain existing essential, dependent care, and high-risk facilities that are not in conformance with provisions of County zoning to upgrade or modify building use to a level of safety consistent with the inundation risk. (AI 25, 101)

S 4.13 Require that facilities storing substantial quantities of hazardous materials within inundation zones shall be adequately flood-proofed and hazardous materials containers shall be anchored and secured to prevent flotation and contamination (AI 25)

S 4.14 Require that dependent care facilities have all flood-vulnerable electrical circuitry flood-proofed. (AI 101)

S 4.15 Require that high-risk facilities maintain and rehearse inundation response plans.

S 4.16 Utilize power of public land acquisition and other land use measures to create open space zoning of inundation zones in areas that are destined for redevelopment; when this is not feasible, low density land uses should be employed. (AI 25)

Risk Assessment

Recent environmental legislation and improved understanding and analysis of flood hazards in arid environments have resulted in new approaches to flood hazard mitigation implementation. Nationwide, there is a move to leave nature in charge of flood control. The advantages include lower cost, preservation of wildlife habitat and improved recreation potential. However, this type of flood mitigation is difficult to implement in areas where development has already occurred, as well as in regions susceptible to sheet flow. Where water spreads across broad areas, mitigation without channels or culverts is more difficult. Flood control structures have often been built piecemeal over the years, and new development may funnel water into older systems with insufficient capacity. These issues have been mitigated in recent years by the preparation of Master Plans by local public works agencies.

Policies:

S 4.17 Continue to assess and upgrade inundation risk and protection in the County. (AI 83, 88)

S 4.18 Require that the design and upgrade of street storm drains be based on the depth of inundation, relative risk to public health and safety, the potential for hindrance of emergency access and regress from excessive flood depth, and the threat of contamination of the storm drain system with sewage effluent. In general, the 10-year flood flows shall be contained within the top of curbs and the 100-year flood flows within the street right-of-way.

S 4.19 Encourage periodic reevaluation of the 500-year, 100-year and 10-year flood hazard in the County by state, federal, County, and other sources, and use such studies to improve existing protection, to review protection standards proposed for new development and redevelopment, and to update emergency response plans. (AI 59, 60, 83, 88)

S 4.20 Balance flood control mitigation with open space and environmental protection. (AI 59, 61)

S 4.21 Encourage the use of specific plans to allow increased densities in certain areas of a proposed development; or apply Transfer of Development Credits to encourage the placement of appropriate land uses in natural hazard areas, including open space, passive recreational uses, or other development capable of tolerating these hazards. (AI 25)

S 4.22 Take an active role in acquiring property in high-risk flood zones and designating the land as open space for public use or wildlife habitat. (AI 59)

Fire Hazards

After fire disasters, Gubernatorial Proclamations of a State of Emergency and Presidential Major Disaster Declarations have been declared on six occasions in area by the State of California Department of Forestry and Fire Protection and by this Safety Element. Wildfire susceptibility is mapped in Figure S-11. A significant portion of the County is undeveloped and consists of rugged topography with highly flammable indigenous vegetation. In particular, the hillside terrain of Riverside County has a substantial fire risk. Fire potential for the County is typically greatest in the months of August, September, and October, when dry vegetation coexists with hot, dry Santa Ana winds. However, fires with conflagration potential can occur at any time of the year in the County.

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Mobile home fires erupted at a greater rate (49.1 per thousand) than other structural fires (1.1 per thousand) as a result of the Northridge earthquake. Because the County of Riverside has a large number of mobile homes, there is a potential for high numbers of earthquake-induced structural fires.

Widespread fires following an earthquake, coupled with Santa Ana winds, constitute a worst-case fire suppression scenario for Riverside County. Because the fire danger is extremely high for three months of each year, there is a statistically significant chance that the worst-case fire suppression scenario could occur.

Following a major earthquake, water availability would likely be curtailed due to breaks in water lines caused by fault rupture, liquefaction or landslides. In addition, above-ground reservoirs are vulnerable to earthquakes, which would also affect the ability to fight fires.

Over time, all of California's wildlands will burn, as they are ecologically adapted to do. However, various human-created factors increase the risks that fires will occur; that they will be larger, more intense and more damaging; that fighting them will cost more; and that they will take a higher toll (in economic and non-economic terms).

The intent of these policies is to eliminate earthquake-induced fire as a threat and to develop an integrated approach to minimizing the threat of wildland fires.

Building Code & Performance Standards

The County's extreme diversity and complex pattern of land use and ownership require equally diverse and complex techniques to effectively manage the fire environment. Custom strategies for each situation can be created through combinations of pre-fire management, suppression, and post-fire management. These strategies should lessen the costly impacts of future wildfires and offer alternatives to continually increasing suppression forces. The continued use of the Riverside County Fire Protection Master Plan as a guide adopted by the Board of Supervisors will provide the necessary foundation for these management efforts.

Policies:

S 5.1 Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:

a. All proposed construction shall meet minimum standards for fire safety as defined in the County Building or Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency based on building type, design, occupancy, and use.

b. In addition to the standards and guidelines of the Uniform Building Code and Uniform Fire Code fire safety provisions, continue additional standards for high-risk, high occupancy, dependent, and essential facilities where appropriate under the Riverside County Fire Protection Ordinance. These shall include assurance that structural and nonstructural architectural elements of the building will not:

- impede emergency egress for fire safety staffing/personnel, equipment, and apparatus; nor
- hinder evacuation from fire, including potential blockage of stairways or fire doors.

c. Proposed development in Hazardous Fire areas shall provide secondary public access, unless determined otherwise by the County Fire Chief.

d. Proposed development in Hazardous Fire areas shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the County Fire Chief.

Figure S- 11 Wildfire Susceptibility

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Wind-Related Hazards

Widespread fires following an earthquake, coupled with Santa Ana winds, constitute a worst-case fire suppression scenario. Because of dry vegetation conditions and Santa Ana winds, the fire danger for Riverside County is considered extremely high for 25% of each year. Therefore, there is a statistically significant chance that this worst-case fire suppression scenario could occur.

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Santa Ana winds create a special hazard. Named by the early settlers at Santa Ana, these hot, dry winds enhance the fire danger throughout southern California.

Policies:

S 5.2 Reduce fire threat and strengthen fire-fighting capability so that the County could successfully respond to multiple fires (AI 88).

S 5.3 Require automatic natural gas shutoff earthquake sensors in high-occupancy industrial and commercial facilities, and encourage them for all residences.

S 5.4 Utilize ongoing brush clearance fire inspections to educate homeowners on fire prevention tips. (AI 96)

Long-Range Fire Safety Planning

In the wildland/urban interface, flammable structures may be within reach of ignition sources from burning wildland and structural fuels. These are extremely dangerous and complex fire conditions that pose a tremendous threat to public and firefighter safety.

New developments frequently purport to maximize the amount of land left as natural open space. Cuts and/or fills are stopped at the natural interface. This leaves the backyard as the only buffer between the highly flammable natural vegetation and the house. Brush clearance is required, but can occasionally run into endangered species obstacles.

Wildfires leave problems behind them. During an intense wildfire, all vegetation may be destroyed, and organic material in the soil may be burned away or may decompose into water-repellent substances that prevent water from percolating into the soil. As a result, even normal rainfall may result in unusual erosion or flooding; heavy rain can produce destructive debris flows. The relative importance of topography, vegetation conditions, and geologic engineering properties underlying the County of Riverside are compiled into digital databases and should be used to assist in the mitigation of post-fire debris flow hazards.

Policies:

S 5.5 Conduct and implement long-range fire safety planning, including stringent building, fire, subdivision, and municipal code standards, improved infrastructure, and improved mutual aid agreements with the private and public sector.

S 5.6 Ensure coordination between the Fire Department and the Transportation Land Management Agency, Environmental Heath Department and private and public water purveyors to improve fire fighting infrastructure, during implementation of the County's capital improvement programs, by obtaining:

- replacement and/or relocation of old cast-iron pipelines and inadequate water mains when street improvements are planned;
- assessment of impact fees as a condition of development; and
- redundant emergency distribution pipelines in areas of potential ground failure or where determined to be necessary.

S 5.7 Develop a program to utilize existing reservoirs, tanks, and water wells in the County for emergency fire suppression water sources.

S 5.8 Periodically review inter-jurisdictional fire response agreements, and improve fire fighting resources as recommended in the County Fire Protection Master Plan to keep pace with development, including construction of additional high-rises, mid-rise business parks, increasing numbers of facilities housing immobile populations, and the risk posed by multiple ignitions, to ensure that (AI 4, AI 88):

- Fire reporting and response times do not exceed those listed in the County Fire Protection Master Plan identified for each of the development densities described;
- Fire flow requirements (water for fire protection) are consistent with Insurance Service Office (ISO) recommendations; and
- The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for the intensity of development desired.

S 5.9 Continue County Fire Department collaboration with the Transportation Land Management Agency (TLMA) to update development guidelines for the urban/wildland interface areas. These guidelines should include increasing the development area to at least 30 feet past the usual boundary (AI 88).

S. 5.10 Continue to utilize the Riverside County Fire Protection Master Plan as the base document to implement the goals and objectives of the Safety Element.

Hazardous Waste & Materials

Technically, the term "hazardous materials" would include the entire spectrum of such substances from pre-product materials to waste. For the following discussion, it is necessary to make a distinction between those materials that are used or created in the manufacturing process and the waste generated by that process. Pre-product materials are considered to have value and are used in, or are the purpose of the manufacturing process, and are referred to as "hazardous materials". Because they have value, hazardous materials are subject to proper management procedures. Waste, however, is just that - the valueless byproduct of the manufacturing process that must be disposed of - and is referred to as "hazardous waste". Hazardous materials which have been spilled, dumped or are otherwise released into the environment immediately become hazardous waste. In the past, hazardous waste, because it is considered worthless by its "owners", has been managed with an out-of-sight, out-of-mind philosophy.

The reason for this distinction is based in the laws and regulations which govern how these two categories are stored, transported, and handled and in existing public perceptions. Although the term hazardous waste is much more widely known, and the effects of its poor management are very evident, hazardous materials are actually more commonly in close proximity to the general public. Hazardous materials are more frequently transported on freeways and public

roads and are more frequently stored in close proximity to residential areas. An excellent example is the local service station which stores thousands of gallons of highly volatile, flammable and carcinogenic material, gasoline, adjacent to or near residential development with virtually no concern on the part of the public. Hazardous waste, on the other hand, is in the spotlight of public concern. The Love Canal, Stringfellow Acid Pits, Times Beach, and other incidents have dramatically publicized the result of mismanaging hazardous waste and have left the public with a not altogether undeserved distrust of industry and government policies on hazardous waste.

The ban on the disposal of liquid and untreated waste has created a need for a new generation of facilities capable of treating hazardous waste to levels allowed for disposal and for disposal facilities that meet today's standards. After waste minimization, these facilities are the key to the new management philosophy, and without them, waste management would remain in the dark ages. Unfortunately, public distrust has resulted in the "Not-In-My-Back-Yard" (NIMBY) syndrome, making it more difficult to site the facilities necessary to implement these procedures.

Southern California Hazardous Waste Management Authority

Through its membership in the Southern California Hazardous Waste Management Authority (SCHWMA), the County of Riverside has agreed to work on a regional level to solve problems involving hazardous waste. SCHWMA was formed through a joint powers agreement between Santa Barbara, Ventura, San Bernardino, Orange, San Diego, Imperial, and Riverside Counties and the Cities of Los Angeles and San Diego. Working within the concept of "fair share", each SCHWMA county has agreed to take responsibility for the treatment and disposal of hazardous waste in an amount that is at least equal to the amount generated within that county. This responsibility can be met by siting hazardous waste management facilities (transfer, treatment and/or repository) capable of processing an amount of waste equal to or larger than the amount generated within the county, or by creating intergovernmental agreements between counties to provide compensation to a county for taking another county's waste, or through a combination of both facility siting and intergovernmental agreements. When and where a facility is to be sited is primarily a function of the private market. However, once an application to site a facility has been received, the County will review the requested facility and its location against a set of established siting criteria to ensure that the location is appropriate, and may deny the application based on the findings of this review. The County of Riverside does not presently have any of these facilities within its jurisdiction and therefore must rely on intergovernmental agreements to fulfill its fair share responsibility to SCHWMA.

Hazardous Waste Management Plan

The Riverside County Hazardous Waste Management Plan (CHWMP) was adopted by the Board of Supervisors on September 12, 1989. Using a framework of 24 existing and recommended programs, the CHWMP serves as the County's primary planning document for the management of hazardous substances. Although the title refers only to hazardous waste, the CHWMP is a comprehensive document containing all of the County programs for managing both hazardous materials and waste.

Policies:

S 6.1 Enforce the policies and siting criteria and implement the programs identified in the County of Riverside Hazardous Waste Management plan, which includes the following: (AI 98)

a. Comply with federal and state laws pertaining to the management of hazardous wastes and materials.
b. Ensure active public participation in hazardous waste and hazardous materials management decisions in Riverside County.
c. Coordinate hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority (SCHWMA).
d. Encourage and promote the programs, practices, and recommendations contained in the County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.

Disaster Preparedness, Response & Recovery

The County of Riverside Multi-Hazard Functional Plan establishes the responsibilities of the various County agencies in times of a disaster. Disaster preparedness and response planning include identifying short-term actions to reduce the scope of an emergency, and managing necessary resources in the event of a disaster. After any disaster, particularly an earthquake, short-term disaster recovery requires many operations that are less urgent than fire suppression or medical attention, but are equally important.

The intent of these policies is to build Riverside County into a sustainable, disaster-resistant community by accommodating natural hazards through planning, zoning, and mitigation, while preparing to respond to disasters until this goal is achieved.

Disaster Preparedness

In recent years, the County of Riverside has expanded its emergency preparedness planning. The County is required under state law to prepare and maintain a Standardized Emergency Management System (SEMS) Multi-hazard Functional Plan. The California Governor's Office of Emergency Services has extensive guidelines outlining the requirements of the County SEMS. These guidelines establish policies and procedures and assign responsibilities to ensure the effective management of emergency operations under the SEMS. However, the SEMS does not address long-range recovery planning issues.

Policies:

S 7.1 Continually strengthen the Multi-Hazard Functional Plan and maintain mutual aid agreements with federal, state, local agencies and the private sector to assist in:

a. clearance of debris in the event of widespread slope failures, collapsed buildings or structures, or other circumstances that could result in blocking emergency access or regress;
b. heavy search and rescue;
c. fire suppression;
d. hazardous materials response;
b. temporary shelter;
c. geologic and engineering needs;
d. traffic and crowd control; and
e. building inspection.

S 7.2 Encourage the utilization of multilingual staff personnel to assist in evacuation and short-term recovery activities, and meeting general community needs. (AI 97)

S 7.3 Require commercial businesses, utilities, and industrial facilities that handle hazardous materials to:

- install automatic fire and hazardous materials detection, reporting and shut-off devices; and
- install an alternative communication system in the event power is out or telephone service is saturated following an earthquake.

S 7.4 Use incentives and disincentives to persuade private businesses, consortiums, and neighborhoods to be self-sufficient in an emergency by:

- maintaining a fire control plan, including an onsite fire fighting capability and volunteer fire response teams to respond to and extinguish small fires; and
- identifying medical personnel or local residents who are capable and certified in first aid and CPR.

S 7.5 Conduct regional earthquake drills and, where appropriate: (AI 82)

- utilize HAZUS results in the Technical Background Report to develop internal scenarios for emergency response; and
- test back-up power generators in public facilities and other critical facilities taking part in the earthquake drill.

S 7.6 Improve management and emergency dissemination of information using portable computers with geographic information systems and disaster-resistant Internet access, to obtain: (AI 86)

- hazardous Materials Disclosure Program Business Plans regarding the location and type of hazardous materials;
- real-time information on seismic, geologic, or flood hazards; and
- the locations of high-occupancy, immobile populations, potentially hazardous building structures, utilities and other lifelines.

HAZUS Earthquake

Scenario Loss Estimations:
HAZUS is a standardized methodology for earthquake loss estimation based on GIS. HAZUS is designed for use by state, regional and local governments in planning for earthquake loss mitigation, emergency preparedness, response and recovery. The Safety Element Technical Background Report (Appendix H) provides a detailed earthquake loss estimation for Riverside County.

Critical Facilities and Lifelines

Critical facilities are parts of infrastructure that must remain operational after an earthquake, or facilities that pose unacceptable risks to public safety if severely

damaged. In Riverside County, critical facilities include schools, hospitals, fire and police stations, emergency operation centers, communication centers, dams, and industrial sites that use or store explosives, toxic materials or petroleum products. It is essential that critical facilities have no structural weaknesses that can lead to collapse.

Critical facilities may provide only limited services if lifelines are disrupted. The issue of seismic hazard mitigation for lifelines is very complex, given the diversity of lifeline facilities. The effects of strong ground motion applies to structures involved in lifeline service, such as the control tower in an airport, or the buildings that house computers and telephone circuits that are central to communication lifelines. Strong ground motion can also result in damage to freeway interchanges and bridges that are essential for successful transportation lifelines. When properly designed, manufactured and laid out, buried pipelines are generally not damaged by strong ground motions, but can be severely disrupted in areas of surface rupture, liquefaction, or landslides.

Figures S-12 through S-21 depict the locations of hospitals, emergency response facilities, school locations, communications facilities, dams, transportation facilities, hazardous materials sites, and natural resource lifelines in relation to varying degrees of ground shaking risk. Each figure illustrates the geographical relationship between the County's critical facilities and lifelines and the potential for ground shaking. The purpose of these maps is not to convey specifics, but rather to convey a picture of the concern that the County can use to gain an appreciation of potential risk associated with ground shaking.

Policies:

S 7.7 Strengthen the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to encourage structural and nonstructural design and construction. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated.

a. Ensure that special development standards, designs, and construction practices reduce risk to tolerable levels for projects involving critical facilities, large-scale residential development, and major commercial or industrial development through conditional use permits and the subdivision review process. If appropriate, impact fees should be assessed to finance required actions.
b. Require mitigation measures to reduce potential damage caused by ground failure for sites determined to have potential for liquefaction. Such measures shall apply to critical facilities, utilities, and large commercial and industrial projects as a condition of project approval.
c. Require that planned lifeline utilities, as a condition of project approval, be designed, located, structurally upgraded, fit with safety shutoff valves, be designed for easy maintenance, and have redundant back up lines where unstable slopes, earth cracks, active faults, or areas of liquefaction cannot be avoided.

Figure S- 12 Inventory of Hospital Locations

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Figure S- 13 Inventory of Emergency Response Facilities

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Figure S- 14 Inventory of School Locations

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Figure S- 15 Inventory of Communication Facilities

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Figure S- 16 Inventory of Dam Locations

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Figure S- 17 Inventory of Highway Bridges

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Figure S- 18 Inventory of Hazardous Materials

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Figure S- 19 Airport Locations

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Figure S- 20 Major Highway Locations

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Figure S- 21 Rail Facilities, Available Water, Oil and Natural Gas Pipeline Inventory Data

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d. Review proposed uses of fault setback areas closely to ensure that County infrastructure (roads, utilities, drains) are not unduly placed at risk by the developer. Insurance, bonding, or compensation plans should be used to compensate the County for the potential costs of repair.

S 7.8 Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of certain critical facilities.

S 7.9 Find alternatives that improve site safety for the protection of critical facilities. Property acquisition for open space, change in building use or occupancy, or other appropriate measures can be employed to reduce risks posed by hazards. (AI 101)

S 7.10 Discourage development of critical facilities that are proposed in dam failure inundation areas, and apply hazardous materials safety guidelines within such zones.

S 7.11 Coordinate with the Public Utilities Commission (PUC) and/or utilize the Capital Improvement Program, to strengthen, relocate, or take other appropriate measures to safeguard high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits that (AI 4):

- extend through areas of high liquefaction potential;
- cross active faults; or
- traverse earth cracks or landslides.

S 7.12 Require extra design considerations for lifelines across subsidence areas.

State Seismic Hazard Zones:
The Alquist-Priolo Earthquake Fault Hazards Zones Act addresses only the hazard of surface fault rupture - a phenomenon that only accounts for a relatively small percentage of earthquake losses. The Seismic Hazards Mapping Act was enacted to address the other 95% of earthquake losses. This Act requires the State Geologist to: 1) compile maps identifying seismic hazard zones, for protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure and other seismic hazards caused by earthquakes; 2) submit these maps to all affected cities, counties, state agencies, and the State Mining and Geology Board for review; and 3) provide official maps to affected cities, counties, and state agencies.

For additional information regarding Seismic Hazard Zones, please visit the Division of Mines & Geology at: http://www.consrv.ca.gov/dmg/.

Earthquake Response System

Half of the magnitude 5.0 and greater earthquakes in California are preceded by immediate foreshocks (earthquakes within 72 hours and 10 kilometers of their mainshock). In 1991, using this information, a group of scientists developed an earthquake preparation system based on anomalous earthquake activity along the southern San Andreas fault. This system could be adapted by the County of Riverside to respond to short-term increases in hazard from the San Andreas fault.

Certainly, thoughtfulness and care must be exercised to construct a system that will enhance public safety without promoting rumors or fear. Also, the system must not be a substitute for long-term mitigation efforts. Such potential difficulties do not reduce the usefulness of short-term, pre-event response plans. Over time, new data and additional research should allow similar systems to be developed for other major southern California faults.

Policies:

S 7.13 Develop a system to respond to short-term increases in hazard on the southern San Andreas fault, based on probabilities associated with foreshocks. (AI 85)

Emergency Evacuation

The State of California Government Code Section 65302 (g) requires local governments to assess the potential impact that flooding, and failure of dams or other water retention structures, might have on their jurisdiction. Safety Elements of General Plans must assess the impact of flooding from storm activity such as a 100-year flood event. A 100-year flood event is a flood that has a 1/100 chance of occurring in any one year, and a 26% chance of occurring during a typical 30 year home mortgage. Smaller-scale flooding generally associated with overburdened storm drain and canal systems can damage property and hinder emergency activities such as fire department access or evacuation.

Policies:

S 7.14 Regularly review and clarify emergency evacuation plans for dam failure, inundation, fire and hazardous materials releases. (AI 88)

S 7.15 Develop a blueprint for managing evacuation plans, including allocation of buses, designation and protection of disaster routes, and creation of traffic control contingencies. (AI 84, 88)

S 7.16 During countywide earthquake drills, encourage communication and cooperation between emergency response staff and designated contacts at hospitals, high-occupancy buildings, and dependent care facilities.

S 7.17 Adopt inundation alert and readiness levels corresponding with official forecasts by the State Office of Emergency Services, regarding earthquake prediction and potential for dam failure.

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The Recovery and Reconstruction Act of 1986 authorizes local governments to prepare before a disaster for expeditious and orderly recovery and reconstruction afterward. It enables localities to prepare pre-disaster plans and ordinances which may include: an evaluation of the vulnerability of specific areas under its jurisdiction to damage from a potential disaster, together with streamlined procedures for the appropriate modification of existing general plans or zoning ordinances affecting those areas after a disaster; a contingency plan of action and organization for post-disaster short-term and long-term recovery and reconstruction; and, a pre-disaster ordinance to provide adequate local authorization for post-disaster activities.

Disaster Recovery Plans

Communities around the world have recovered and reconstructed from catastrophic events. Emergency and disaster management literature about their experiences demonstrates many common patterns of recovery activity. In preparing a Safety Element for adoption, Riverside County is well positioned to learn from the disasters of others, and include advance-planning policies that provide the overall direction for future recovery planning and action. A Recovery and Reconstruction Ordinance is one component of a pre-event strategy, which itself is part of a detailed plan in a disaster preparedness, response and recovery program.

There is a point, though, when it becomes apparent that some things should **not** be rebuilt; that there are other, more appropriate uses for the land; that rebuilding today only lays the seeds for some future disaster - that fixing today is not worth wrecking tomorrow. Once that realization is reached, genuine progress in disaster reduction can be achieved.

Riverside County should prepare a recovery ordinance. At present, only a few other jurisdictions utilize the provisions of this Act, including the Cities of Los Angeles, Santa Monica and Whittier, as well as the Counties of Los Angeles and San Bernardino. Over time, this law will prove increasingly valuable as more experience is gained from earthquakes and other major disasters.

Policies:

S 7.18 Develop plans for short-term and long-term post-disaster recovery. (AI 103)

Public Information and Outreach

Effective June 1, 1998, per the State Natural Hazards Disclosure Act, sellers of real property and their agents must provide prospective buyers with a "Natural Hazard Disclosure Statement" when the property being sold lies within one or more State-mapped hazard areas. If a property is located in a Seismic Hazard Zone as shown on a map issued by the State Geologist, the seller or the seller's agent must disclose this fact to potential buyers. Currently, State-issued Seismic Hazard Zone maps for Riverside County have yet to be prepared. Consequently, the hazard maps prepared for this element will be used for the purpose of notifying potential buyers during real estate transactions.

Policies:

S 7.19 Establish a far-ranging, creative, forward-thinking public education and outreach campaign, to inform the community about: (AI 93, 96)

- the hazards they face;
- the costs of doing nothing to mitigate the hazards;
- what is known about each hazard;
- why jurisdictions don't have all the answers;
- mitigation incentives;
- what the County does for them;
- what the County cannot be expected to do for them.

S 7.20 Forge assertive liaisons with researchers, other government agencies and providers of mitigation services.

S 7.21 Share data, experience, and strategies with other emergency management agencies.

S 7.22 Maximize use of technology and the Internet. (AI 94, 99)

S 7.23 Make the County of Riverside Hazard Management web site into a knowledge resource for County officials, educators, developers, builders, and the general public. (AI 94, 95, 99).

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Chapter 5: Multipurpose Open Space Element

Introduction

> *"The open space system and methods for its acquisition, maintenance and operation are calibrated to its many functions: visual relief, natural resource protection, habitat preservation, passive and active recreation, protection from natural hazards, and various combinations of these purposes. This is what is meant by a multi-purpose open space system."*
>
> *– RCIP Vision Statement*

MULTIPURPOSE OPEN SPACE CONCEPTUAL FRAMEWORK

The County of Riverside's environmental setting is a critical component of its Vision for the future and its quality of life. The Vision speaks to the importance of the many forms of open space in the County: scenic, habitat, recreation, and their importance in defining the edges for our communities. The Vision also addresses the importance of agriculture to the economy and culture of the County.

In response to the RCIP Vision and the California government code, this element addresses protecting and preserving natural resources, agriculture and open space areas, managing mineral resources, preserving and enhancing cultural resources, and providing recreational opportunities for the citizens of Riverside County.

The California Government Code describes the General Plan as a collection of seven mandatory elements that include: conservation, addressing the conservation, development and use of natural resources; and open space, detailing plans and measures for preserving open-space for natural resources, the managed production of resources, outdoor recreation, public health and safety, and the identification of agricultural land. The policy direction required in these two elements is provided in this single Multipurpose Open Space Element.

This element categorizes issues and policies into those that seek to ***conserve***, or manage the use of, resources and those that seek to ***preserve*** resources for the purpose of sustaining their stocks in perpetuity. Additionally, the resource conservation section of the element is subdivided into ***renewable resources*** and ***non-renewable resources***. Renewable resources, such as forests, are those that can reproduce, grow, and ultimately perish. Non-renewable resources as those that have a finite stock relative to human consumption over time, and that are not alive in the sense of having an ability to grow. Mineral resources, for example, are non-renewable.

Conserve-to protect from loss or harm by using carefully or sparingly.
Preserve-To keep in perfect or unaltered condition; maintain unchanged.
Reserve-A reservation of land or an amount of mineral, fossil fuel or other resource known to exist in a particular location.

SETTING

It is appropriate that the County of Riverside boasts of a "remarkable environmental setting" in the summary statement of its Vision. Within its roughly 7,400 square miles, the County incorporates a wide range of natural features, including mountain ranges, desert areas, riparian areas and rivers, vernal pools, and oak woodlands and forests.
The Colorado Desert bio-region encompasses the southeastern portion of Riverside County, extending from the Colorado River west to the Joshua Tree

National Park, and from San Bernardino County to San Diego County. This bio-region is rich in agriculture, though it is considered semi-arid. The Colorado Desert is the western extension of the Sonoran desert, which is of much lower elevation than the northern Mojave Desert. Common habitat includes sandy desert, scrub, palm oasis, and desert wash. Summers are hot and dry, and winters are cool and moist.

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A sample of the range of Riverside County's natural resources must include: California's largest inland sea, the 360-square mile Salton Sea in the southern most portion of the Coachella Valley; the Joshua Tree National Park; portions of the San Bernardino and Cleveland National Forests; the Santa Ana, Santa Rosa and San Jacinto Mountain Ranges, among others; and portions of the Colorado, Santa Ana and San Jacinto Rivers.

A portion of north-central Riverside County is part of the Mojave bio-region. This is one of the largest bio-regions in the state, encompassing seven counties in California. The Mojave bio-region is the western extension of a vast desert that covers southern Nevada, the southwestern tip of Utah, and 25% of southern California. The climate is hot and dry in the summer, and winters are cool to cold depending upon elevation. Palm oases, streams and springs are water sources for much of the wildlife. Some of the common habitats are the desert wash Joshua Tree Scrub, palm oasis, willow riparian forest, and open sandy dunes.

The South Coast bio-region covers most of western Riverside County. This bio-region is home to the towering San Gorgonio Peak at 11,500 feet, the watersheds of the San Jacinto and Santa Ana Rivers, the Cleveland and Angeles National Forests, and federal wilderness and wildlife areas. Some of the following habitats are found here: chaparral, juniper-pinyon woodland, grasslands, hardwood forests, southern oak, and yellow pine. The climate is considered mild year-round, with hot dry summers inducing wildfires and wet winters that can cause mudslides.

Further, the plant and animal life of the County is diverse, and numerous animal species and narrow endemic plants (species with very limited geographic ranges) found in the County have special status under the Federal Endangered Species Act and/or the California Endangered Species Act. In response to this, the County has participated in two Multiple Species Habitat Conservation Planning processes, one covering western Riverside County, and a second in the Coachella Valley. Implications for County land use and open space planning are briefly described in this element.

"The true nature lover learns that nature is worth knowing in all her aspects, that the only deserts there are [,are] the deserts of the soul. The best pleasures cost us nothing."

– From a handwritten note by Riverside Naturalist Edmund Jaeger circa 1921

Additional information on the physical setting of Riverside County can be found in the Existing Setting Report, which is part of the Environmental Impact Report (EIR) prepared for the General Plan.

The County of Riverside is in a unique position in southern California in that it has experienced, and is poised to continue experiencing in the next 20 years, enormous population growth. At the same time, much of the County's land area remains undeveloped. Unincorporated lands with land use designations under the umbrella of the County's Open Space and Agriculture Foundation Components (refer to the Land Use Element for a description of the Foundation Component system) total roughly 80% of the County's land area. Rural designations that include mountainous and desert areas add about 13% of the County's lands to that total. Therefore, the vast majority of the County of Riverside is affected by policies contained within this element of the General Plan.

Conservation

Policies within the Conservation section of this element seek to guide decision-making related to renewable and non-renewable County resources. These types of resources require conservation—a conscious effort to consume less of scarce resources so that their stock can be sustained for the future. Conservation of natural resources applies to water, agricultural resources, forests, vegetation, mineral, and energy resources. By conserving resources we prevent degradation of the environment through pollution or loss of productive capacity within our environment.

RENEWABLE RESOURCES

Population growth and development continually require the use of natural resources, including those that are renewable. Following are Vision Statements that represent the guiding principles established by Riverside County to conserve and protect renewable resources for economic, cultural, and aesthetic purposes.

> *"We acknowledge the inter-relatedness of the economic, environmental, cultural and institutional realms of our community life as we continue to plan and build our communities in a manner that enables us to achieve mutually beneficial results."*

> *"We acknowledge and respect the long heritage of economic endeavors that have shaped portions of our environment through mining, agriculture, renewable energy development and similar enterprises and continue to take their value into consideration in shaping our environmental management."*

Additionally, the Vision addresses the need to protect Riverside County's environmental sustainability for future generations:

> *"We are beneficiaries of the past and we value that. We seek the same for our heirs. We declare that they should have an expectation that they will inherit communities and a natural environment that offer them a reasonable range of choices."*

Water Resources

Riverside County incorporates four major watershed areas in which river systems, numerous lakes and reservoirs, and natural drainage areas are located. Water resources are mapped in Figure OS-1. The County's supply of water is limited by its arid climate, agricultural practices, projected population growth and its associated demand and development, and the dependence on low quality imported water. Further, the availability of imported surface water has been reduced due to changing regulations, despite an ever-increasing water demand.

In some areas within Riverside County, contamination from natural or manufactured sources has reduced groundwater quality such that its use requires treatment. Management of the amount of water available (local and imported)

and its quality, is an important response to the gap between supply and demand in Riverside County.

Policies in this section seek to protect and enhance the water resources in the county. These policies address broad water planning issues, and the relationship of land use decisions to water issues.

Water Supply

The economy of the developed portions of western Riverside County—the inland valley—is sustained primarily by water imported from northern California and the Colorado River, and secondarily by production of local groundwater. The eastern portion of the County—the majority of which is desert—also relies on water from the Colorado River, northern California, and local groundwater. This portion of the County is largely undeveloped, with uncertain increases in the water resource available to meet increases in water demand being a major factor that might constrain future development.

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The Metropolitan Water District, which serves water agencies in the western part of the County, projects at least a doubling of water demand between 2000 and 2020. This agrees with the Department of Water Resources projections for the same period.

Riverside County's water supply is uncertain for two reasons: recent water apportionments from northern California have been reduced as part of the CALFED Bay-Delta Program, as well as decreased supplies to California from the Colorado River. Additionally, most of the County's sources of water are currently at capacity. Water storage to meet peak demand, or a two-day to one-day supply, is provided by many local water agencies within Riverside County. However, long-term storage of large quantities of water is provided only in the Metropolitan Water District (MWD) and California Department of Water Resources (DWR) facilities. Total storage capacity in the existing reservoir system is 871,000 acre-feet (a.f.). Three of these storage facilities are located in Riverside County: Lake Mathews, Lake Skinner, and Lake Perris. Together, these storage facilities have a total of 342,300 a.f. of storage capacity. Diamond Valley Lake triples this capacity with an additional 800,000 a.f. of storage, bringing the total storage capacity available within Riverside County to 1,142,300 a.f. Even though the creation of Diamond Valley Lake has allowed for three times the current storage of water, there is no increase in the total amount of water available to the County that can be identified. This increase in water storage will benefit the whole South Coast region, which includes other significant jurisdictional water users such as San Diego County, as well as Riverside County. Currently, approximately 3/8ths of existing storage capacity may be used to meet seasonal demand. The remaining 5/8ths is reserved for emergency need such as severe droughts and/or use when a natural disaster, such as an earthquake, makes it impossible to meet demand through usual supply facilities.

An acre-foot of water is the volume of water represented by a 1-foot depth of water over a one-acre area (43,560 cubic feet of water or approximately 326,000 gallons), and is enough to supply the water needs of 2 families for 1 year.

Projected 2020 water use and population levels indicate an expected water shortage for the two hydrologic regions that comprise Riverside County: the South Coast and Colorado River regions. Though these regions include most of southern California, and not just Riverside County, they are each representative of the types of supply and demand within the County. The two regions are defined as follows:

- South Coast: Basins draining into the Pacific Ocean from the southeastern boundary of Rincon Creek Basin in western Ventura County to the Mexican border.

Figure OS- 1 Water Resources

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- Colorado River: Basins south and east of the South Coast and South Lahontan regions; areas that drain into the Colorado River, the Salton Sea, and other closed basins north of the Mexican border.

The DWR produces a California Water Plan every five years that not only includes a statewide water budget but also regional watershed water budgets. These water budgets are based on California Department of Finance population projections, and indicate clearly that demand for water will exceed supply in 2020 whether or not a drought condition exists at that time. Most of the State's regions, except for the North Coast and San Francisco Bay Regions, experience average-year and drought-year shortages now, and are forecasted to experience increased shortages in 2020. The largest average-year shortages are forecasted for the South Coast Region, which heavily relies on imported water. Future average-year shortages in the South Coast Region reflect forecasted population growth plus lower Colorado River supplies as California reduces its use of Colorado River water to the State's basic apportionment. Following are the descriptions of the two hydrologic regions as well as regional water budgets (Tables OS-1 & OS-2):

Table OS-1
South Coast Region Water Budget with Existing Facilities and Programs

	1995		2020	
Water Use	**Average**	**Drought**	**Average**	**Drought**
Urban	4,340	4,382	5,519	5,612
Agricultural	784	820	462	484
Environmental	100	82	104	86
Total	**5,224**	**5,283**	**6,084**	**6,181**
Supplies				
Surface Water	3,839	3,196	3,625	3,130
Groundwater	1,177	1,371	1,243	1,462
Recycled and Desalted	207	207	273	273
Total	**5,224**	**4,775**	**5,141**	**4,865**
Shortage	***0***	***508***	***944***	***1,317***

Note: Figures in thousands of acre-feet of water.

Table OS-2

Colorado River Region Water Budget with Existing Facilities and Programs

	1995		2020	
Water Use	**Average**	**Drought**	**Average**	**Drought**
Urban	418	418	740	740
Agricultural	4,118	4,118	3,583	3,583
Environmental	39	38	44	43
Total	**4,575**	**4,574**	**4,367**	**4,366**
Supplies				
Surface Water	4,154	4,128	3,920	3,909
Groundwater	337	337	285	284
Recycled and Desalted	15	15	15	15
Total	**4,506**	**4,479**	**4,221**	**4,208**
Shortage	***69***	***95***	***147***	***158***

Note: Figures in thousands of acre-feet of water.

Of the two Hydrologic Units of the State, the Colorado River Region is of particular concern because it encompasses the Coachella Valley in the West Basin and the desert in the East Basin (Refer to Figure OS-1, Water Resources). Irrigation needs in the Coachella Valley are met almost exclusively by water imported from the Colorado River. Historical extraction of groundwater in the Coachella Valley has caused overdraft. Currently, an extensive groundwater recharge project is being undertaken by the Coachella Valley Water District that recharges Colorado River Water into spreading basins. Within the East Basin, irrigation and domestic water is provided by the Colorado River with only approximately 1% groundwater use and little direct reclamation. Agricultural runoff and some domestic wastewater do get returned to the Colorado River. Therefore, the water source at the southern end of the watershed is actually a mixture of Colorado River water, agricultural runoff, and reclaimed water.

The following policies are intended to address the County's water supply issues:

Policies:

OS 1.1 Balance consideration of water supply requirements between urban, agricultural, and environmental needs so that sufficient supply is available to meet each of these different demands. (AI 3)

OS 1.2 Develop a repository for the collection of County water resource information. (AI 11, 55)

OS 1.3 Provide active leadership in the regional coordination of water resource management and sustainability efforts affecting Riverside County and continue to monitor and participate in, as appropriate, regional activities, addressing water resources, groundwater, and water quality, such as a Groundwater Management Plan, to prevent overdraft caused by population growth. (AI 4, 55, 58)

The General Plan policy and implementation item reference system:

Identifies which element contains the Policy, in this case the Land Use Element, and the sequential number.

LU 1.3

Neighborhood Commercial uses should be located near residential uses.

(AI 1 and AI 4)

Reference to the relevant Action Items contained in the implementation Program

Water Conservation

In order to help bridge the projected gap between water supply and demand in Riverside County in 2020, water conservation must be a priority. Following are water conservation policies that seek to manage existing supplies, by promoting the efficient use of water to the maximum extent possible, so that they can be maintained for future use.

Policies:

OS 2.1 Encourage the installation of water-conserving systems such as dry wells and graywater systems, where feasible, especially in new developments. The installation of cisterns or infiltrators shall also be encouraged to capture rainwater from roofs for irrigation in the dry season and flood control during heavy storms. (AI 57, 62)

OS 2.2 Where feasible, decrease stormwater runoff by reducing pavement in development areas, and by design practices such as permeable parking bays and porous parking lots with bermed storage areas for rainwater detention. (AI 57, 62)

OS 2.3 Encourage native, drought-resistant landscape planting. (AI 3, 57, 62)

OS 2.4 Support and engage in educational outreach programs with other agencies that promote water conservation and wide-spread use of water-saving technologies. (AI 58)

OS 2.5 Encourage continued agricultural water conservation and recommend the following practices where appropriate and feasible: lining canals, recovering tail water at the end of irrigated fields, and appropriate scheduling of water deliveries. (AI 57)

A watershed is the entire region drained by a waterway that drains into a lake or reservoir. It is the total area above a given point on a stream that contributes water to the flow at that point, and the topographic dividing line from which surface streams flow in two different directions. Clearly, watersheds are not just water. A single watershed may include combinations of forests, glaciers, deserts, and/or grasslands.

Watershed Management

Four distinct watershed areas are incorporated in Riverside County and are mapped in Figure OS-1. These are the Santa Ana River Basin, which drains into the Pacific Ocean; San Diego Basin, the West Basin of the Colorado River, and the East Basin of the Colorado River. The East Basin of the Colorado River drains into the Colorado River and the West Basin of the Colorado River drains primarily into the Salton Sea Trough. The Santa Ana River Basin drains into the Pacific Ocean in Orange County while the San Diego Basin drains into the Pacific Ocean in San Diego County. These large watersheds are further divided into smaller sections by internal surface water drainage areas and groundwater basins.

Watershed management relates to sustaining watersheds at an acceptable level of quality, contributing to resource quality, and maintaining groundwater supplies.

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The Watershed Approach
According to the U.S. EPA, effective watershed management results in a focus on priority problems; community building wherein stakeholder partners collaborate to seek local solutions; cost savings for regulators, and predictability for those regulated.

Water Quality

Water quality problems that have occurred in Riverside County have related to inadequate subsurface sewage disposal, waste disposal management of the Santa Ana River, agriculturally-related problems such as citricultural runoff in the western County and increasing salinity of the desert groundwater basins, sediment buildup of water bodies from construction-related erosion, lake water quality problems, and pollution due to urban stormwater system runoff. Regional Water Quality Control Boards for Regions 7, 8, and 9 provide state-level water quality policy for the County. Further, the National Pollutant Discharge Elimination system mandates Best Management Practices in order to effectively minimize the adverse effects of pollution and protect water quality. The following policies are intended to provide local guidance for the protection and maintenance of water quality in Riverside County.

Policies:

OS 3.1 Encourage innovative and creative techniques for wastewater treatment, including the use of local water treatment plants.

OS 3.2 Encourage wastewater treatment innovations in rural areas.

OS 3.3 Minimize pollutant discharge into storm drainage systems and natural drainage and aquifers. (AI 3)

Groundwater Recharge

Groundwater resources in the County are defined by their quality as well as quantity. Most groundwater basins within Riverside County store local and imported water for later use to meet seasonal and drought-year demands. Under these groundwater recharge programs, groundwater is artificially replenished in wet years with surplus imported water. Water is then extracted during drought years or during emergency situations. Groundwater recharge that may also involve the recharge of reclaimed water, enhances the region's ability to meet water demand during years of short supply, and increases overall local supply reliability. In order to facilitate groundwater recharge, the following policies may apply:

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Water banking is a key factor for meeting future water supply needs in southern California. Historically, groundwater extractions have exceeded natural recharge in this region, resulting in declining water levels and water quality. Using groundwater basins for water banking during wet periods will help alleviate southern California's water supply problems.

Policies:

OS 4.1 Support efforts to create additional water storage where needed, in cooperation with federal, state, and local water authorities. Additionally, support and/or engage in water banking in conjunction with these agencies where appropriate, as needed. (AI 56, 57)

OS 4.2 Participate in the development, implementation, and maintenance of a program to recharge the aquifers underlying the County. The program shall make use of flood and other waters to offset existing and future groundwater pumping, except where:

a. groundwater quality would be reduced;
b. available groundwater aquifers are full; or
c. rising water tables threaten the stability of existing structures. (AI 56, 57)

OS 4.3 Ensure that adequate aquifer water recharge areas are preserved and protected. (AI 3, 56, 57)

OS 4.4 Incorporate natural drainage systems into developments where appropriate and feasible. (AI 3)

OS 4.5 Retain storm water at or near the site of generation for percolation into the groundwater to conserve it for future uses and to mitigate adjacent flooding. (AI 57)

OS 4.6 Use natural approaches to managing streams, to the maximum extent possible, where groundwater recharge is likely to occur. (AI 57)

OS 4.7 Offer incentives to landowners whose property is prohibited from development due to its retention as a natural ground water recharge area. These incentives shall be provided to encourage the preservation of natural water courses without creating undue hardship on the owner of properties, and might include density transfer mechanisms. (AI 9)

Also see the Flood and Inundation Hazard Abatement section of the Safety Element.

Floodplains are comprised of the floodway and the floodway fringe. They are the low, flat, periodically flooded lands adjacent to rivers, lakes and oceans inundated by 100-year flood.

The floodway is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the 100-year flood without cumulatively increasing the water surface elevation more than one foot.

The floodway fringe is that portion of the floodplain between the floodway and the limits of the existing 100-year floodplain.

★ *The County of Riverside has adopted the USGS "blue line stream" overlay as its major form of mapping the watercourses in Riverside County (see figure OS-1, the Land Use Element, and Area Plan Maps). Though this overlay is not necessarily the most accurate description of a water course or of the actual running water within the County, it is a general indicator of existing or potential moving water resources, floodways and floodplains.*

Floodplain and Riparian Area Management

Floodplains are subject to geomorphic (land-shaping) and hydrologic (water flow) processes. The watercourse and its floodway are usually the focus of construction and control; while fertile, flat and "reclaimed" floodplain lands are usually the focal points for other activities such as agriculture, commerce, and residential development. These areas form a complex physical and biological system that not only supports a variety of natural resources, but also provides natural flood and erosion control. In addition, the floodplain represents a natural filtering system, with water percolating back into the ground and replenishing groundwater. When a watercourse is divorced from its floodplain with levees and other flood control facilities, then natural, built-in benefits are either lost, altered, or significantly reduced.

The conventional assumption that flooding can be completely eliminated has meant not only an unrealistic reliance on manufactured flood protection, but also the development of a flood control system that squeezes rivers into artificially narrow channels, adds steeply sloped levees (devoid of riparian vegetation), and eliminates historic floodplains, all in the name of reclamation, flood protection and urban growth. Unfortunately, this highlights the fact that floods have been viewed for far too long as everything except part of the natural life cycle of rivers and floodplains. Flooding is part of the dynamic nature of healthy rivers and ecosystems. High flows and flood waters are needed to cleanse the channels of accumulated debris, build stream banks, import gravels for aquatic life, thin riparian forests and create riparian habitat. The open space of floodplains adjacent to rivers and streams helps store and slowly release floodwaters, thus reducing flood flow and peaks and their subsequent impacts during small and frequent flood events.

Further, riparian habitat within floodplains is of great value to resident and migratory animal species, as it provides corridors and linkages to and from the biotic regions of the County. The numerous essential habitat elements provided by the remaining riparian corridors of Riverside County make them a significant contributor to wildlife habitat throughout the County. The intent of the County is to sustain "living" riparian habitats to the maximum extent possible.

Also see the Flood and Inundation Hazard Abatement section of the Safety Element.

Development is defined as the division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure that would require a discretionary permit from the County; any mining, excavation, landfill or land disturbance, and any use or extension of the use of land that would require a discretionary permit from the County. Development does not include non-motorized trails, agriculture or other uses for which a discretionary permit is not required. For purposes of this definition, the term, discretionary permit, shall have the same meaning as that set forth in the California Environmental Quality Act and Guidelines.

Watercourse is defined as any natural stream, river, creek, waterway, gully, ravine or wash in which water flows in a definite direction or course, either continuously or intermittently, and has a definite channel, bed and banks. A watercourse also includes any vegetation along the banks as well as any adjacent areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions including swamps, marshes, and bogs.

The following set of policies address floodways, the floodplain fringe, and riparian areas in the County.

Policies:

OS 5.1 Substantially alter floodways or implement other channelization only as a "last resort," and limit the alteration to:
a. that necessary for the protection of public health and safety only after all other options are exhausted;
b. essential public service projects where no other feasible construction method or alternative project location exists; or
c. projects where the primary function is improvement of fish and wildlife habitat. (AI 25, 59, 60)

OS 5.2 If substantial modification to a floodway is proposed, design it to reduce adverse environmental effects to the maximum extent feasible, considering the following factors:
a. stream scour;
b. erosion protection and sedimentation;
c. wildlife habitat and linkages;
d. groundwater recharge capability;
e. adjacent property; and
f. design (a natural effect, examples could include soft riparian bottoms and gentle bank slopes, wide and shallow floodways, minimization of visible use of concrete, and landscaping with native plants to the maximum extent possible).
A site specific hydrologic study may be required. (AI 25, 59, 60)

OS 5.3 Based upon site, specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues:
a. public safety;
b. erosion;
c. riparian or wetland buffer;
d. wildlife movement corridor or linkage; and
e. slopes. (AI 59, 60)

OS 5.4 Consider designating floodway setbacks for greenways, trails, and recreation opportunities on a case-by-case basis. (AI 25, 59, 60)

OS 5.5 New development shall preserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses. Incentives shall be utilized to the maximum extent possible. (AI 25, 60)

OS 5.6 Identify and, to the maximum extent possible, conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas. (AI 60, 61)

OS 5.7 Where land is prohibited from development due to its retention as natural floodways, floodplains and water courses, incentives should be available to the owner of the land including density transfer and other mechanisms as may be adopted. These incentives will be provided for the purpose of encouraging the preservation of natural

water courses without creating undue hardship on the owner of properties following these policies. (AI 60)

Wetlands

Wetlands in Riverside County might typically occur in low-lying areas that receive fresh water at the edges of lakes, ponds, streams, and rivers. Wetlands provide habitat for a wide variety of plants, invertebrates, fish, and larger animals, including many rare, threatened, or endangered species. The plants and animals found in wetlands include both those that are able to live on dry land or in the water and those that can live only in a wet environment. Wetlands in Riverside County may include vernal pools, palm oases or desert washes.

The term "riparian area" is defined as a wetland which occurs along a watercourse. "Upland habitat" is elevated above lowlands occurring along or within a river, stream, lake etc. Upland habitat is that which does not meet the criteria of federal-and-state jurisdictional wetlands.

Policies:

OS 6.1 During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands. (AI 3)

OS 6.2 Preserve buffer zones around wetlands where feasible and biologically appropriate. (AI 61)

OS 6.3 Consider wetlands for use as natural water treatment areas that will result in improvement of water quality. (AI 56)

Wetlands are the link between water and land, or the collective term for areas between dry land and bodies of water. In wetlands, the surface of the water, called the water table, is usually at, above, or just below the land surface for enough time to restrict the growth of plants to those that are adapted to wet conditions and promote the development of soils characteristic of a wet environment. Wetlands also act as natural filters, thereby enhancing overall water quality and protecting sources of drinking water.

A wetland buffer is land that provides a buffer area of an appropriate size to protect the environmental and functional habitat values of the wetland, which are integrally important in supporting the full range of the wetland and adjacent biological community. In wetland buffer areas, permitted uses can include access paths, improvements necessary to protect adjacent wetlands, and all uses permitted in wetland areas.

Agricultural Resources

Agriculture is given special recognition as a Foundation Component of the General Plan because of its high socioeconomic value to Riverside County. The two major conservation rationales are to maintain the viability of the agricultural industry, a critical component of the County's economy, and to preserve the resource represented by farmland—its productive soils and its secondary role as an open space amenity. Soil classifications and the Williamson Act are described below because of their importance in defining agricultural resources.

Soil Classifications

The Countywide Agricultural Resources Map (see Figure OS-2) identifies several classifications of important agricultural lands, as established by state and federal agencies. The four mapped classifications of important farmland are based on criteria for soil characteristics, climatic conditions, and water supply. The criteria include soil type, moisture content, water supply, soil temperature, acidity, salinity, depth, drainage, water table, flooding, slope, erodibility, permeability, rock content, rooting depth, growing season, crop type and value, and other economic factors. The four classifications of important farmlands shown on the Agricultural Resources Map are described as follows.

Prime Farmlands

Prime Farmland is land best suited for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses: cropland, pastureland, rangeland, forest land, or other land, but not urban land or water. It has the soil quality, growing season, and moisture supply needed to economically produce sustained

high yields of crops when treated and managed (including water management) according to modern farming methods.

Long a major foundation of our economy and our culture, agriculture remains a thriving part of Riverside County. While we have lost some agriculture to other forms of development, other lands have been converted to agriculture. We remain a major agricultural force in California and in the global agricultural market.

– RCIP Vision Statement

Statewide Important Farmlands

Farmland of Statewide Importance is land other than Prime Farmland that has a good combination of physical and biological characteristics for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses (the land could be cropland, pastureland, rangeland, forest land or other land, but not urban land or water).

Unique Farmlands

Unique Farmland is land other than Prime and Statewide Important Farmland, that is currently used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality of a specific crop when treated and managed according to modern farming methods. Examples of such economically important crops are citrus, olives, and avocados.

Local Important Farmlands

These farmlands are not covered by the above categories but are of locally significant economic importance. They include the following:

- Lands with soils that would be classified as Prime or Statewide Important Farmlands but lack available irrigation water.
- Lands planted in 1980 or 1981 in dry land grain crops such as barley, oats, and wheat.
- Lands producing major crops for Riverside County but that are not listed as Unique Farmland crops. Such crops are permanent pasture (irrigated), summer squash, okra, eggplant, radishes, and watermelon.
- Dairylands including corrals, pasture, milking facilities, hay and manure storage areas if accompanied with permanent pasture or hayland of 10 acres or more.
- Lands identified by the County with Agriculture land use designations or contracts.
- Lands planted with jojoba that are under cultivation and are of producing age.

Williamson Act

The California Land Conservation Act, better known as the Williamson Act, has been the state's premier agricultural land protection program since its enactment in 1965. This program allows owners of agricultural land to have their properties assessed for tax purposes on the basis of agricultural production rather than current market value. Participation in this program is voluntary, and requires 100 contiguous acres of agricultural land under one or more ownerships to file an application for agricultural preserve status with the Riverside County Planning Department.

Figure OS- 2 Agricultural Resources

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After an agricultural preserve has been established, the land within the preserve is automatically restricted to agricultural and compatible uses. In order to have land within an agricultural preserve assessed on the basis of agricultural production rather than full market value, the property owner(s) and the County of Riverside must enter into a Land Conservation Contract. Either party may file a Notice of Non-Renewal, which will cause the contract to expire in 10 years. After the contract has expired, a landowner may apply to remove that property from an agricultural preserve. The landowner also has the option of petitioning the Board of Supervisors for the cancellation of the contract. Cancellation of the contract involves payment of substantial cancellation fees. Land use decisions related to the use of agricultural lands after cancellation of Williamson Act contracts are subject to the provisions of the Certainty System described in Chapter 1 of this General Plan.

Since 1998, another option within the Williamson Act Program is the rescission process to cancel a Williamson Act contract and simultaneously dedicate a permanent agricultural conservation easement on other land.

This section focuses on policies for the protection of agricultural lands as historical, cultural, and scenic resources. These are the valuable qualities that economic transactions do not account for; therefore, they require special protection.

Also refer to the Agriculture section of the Land Use Element.

Policies:

OS 7.1 Work with state and federal agencies to periodically update the Agricultural Resources map to reflect current conditions. (AI 11)

OS 7.2 In cooperation with individual farmers, farming organizations, and farmland conservation organizations, the County shall employ a variety of agricultural land conservation programs to improve the viability of farms and ranches and thereby ensure the long-term conservation of viable agricultural operations within Riverside County. The County shall seek out available funding for farmland conservation. Examples of programs which may be employed include: land trusts; conservation easements (under certain circumstances, these may also provide Federal and estate tax benefits to farmers); dedication incentives; Land Conservation Contracts; Farmland Security Act contracts; the Agricultural Land Stewardship Program Fund; agricultural education programs; transfer and purchase of development rights; providing adequate incentives (e.g. clustering and density bonuses) to encourage conservation of productive agricultural land in the County's Incentive Program; and providing various resource incentives to landowners (e.g. establish a reliable and/or less costly supply of irrigation water.) (AI 78)

The County of Riverside shall establish a Farmland Protection and Stewardship Committee and the Board of Supervisors shall appoint its members. The Committee shall include members of the farming community as well as other individuals and organizations committed to farmland protections and stewardship. The Committee shall develop a strategy to preserve agricultural land within Riverside County and shall identify and prioritize agricultural lands for conservation. This strategy shall not only address the preservation of

agricultural land but shall also promote sustainable agriculture within Riverside County. In developing its strategy, the Committee shall consider an array of proven techniques and, where necessary, adapt these techniques to address the unique conditions faced by the farming community within Riverside County. County staff shall assist the Committee in accomplishing its task. County Departments, that may be called upon to assist the Committee, include, but are not limited to the following: the Agricultural Commissioner, Planning Department, Assessor's Office and County Counsel. In developing its strategy, the Committee shall consult government and private organizations with expertise in farmland protection. These organizations may include, but are not limited to, the following: USDA Natural Resources Conservation Service; State Department of Conservation and its Division of Land Resource Protection; University of California Sustainable Agriculture Research and Education Program; the University of California Cooperative Extension; The Nature Conservancy; American Farmland Trust; The Conservation Fund; the Trust for Public Land; and the Land Trust Alliance.

The Committee shall, from time to time, recommend to the Board of Supervisors the adoption of policies and/or regulation that it finds will further the goals of the farmland protection and stewardship. The Committee shall also advise the Board of Supervisors regarding proposed policies that curb urban sprawl and the accompanying conversion of agricultural land to urban development, and that support and sustain continued agriculture. Planning policies that may benefit farmland conservation and fall within the purview of the Committee for review include measures to promote efficient development in and around existing communities including clustering, incentive programs, transfer of development rights, and other planning tools.

OS 7.3 Encourage conservation of productive agricultural lands and preservation of prime agricultural lands. (AI 3, 78)

OS 7.4 Encourage landowners to participate in programs that reduce soil erosion, improve soil quality, and address issues that relate to pest management. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other agencies and organizations.

OS 7.5 Encourage the combination of agriculture with other compatible open space uses in order to provide an economic advantage to agriculture. Allow by right, in areas designated Agriculture, activities related to the production of food and fiber, and support uses incidental and secondary to the on-site agricultural operation. (AI 1)

Forest Resources

The montane forest is the most complex bio-region in North America, though they can be found all over the world. Parts of Riverside County are within the Sierran Montane bio-region. These bio-regions are characterized by winter snows and summer fires, conifer species, and a great diversity of animal species.

Both of the major forests in Riverside County, the Cleveland and San Bernardino National Forests, are part of the Sierran montane range (see Figure OS-3 Parks, Forests and Recreation Areas). These forests occur on all of the higher mountain ranges of the Pacific Coast region, from southern Oregon to northern Baja California. At lower elevations, these forests commonly border mixed evergreen forest, oak woodland, and chaparral.

Policies in this section seek to protect forest resources in the Cleveland and San Bernardino National Forests. This can be accomplished through careful management of the forest ecosystem, protection of forest resources, and discouragement of the development of land uses that conflict with valuable conservation of forest land.

Policies:

OS 8.1 Cooperate with federal and state agencies to achieve the sustainable conservation of forest land as a means of providing open space and protecting natural resources and habitat lands included within the MSHCPs. (AI 3)

OS 8.2 Support conservation programs to reforest privately held forest lands.

Vegetation

"Native habitat for plants and animals endemic to this area that make up such important part of our natural heritage now have interconnected spaces in a number of locations that allow these natural communities to prosper and be sustained."

– RCIP Vision Statement

The vegetation/flora of Riverside County is exceedingly diverse in its size, shape and form, yet various species share a common unity in their adaptation to climate and environmental conditions. Further, habitat areas are strongly characterized by flora, in addition to the fauna/animal life, that thrives within the vegetation. Although ecological conditions may fluctuate and affect various plant communities, these natural changes occur gradually, with most species adapting by changing their physical form and structure. Over thousands of years, both the landscape and the plants upon it have slowly evolved together, so that those plant species with the best record of survival in a specific setting have usually become the most prominent identifying characteristics of that setting.

As development continues in the County, the natural succession and evolution of vegetation is altered. This disturbance of vegetation results in changes that are often drastic in wildlife habitats, microclimates, water absorption and purification, soil erosion, fires, and aesthetic quality. The management of vegetation will assure the continued viability of habitat communities within the County for present and future generations. See Figure OS-4, Western Riverside County Vegetation, for a map of those vegetation types in the western portion of the County.

Native vegetation must be managed in order to maintain the ecological diversity of the County. The policies that follow are intended to protect superior examples of native vegetation resources in conjunction with permitted uses.

Policies:

OS 9.1 Update the Vegetation Map for Western Riverside County in consultation with the California Department of Fish and Game, the Natural Diversity Data Base, the United States Forest Service, and other knowledgeable agencies. The County shall also provide these agencies with data as needed. (AI 11)

OS 9.2 Expand Vegetation mapping to include the eastern portion of the County of Riverside. (AI 11)

OS 9.3 Maintain and conserve superior examples of native trees, natural vegetation, stands of established trees, and other features for ecosystem, aesthetic, and water conservation purposes. (AI 3, 79)

OS 9.4 Conserve the oak tree resources in the County. (AI 3, 78)

OS 9.5 Encourage research and education on the effects of smog and other forms of pollution on human health and on natural vegetation.

Renewable Energy

Conservation policies in this element direct the protection of the County's physical resources as well as its energy resources, including renewable energy. This category of energy resources includes wind, solar, geothermal, and biomass resources. Although the current use of these resources is not wide-spread, they have considerable potential. Renewable energy can be developed as a substitute for oil, natural gas, and other limited energy supplies used for electricity generation, and to reduce consumption of these supplies. Also refer to the Energy Conservation policies in the Energy Resources section of this element.

Wind Energy

Wind energy generation installation, known also as Wind Energy Conversion Systems (WECS), are a well established industry in the San Gorgonio Pass and Coachella Valley areas of the County. General regulatory issues to be considered in relation to wind energy are aesthetics, safety, noise, air navigation interferences, land use, wildlife and general ecology, slopes and erosion, PM_{10} and dust control, wind access and equity.

Policies:

OS 10.1 Provide for orderly and efficient wind energy development in a manner that maximizes beneficial uses of the wind resource and minimizes detrimental effects to the residents and the environment of the County.

OS 10.2 Continue the County's Wind Implementation Monitoring Program (WIMP) in order to study the evolution of wind energy technology, identify means to solve environmental and community impacts, and provide for an ability to respond with changes in the County's regulatory structure.(AI 72)

Figure OS- 3 Parks, Forests, and Recreation Areas

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Figure OS- 4 Western Riverside County Vegetation

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Solar Energy

Solar radiation in the form of sunlight can be utilized for energy production in two ways. Active solar systems involve the use of mechanical devices to convert solar energy to heat or electricity. Passive solar systems utilize natural heating and cooling from the sun through building orientation and building design techniques.

Policies:

OS 11.1 Enforce the state Solar Shade Control Act, which promotes all feasible means of energy conservation and all feasible uses of alternative energy supply sources. (AI 62, 65, 66, 70)

OS 11.2 Support and encourage voluntary efforts to provide active and passive solar access opportunities in new developments. (AI 63, 64)

OS 11.3 Permit and encourage the use of passive solar devices and other state-of-the-art energy resources. (AI 62, 63, 64)

Geothermal Resources

"Geothermal resources" mean the natural heat of the earth, the energy, in whatever form, below the surface of the earth present in, resulting from, or created by, or that may be extracted from, such natural heat, and all minerals in solution or other products obtained from naturally heated fluids, brines, associated gases, and steam, in whatever form, found below the surface of the earth, but excluding oil, hydrocarbon gas or other hydrocarbon substances.

Geothermal resources can be used for electricity production as geothermal steam can be used to run turbines. The exploitation of these resources, however, is frequently accompanied by detrimental impacts on the environment. Among these are the emission of toxic gases and chemical substances that result in the degradation of air quality, the threat of water pollution, damage to living organisms, and hazards to public health. Additional problems arise from the heavily industrial character of geothermal operations for electrical generation; the frequent occurrence of exceptional natural, scenic, and archaeological values in geothermal resource areas; and the adverse effects that geothermal fluid removal may have on nearby hot springs and other natural thermal features. Currently there is no active geothermal energy production in the County, though geothermal resources are known to exist in the County.

Policies:

OS 12.1 Allow for the development of non-electrical, direct heat uses of geothermal heat and fluids for space, agricultural, and industrial heating in situations and localities where naturally occurring hydrothermal features will not be degraded. (AI 71)

The following policies direct the use of present technologies and the extraction and conversion of energy from geothermal fluid and steam reservoirs:

OS 12.2 Base all geothermal decisions on appropriate data relating to anticipated environmental, cultural, aesthetic, archaeological and social impacts.

OS 12.3 Weigh the benefits of geothermal as a viable energy source against the protection of hot springs, geysers, thermal pools, and other thermal features for their ecological, educational, and recreational values.

OS 12.4 Permit geothermal heat utilization for space heating in buildings.

Biomass Resources

Biomass resources refer to organic materials, either wastes, residues, or specific crops, that can be converted to an energy fuel to replace conventional sources or directly used in combustion processes. Due to agricultural production in the County, resources exist that enable this technology to be more widely employed.

Policies:

OS 13.1 Encourage economic biomass conversion under sensible environmental controls. (AI 71)

NON-RENEWABLE RESOURCES

The non-renewable resources discussed in this element are mineral resources and energy resources. The Mineral Resources section of this element addresses those resources that are classified under the State Mining and Reclamation Act of 1975 (SMARA). The Energy Resources section addresses petroleum resources as well as energy conservation.

SMARA mandates the classification of valuable lands in order to protect mineral resources within the State of California subject to urban expansion or other irreversible actions. SMARA also allows the state to designate lands containing mineral deposits of regional or statewide significance. The California Division of Mines and Geology (CDMG) has identified a number of significant aggregate resource areas throughout Riverside County.

Mineral Resources

In addition to agricultural production, mineral extraction is an important component of Riverside County's economy. The County has extensive deposits of clay, limestone, iron, sand, and aggregates. Classification of land within California takes place according to a priority list that was established by the State Mining and Geology Board (SMGB) in 1982, or when the SMGB is petitioned to classify a specific area. The SMGB has also established Mineral Resources Zones (MRZ) to designate lands that contain mineral deposits. The State of California has also designated Aggregate Mineral Resource areas within the County. These mineral resource zones are mapped in Figure OS-5.

The classifications used by the state to define MRZs are as follows:

- **MRZ-1**: Areas where the available geologic information indicates no significant mineral deposits or a minimal likelihood of significant mineral deposits.
- **MRZ-2a**: Areas where the available geologic information indicates that there are significant mineral deposits.
- **MRZ-2b**: Areas where the available geologic information indicates that there is a likelihood of significant mineral deposits.
- **MRZ-3a**: Areas where the available geologic information indicates that mineral deposits are likely to exist, however, the significance of the deposit is undetermined.
- **MRZ-4**: Areas where there is not enough information available to determine the presence or absence of mineral deposits.

Figure OS- 5 Mineral Resource Areas

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Mineral deposits in the County are important to many industries, including construction, transportation and chemical processing. The value of mineral deposits within the County is enhanced by their close proximity to urban areas. However, these mineral deposits are endangered by the same urbanization that enhances their value.

The non-renewable characteristic of mineral deposits necessitates the careful and efficient development of mineral resources, in order to prevent the unnecessary waste of these deposits due to careless exploitation and uncontrolled urbanization. Management of these mineral resources will protect not only future development of mineral deposit areas, but will also guide the exploitation of mineral deposits so that adverse impacts caused by mineral extraction will be reduced or eliminated.

Policies in this section seek to conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Also refer to the Open Space-Mineral Resource Land Use Designation policies in the Land Use Element.

Policies:

OS 14.1 Require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and County Development Code provisions.

OS 14.2 Restrict incompatible land uses within the impact area of existing or potential surface mining areas.

OS 14.3 Restrict land uses incompatible with mineral resource recovery within areas designated Open Space-Mineral Resources. (AI 11)

OS 14.4 Impose conditions as necessary on mining operations to minimize or eliminate the potential adverse impact of mining operations on surrounding properties, and environmental resources.

OS 14.5 Require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.

OS 14.6 Accept California Land Conservation (Williamson Act) contracts on land identified by the state as containing significant mineral deposits subject to the use and acreage limitations established by the County.

Energy Resources

Energy resources provide the power necessary to maintain the quality of life enjoyed by most Riverside County residents. Many of the energy resources used within the County are non-renewable. Electricity and natural gas are the primary sources of household energy, while fossil fuels are the primary source of energy

Oil and gas seeps are natural springs where liquid and gaseous hydrocarbons (hydrogen-carbon compounds) leak out of the ground.

for most modes of transportation. Energy conservation and the substitution of renewable resources should be encouraged if these resources are to be preserved for the County's future generations.

Petroleum Resources

Riverside County's petroleum resources are deposited in the form of oil and gas seeps. The State Division of Oil and Gas does not report significant or active petroleum extraction in the County. Should extraction activities be undertaken in the future, the following policy provides direction for the siting of oil and gas facilities.

Policies:

OS 15.1 Enforce California Division of Oil and Gas policies that direct the siting of oil and gas facilities in urban and non-urban areas.

OS 15.2 Development of renewable resources should be encouraged.

Energy Conservation

Conservation is an important component of using energy resources in an efficient manner. Lowering energy demand by conserving both renewable and non-renewable energy is critical. Sensible energy conservation and design practices can also mitigate the "heat island" effects of urban development that increase local temperatures and result in increased energy demand.

In conjunction with the tactics proposed by the Southern California Association of Government's Regional Air Quality Management Plan, the following policies address energy conservation in Riverside County.

Policies:

OS 16.1 Continue to implement Title 24 of the State Building Code. Establish mechanisms and incentives to encourage architects and builders to exceed the energy efficiency standards of Title 24. (AI 62)

OS 16.2 Specify energy efficient materials and systems, including shade design technologies, for County buildings. (AI 68, 70)

OS 16.3 Implement public transportation systems that utilize alternative fuels when possible, as well as associated urban design measures that support alternatives to private automobile use.

OS 16.4 Undertake proper maintenance of County physical facilities to ensure that optimum energy conservation is achieved.

OS 16.5 Utilize federal, state, and utility company programs that encourage energy conservation. (AI 63, 64)

OS 16.6 Assist public buildings and institutions in converting asphalt to greenspace to address the heat island effect.

OS 16.7 Promote purchasing of energy-efficient equipment based on a fair return on investment, and use energy-savings estimates as one basis for purchasing decisions for major energy-using devices. (AI 68, 69)

OS 16.8 Promote coordination of new public facilities with mass transit service and other alternative transportation services, including bicycles, and design structures to enhance mass transit, bicycle, and pedestrian use.

OS 16.9 Encourage increased use of passive, solar design and day-lighting in existing and new structures. (AI 62, 63, 64, 65, 70)

OS 16.10 Encourage installation and use of cogenerating systems where they are cost-effective and appropriate. (AI 62, 70)

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Preservation

The RCIP Vision directs that,

> *"Preserved multi-purpose open space is viewed as a critical part of the County's system of public facilities and services required to improve the existing quality of life and accommodate new development. Strategies and incentives for voluntary preservation on private land are an integral part of the County's policy/regulatory system and are referred to nationwide as model approaches."*

The following set of policies seeks to preserve natural resources that are sensitive, rare, threatened, endangered and irreplaceable. These resources deserve special protection in order to ensure their continued viability and to improve the quality of life for citizens of Riverside County. Open space preservation can serve many purposes, including the preservation and enhancement of environmental resources for both ecological and recreational purposes, as well as the proper management of environmental hazards.

MULTIPLE SPECIES HABITAT CONSERVATION PLANS

HCP-Habitat Conservation Plan
NEPA-National Environmental Policy Act
NCCP-Natural Communities Conservation Plan
CEQA-California Environmental Quality Act
CESA-California Endangered Species Act
FESA-Federal Endangered Species Act

As urbanization has spread into Riverside County, community development has not only involved the local land use planning process, but coordination with state and federal wildlife agencies in order to obtain "take permits" for impacts to threatened and endangered species. The United States Fish and Wildlife Service and California Department of Fish and Game, hereafter "Wildlife Agencies", have authority to regulate the "take" of threatened and endangered species. The process of issuing "take permits," however, has resulted in costly delays for development interests in addition to the assemblage of piecemeal reserve systems addressing only the needs of single species. Mitigation lands have been preserved, but these have generally been small, unconnected habitat areas in which it is more difficult to sustain wildlife mobility, genetic flow, or ecosystem health. Instead, large interconnected natural areas are preferred in order to assure that the County's entire ecosystem has the potential to remain healthy.

To address the issues of wildlife health and sustainability, the County has participated in or directed the development of two Multiple Species Habitat Conservation Plans (MSHCP's). These proposed MSHCP's are stake-holder driven, comprehensive, and multi-jurisdictional, and focus on the conservation of both species and associated habitats, in order to address biological and ecological diversity conservation needs and provide mitigation for the impacts of development in Riverside County. These plans are two of several large multi jurisdictional habitat planning efforts within southern California which have been developed under the overall goal of maintaining biological diversity within a rapidly urbanizing region. The Western Riverside County MSHCP has been adopted by the County and, as of October 7, 2003, awaits approval by other jurisdictions and the Wildlife Agencies. The Coachella Valley Association of Governments' MSHCP is under preparation.

The proposed MSHCPs will allow the County and other local jurisdictions the ability to manage local land use decisions and maintain economic development flexibility, while providing a coordinated reserve system and implementation program that will facilitate the preservation of biological diversity as well as maintain the region's quality of life. Should these MSHCP's not be adopted, it will be necessary to assess development related impacts and develop associated mitigation measures on a project by project basis.

Coachella Valley Association of Governments MSHCP Program Description

The Coachella Valley Association of Governments (CVAG) is preparing, on behalf of its member agencies, a proposed Multiple Species Habitat Conservation Plan that is intended to cover 28 species of plants and animals in the Coachella Valley. Currently, this plan proposes to conserve between 200,000 and 250,000 acres of privately owned land through general plan land use designations, zoning/development standards and an aggressive acquisition program, for a total conservation area of between 700,000 to 750,000 acres.

Relationship to Area Plans

The Pass, Eastern Coachella Valley, Western Coachella Valley and REMAP Area Plans would be affected by the CVAG MSHCP, if it is adopted. These area plans contain maps and general information about the proposed MSHCP. Consult the area plans for further information.

Western Riverside County MSHCP Program Description

“In western Riverside, a high density of rare species coincides with one of the most swiftly urbanizing areas of the country,”

– Scott Ferguson, Trust for Public Land Senior Project Manager

The proposed Western Riverside County MSHCP encompasses approximately 1.26 million acres (approximately 1,997 square miles). This proposed MSHCP includes unincorporated and incorporated County land (excluding Indian land) west of the crest of the San Jacinto Mountains to the Orange County line. The planis the largest HCP ever attempted and covers multiple species and multiple habitats within multiple jurisdictions. The proposed MSHCP covers a diverse landscape from urban cities to undeveloped foothills and montane forests. In addition to the presence of multiple habitats, the plan stretches across the Santa Ana Mountains, Riverside Lowlands, San Jacinto Foothills, San Jacinto Mountains, Aqua Tibia Mountains, Desert Transition and San Bernardino Mountain bio-regions.

This proposed MSHCP is intended to serve as a Habitat Conservation Plan pursuant to section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as well as a Natural Communities Conservation Plan under the NCCP Act of 1991. If adopted, it will be used to allow incidental "take" of plant and animal species identified within the proposed MSHCP. The purpose of the proposed MSHCP is for the Wildlife Agencies to grant "take authorization" for otherwise lawful actions that may incidentally take or harm individuals of a species outside of preserve areas, in exchange for supporting assembly of a coordinated reserve system. Conservation and management duties, as well as implementation assurances, will be provided by the County and other signatory agencies or jurisdictions identified as permittees through a corresponding Implementation Agreement.

A Stakeholder Driven Process

To complement the conservation and management responsibilities assigned to the County, a property owner-initiated habitat evaluation and acquisition negotiation process has also been developed for the proposed Western Riverside County MSHCP. The Habitat Evaluation and Acquisition Negotiation Process applies to property which maybe needed for inclusion in the MSHCP Reserve or subjected to other MSHCP criteria. Under the proposed incentive-based MSHCP program, the County may obtain interests in property needed to implement the MSHCP over time. If it is determined that all or a portion of a property is needed for the MSHCP Reserve, various incentives or monetary compensation may be available to the property owner in exchange for the conveyance of property. Incentives are intended to provide a form of compensation to property owners who convey their property. As a property interest is obtained, it will become part of the MSHCP Reserve.

Relationship to Area Plans

Each area plan that is affected by the proposed Western Riverside County MSHCP contains maps that identify the areas potentially affected by the MSHCP, if it is adopted, and identification of plant and animal species to be covered by the plan. Consult the area plans for further information.

The Western Riverside County MSHCP affects the following area plans:

- *Eastvale*
- *Elsinore*
- *Harvest Valley/Winchester*
- *Highgrove*
- *Jurupa*
- *Lake Mathews/Woodcrest Lakeview/Nuevo*
- *Mead Valley*
- *Reche Canyon/Badlands*
- *REMAP*
- *San Jacinto Valley*
- *Southwest (SWAP)*
- *Sun City/Menifee Valley*
- *Temescal Canyon*
- *The Pass*

Policies:

OS 17.1 Enforce the provisions of applicable MSHCP's, if adopted, when conducting review of development applications. (AI 10)

OS 17.2 Enforce the provisions of applicable MSHCP's, if adopted when developing transportation or other infrastructure projects that have been designated as covered activities in the applicable MSHCP. (AI 10)

OS 17.3 Enforce the provisions of applicable MSHCP's, if adopted when conducting review of possible general plan amendments and/or zoning changes. (AI 10)

OS 17.4 Require the preparation of biological reports in compliance with Riverside County Planning Department Biological Report Guidelines for development related uses that require discretionary approval to assess the impacts of such development and provide mitigation for impacts to biological resources until such time as the CVAG MSHCP and/or Western Riverside County MSHCP are adopted or should one or both MSHCP's not be adopted.

OS 17.5 Establish baseline ratios for mitigating the impacts of development related uses to rare, threatened and endangered species and their associated habitats to be used until such time as the CVAG MSHCP and/or Western Riverside County MSHCP are adopted or should one or both MSHCP's not be adopted.

ENVIRONMENTALLY SENSITIVE LANDS

The County's multipurpose open space system will be created and maintained using several different techniques, all related to preservation of significant environmental resources. By preserving multi-species habitat; by creating and maintaining active and passive parks, recreation areas and trail systems; by conserving natural and scenic resources; and avoiding natural hazard areas; a complete system of open space will be achieved that ensures the County's "remarkable environmental setting" remains intact for future generations of citizens to enjoy. This section identifies policies for the preservation of environmentally sensitive land within the County of Riverside, including, but not limited to, the land to be preserved through the MSHCPs.

Also refer to the Open Space, Habitat and Natural Resource Protection policies in the Land Use Element and the policies in the Safety Element that seek to preserve environmentally sensitive lands subject to natural hazards.

Policies:

OS 18.1 Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCP's, if adopted. (AI 10)

OS 18.2 Provide incentives to landowners that will encourage the protection of significant resources in the County beyond the preservation and/or conservation required to mitigate project impacts. (AI 9)

CULTURAL AND PALEONTOLOGICAL RESOURCES

The California Historic Resources Information System (CHRIS) contains information from surveys of archaeological and cultural resources as well as the built environments. The State Historic Preservation Office (SHPO) coordinates a statewide network of Information Centers that manage and make available survey information for environmental review, planning, and research needs.

Cultural resources consist of places (historic and prehistoric archaeological sites), structures or objects that provide evidence of past human activity. They are important for scientific, historic, and/or religious reasons to cultures, communities, groups or individuals. The cultural history of Riverside County is divided chronologically into three periods: prehistory, ethnohistory and history. Native American cultures predominate in the prehistorical and ethnohistorical periods of County history. The Relative Archaeological Sensitivity of Diverse Landscapes in the County has been mapped and is shown in Figure OS-6. Three classifications have been used: high, undetermined, and low. Properties with high potential include those listed or determined eligible for listing in the National Register of Historic Places. The historical period includes settlement from 1774, with the expedition of Juan Bautista de Anza into the region, to 45 years before the present as defined by the California Environmental Quality Act (CEQA). An inventory of Historical Resources in the County has been completed and mapped, as shown in Figure OS-7.

Riverside County has also been inventoried for geologic formations known to potentially contain paleontological resources. Paleontological resources are the fossilized biotic remains of ancient environments. They are valued for the information they yield about the history of the earth and its past ecological settings. Lands with low, undetermined or high potential for finding paleontological resources are mapped on Figure OS-8, the Paleontological Sensitivity Resources map. This map is used in the environmental assessment of development proposals and the determination of required impact mitigation. Riverside County has an extensive record of fossil life starting in Jurassic time, 150 million years ago.

"A major thrust of the multipurpose open space system is the preservation of components of the ecosystem and landscape that embody the historic character and habitat of the County, even though some areas have been impacted by man-made changes."

– RCIP Vision Statement

Figure OS- 6 Relative Archaeological Sensitivity of Diverse Landscapes

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Figure OS- 7 Historical Resources

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Figure OS- 8 Paleontological Sensitivity

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Policies follow that are intended to ensure the preservation of cultural, historical, archaeological, paleontological, geological, and educational resources in the County.

Policies:

OS 19.1 Make available programs that educate students about the rich natural and manmade environment of the County, and offer them to local schools. (AI 3, 75, 76)

The following policies address cultural resources:

OS 19.2 Review all proposed development for the possibility of archaeological sensitivity.

OS 19.3 Employ procedures to protect the confidentiality and prevent inappropriate public exposure of sensitive archaeological resources when soliciting the assistance of public and volunteer organizations.

OS 19.4 Require a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

The following policies pertain to historical resources:

OS 19.5 Transmit significant development proposals to the History Division of the Riverside County Regional Park and Open-Space District for evaluation in relation to the destruction/preservation of potential historical sites. Prior to approval of any development proposal, feasible mitigation shall be incorporated into the design of the project and its conditions of approval.

OS 19.6 Enforce the Historic Building Code so that historical buildings can be preserved and used without posing a hazard to public safety.

OS 19.7 When possible, allocate resources and/or tax credits to prioritize retrofit of County historic structures, which are irreplaceable.

The following policies provide direction for paleontological resources:

OS 19.8 Whenever existing information indicates that a site proposed for development may contain biological, paleontological, or other scientific resources, a report shall be filed stating the extent and potential significance of the resources that may exist within the proposed development and appropriate measures through which the impacts of development may be mitigated.

OS 19.9 This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site grading activities, with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department

★

Three million years ago, the white sand beach at the edge of the Pacific Ocean was located near the present Interstate 15/State Route 91 interchange. The Ice Ages left fossils of giant sloths, elephants, camels, and bison that were preyed upon by giant bear, American lion and sabercats. Their remains lie waiting a few feet below the surface to be unearthed by construction excavation.

documenting any paleontological resources that are found during the course of site grading.

OS 19.10 Transmit significant development applications subject to CEQA to the San Bernardino County Museum for review, comment, and/or preparation of recommended conditions of approval with regard to paleontological resources.

OPEN SPACE, PARKS AND RECREATION

"We value the unusually rich and diverse natural environment with which we are blessed and are committed to maintaining sufficient areas of natural open space to afford the human experience of natural environments as well as sustaining the permanent viability of the unique landforms and ecosystems that define this environment."

– RCIP Vision Statement

Riverside County incorporates a wide range of open space, parks and recreational areas, including Joshua Tree National Park, and major state parks such as Anza-Borrego, the Salton Sea State Recreation Area, and Chino Hills State Park. A variety of County parks also serve residents and visitors in the western portion of the County, as well as in the desert, mountain and Colorado River regions. Riverside County maintains 35 Regional Parks, encompassing roughly 23,317 acres. Other local parks fall under the jurisdiction of County Recreation and Park Districts and serve the following areas: the Beaumont-Cherry Valley area; the Coachella Valley; the Jurupa area; the Valleywide area incorporating the San Jacinto Valley, the Winchester area, the Menifee Valley, and the Anza Valley. Parks and Recreation Areas in Riverside County have been mapped earlier in this element on Figure OS-3.

Open space and recreation areas offer residents and visitors myriad recreational opportunities while providing a valuable buffer between urbanized areas. The protection and preservation of open space areas from urbanization is an increasingly important issue for the County.

The following policies relate to the preservation, use and development of a comprehensive open space system consisting of passive open space areas, and parks and recreation areas that have recreational, ecological and scenic value.

Policies:

The following policies pertain to open space:

OS 20.1 Preserve and maintain open space that protects County environmental resources and maximizes public health and safety in areas where significant environmental hazards and resources exist.

OS 20.2 Prevent unnecessary extension of public facilities, services, and utilities, for urban uses, into Open Space-Conservation designated areas. (AI 74)

The following policies pertain to parks and recreation:

OS 20.3 Discourage the absorption of dedicated park lands by non-recreational uses, public or private. Where absorption is unavoidable, replace park lands that are absorbed by other uses with similar or improved facilities and programs. (AI 74)

OS 20.4 Provide for the needs of all people in the system of County recreation sites and facilities, regardless of their socioeconomic status, ethnicity, physical capabilities or age.

OS 20.5 Require that development of recreation facilities occurs concurrent with other development in an area. (AI 3)

OS 20.6 Require new development to provide implementation strategies for the funding of both active and passive parks and recreational sites. (AI 3)

SCENIC RESOURCES

Scenic resources are an important quality of life component for residents of the County. In general, scenic resources include areas that are visible to the general public and considered visually attractive. In addition to scenic corridors, described below, scenic resources include natural landmarks and prominent or unusual features of the landscape. For example, the Santa Rosa National Monument includes mountains or other natural features with high scenic value. Scenic backdrops include hillsides and ridges that rise above urban or rural areas or highways. Scenic vistas are points, accessible to the general public, that provide a view of the countryside. Following are policies to protect these resources and ensure that future development enhances them.

Policies:

OS 21.1 Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County. (AI 79)

SCENIC CORRIDORS

Many roadway corridors in Riverside County traverse its scenic resources. Enhancing aesthetic experiences for residents and visitors to the County promotes tourism, which is important to the County's overall economic future. Enhancement and preservation of the County's scenic resources will require careful application of scenic highway standards along Official Scenic Routes.

Policies that seek to protect and maintain resources in corridors along scenic highways are incorporated into this section. State and county eligible and designated scenic highways are included and mapped in the Circulation Element of the General Plan, as well as in the Circulation section of those area plans where scenic corridors are located

Also refer to the Scenic Corridor Sections of the Circulation and Land Use Elements.

Policies:

OS 22.1 Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses. (AI 3)

OS 22.2 Study potential scenic highway corridors for possible inclusion in the Caltrans Scenic Highways Plan.

OS 22.3 Encourage joint efforts among federal, state, and County agencies, and citizen groups to ensure compatible development within scenic corridors.

OS 22.4 Impose conditions on development within scenic highway corridors requiring dedication of scenic easements consistent with the Scenic Highways Plan, when it is necessary to preserve unique or special visual features. (AI 3)

OS 22.5 Utilize contour grading and slope rounding to gradually transition graded road slopes into a natural configuration consistent with the topography of the areas within scenic highway corridors. (AI 3)

County of Riverside General Plan
Lakeview/Nuevo Area Plan

COUNTY OF RIVERSIDE

Transportation and Land Management Agency
4080 Lemon Street, 9th Floor
Riverside, CA 92502-1409
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October 2003
[GPA 775; BOS RSLN 2007-494; 12/18/07]

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Vision Summary

The County of Riverside General Plan and Area Plans have been shaped by the RCIP Vision. Following is a summary of the Vision Statement that includes many of the salient points brought forth by the residents of the Lakeview/Nuevo Area Plan as well as the rest of the County of Riverside. The RCIP Vision reflects the County of Riverside in the year 2020. So, "fast forward" yourself to 2020 and here is what it will be like.

"Riverside County is a family of special communities in a remarkable environmental setting."

It is now the year 2020. This year (incidentally, also a common reference to clear vision), is an appropriate time to check our community vision. Twenty years have passed since we took an entirely new look at how the County of Riverside was evolving. Based on what we saw, we set bold new directions for the future. As we now look around and move through the County, the results are notable. They could happen only in response to universal values strongly held by the people. Some of those values are:

- Real dedication to a sense of community;
- Appreciation for the diversity of our people and places within this expansive landscape;
- Belief in the value of participation by our people in shaping their communities;
- Confidence in the future and faith that our long term commitments will pay off;
- Willingness to innovate and learn from our experience;
- Dedication to the preservation of the environmental features that frame our communities;
- Respect for our differences and willingness to work toward their resolution;
- Commitment to quality development in partnership with those who help build our communities;
- The value of collaboration by our elected officials in conducting public business.

Those values and the plans they inspired have brought us a long way. True, much remains to be done. But our energies and resources are being invested in a unified direction, based on the common ground we have affirmed many times during the last 20 years. Perhaps our achievements will help you understand why we believe we are on the right path.

Population Growth

The almost doubling of our population in only 20 years has been a challenge, but we have met it by focusing that growth in areas that are well served by public facilities and services or where they can readily be provided. Major transportation corridors serve our communities and nearby open space preserves help define them. Our growth focus is on quality, not quantity. That allows the numbers to work for us and not against us. We enjoy an unprecedented clarity regarding what areas must not be developed and which ones should be developed. The resulting pattern of growth concentrates development in key areas rather than spreading it uniformly throughout the County. Land is used more efficiently, communities operate at more of a human scale, and transit systems to supplement the automobile are more feasible. In fact, the customized "Oasis" transit system now operates quite successfully in several cities and communities.

Transportation

It is no secret that the distances in this vast County can be a bit daunting. Yet, our transportation system has

Our Communities and Neighborhoods

Our choices in the kind of community and neighborhood we prefer is almost unlimited here. From sophisticated urban villages to quality suburban neighborhoods to spacious rural enclaves, we have them all. If you are like most of us, you appreciate the quality schools and their programs that are the centerpiece of many of our neighborhoods. Not only have our older communities matured gracefully, but we boast several new communities as well. They prove that quality of life comes in many different forms.

Housing

We challenge you to seek a form of housing or a range in price that does not exist here. Our housing choices, from rural retreat to suburban neighborhood to exclusive custom estate are as broad as the demand for housing requires. Choices include entry level housing for first time buyers, apartments serving those not now in the buying market, seniors' housing, and world class golf communities. You will also find "smart" housing with the latest in built-in technology as well as refurbished historic units. The County of Riverside continues to draw people who are looking for a blend of quality and value.

kept pace amazingly well with the growth in population, employment and tourism and their demands for mobility. We are perhaps proudest of the new and expanded transportation corridors that connect growth centers throughout the County. They do more than provide a way for people and goods to get where they need to be. Several major corridors have built-in expansion capability to accommodate varied forms of transit. These same corridors are designed with a high regard for the environment in mind, including providing for critical wildlife crossings so that our open spaces can sustain their habitat value.

Conservation and Open Space Resources

The often-impassioned conflicts regarding what lands to permanently preserve as open space are virtually resolved. The effort to consider our environmental resources, recreation needs, habitat systems, and visual heritage as one comprehensive, multi-purpose open space system has resulted in an unprecedented commitment to their preservation. In addition, these spaces help to form distinctive edges to many of our communities or clusters of communities. What is equally satisfying is that they were acquired in a variety of creative and equitable ways.

Air Quality

It may be hard to believe, but our air quality has actually improved slightly despite the phenomenal growth that has occurred in the region. Most of that growth, of course, has been in adjacent counties and we continue to import their pollutants. We are on the verge of a breakthrough in technical advances to reduce smog from cars and trucks. Not only that, but our expanded supply of jobs reduces the need for people here to commute as far as in the past.

Jobs and Economy

In proportion to population, our job growth is spectacular. Not only is our supply of jobs beyond any previously projected level, it has become quite diversified. Clusters of new industries have brought with them an array of jobs that attract skilled labor and executives alike. We are particularly enthusiastic about the linkages between our diversified business community and our educational system. Extensive vocational training programs, coordinated with businesses, are a constant source of opportunities for youth and those in our labor force who seek further improvement.

Agricultural Lands

Long a major foundation of our economy and our culture, agriculture remains a thriving part of the County of Riverside. While we have lost some agriculture to other forms of development, other lands have been brought into agricultural production. We are still a major agricultural force in California and compete successfully in the global agricultural market.

Educational System

Quality education, from pre-school through graduate programs, marks the County of Riverside as a place where educational priorities are firmly established. A myriad of partnerships involving private enterprise and cooperative programs between local governments and school districts are in place, making the educational system an integral part of our communities.

Plan Integration

The coordinated planning for multi-purpose open space systems, community based land use patterns, and a diversified transportation system has paid off handsomely. Integration of these major components of community building has resulted in a degree of certainty and clarity of direction not commonly achieved in the face of such dynamic change.

Financial Realities

From the very beginning, our vision included the practical consideration of how we would pay for the qualities our expectations demanded. Creative, yet practical financing programs provide the necessary leverage to achieve a high percentage of our aspirations expressed in the updated RCIP.

Intergovernmental Cooperation

As a result of the necessary coordination between the County, the cities and other governmental agencies brought about through the RCIP, a high degree of intergovernmental cooperation and even partnership is now commonplace. This way of doing public business has become a tradition and the County of Riverside is renowned for its many model intergovernmental programs.

Introduction

Throughout the Area Plan, special features have been included to enhance the readability and practicality of the information provided. Look for these elements:

Quotes — quotations from the RCIP Vision or individuals involved or concerned with Riverside County.

Factoids — interesting information about Riverside County that is related to the element

References — contacts and resources that can be consulted for additional information

Definitions — clarification of terms and vocabulary used in certain policies or text.

Unincorporated land is all land within the County that is not within an incorporated city or an Indian Nation. Generally, it is subject to policy direction and under the land use authority of the Board of Supervisors. However, it may also contain state and federal properties that lie outside of Board authority.

Lakeview/Nuevo, despite its dry, semi-desert climate, includes a segment of one of the major waterways in Riverside County: the San Jacinto River. The San Jacinto River is located in a valley pressed between the Bernasconi Hills and the Lakeview Mountains, which dominate the southeasterly half of the planning area. The Lakeview/Nuevo Area Plan is surrounded by mountain ranges in virtually every direction that create the sense of expanse so predominant in Riverside County.

The Lakeview/Nuevo Area Plan doesn't just provide a description of the location, physical characteristics, and special features here. It contains a Land Use Plan, statistical summaries, policies, and accompanying exhibits that allow anyone interested in the future of this distinctive valley to understand the physical, environmental, and regulatory characteristics that make this such a unique area. Background information also provides insights that help in understanding the issues that require special focus here and the reasons for the more localized policy direction found in this document.

Each section of this plan addresses critical issues facing Lakeview/Nuevo. Perhaps a description of these sections will help in understanding the organization of the Area Plan as well as appreciating the comprehensive nature of the planning process that led to it. The Location section explains where the planning area fits with what is around it and how it relates to the cities that impact it. Physical features are described in a section that highlights the planning area's communities, surrounding environment and natural resources. This leads naturally to the Land Use Plan section, which describes the land use system guiding development at both the countywide and area plan levels.

While a number of these designations reflect the unique features found only in the Lakeview/Nuevo planning area, a number of special policies are still necessary to address unique situations. The Policy Areas section presents these policies. Land use related issues are addressed in the Land Use section. The Area Plan also describes relevant transportation issues, routes, and modes of transportation in the Circulation section. The key to understanding our valued open space network is described in the Multipurpose Open Space section. There are both natural and man made hazards to consider, and they are spelled out in the Hazards section.

The Lakeview/Nuevo planning area contains only unincorporated land. The incorporated cities of Perris and San Jacinto abut the planning area on the western and eastern borders. Coordination with these cities was a critical component in shaping the Area Plan.

A Special Note on Implementing the Vision

The preface to the Lakeview/Nuevo Area Plan is a summary version of the Riverside County Vision. That summary is, in turn, simply an overview of a much more extensive and detailed Vision of Riverside County two decades or more into the future. This area plan, as part of the Riverside County General Plan, is one of the major devices for making the Vision a reality.

No two area plans are the same. Each represents a unique portion of the incredibly diverse place known as Riverside County. While many share certain common features, each of the plans reflects the special characteristics that define its area's unique identity. These features include not only physical qualities, but also the particular boundaries used to define them, the stage of development they have reached, the dynamics of change expected to affect them, and the numerous decisions that shape development and conservation in each locale. That is why the Vision cannot and should not be reflected uniformly.

Policies at the General Plan and Area Plan levels implement the Riverside County Vision in a range of subject areas as diverse as the scope of the Vision itself. The land use pattern contained in this area plan is a further expression of the Vision as it is shaped to fit the terrain and the conditions in the Lakeview/Nuevo planning area.

To illustrate how the Vision has shaped this area plan, the following highlights reflect certain strategies that link the Vision to the land. This is not a comprehensive enumeration; rather, it emphasizes a few of the most powerful and physically tangible examples.

Community Centers. This method of concentrating development to achieve community focal points, stimulate a mix of activities, promote economic development, achieve more efficient use of land, create a transit friendly and walkable environment, and offer a broader mix of housing choices is a major device for implementing the Vision. The Community Center designation has been given to two areas, each encompassing portions of two adjacent specific plans westerly of the San Jacinto River. These areas are considered Village Centers because they are intended to serve the surrounding areas and act as a focal point for the community. The surrounding land uses, such as Medium Density Residential and Commercial Retail, complement the intended pedestrian-friendly atmosphere by creating a human-scaled environment.

San Jacinto River. The San Jacinto River, like other waterways in Riverside County, is seasonal and is normally dry during the summer months. However, the San Jacinto River is one of the most significant waterways in western Riverside County. In addition to offering the obvious benefits to drainage, flood control, and water conservation, the San Jacinto River is an important corridor for species migration and habitat preservation. A channelization project is planned for the San Jacinto River that will balance the need for protection against flood hazards with the need for a healthy ecosystem.

Environmental Setting. The Lakeview Mountains and the Bernasconi Hills are both a part of the Lakeview/Nuevo planning area. Their distinct rock outcroppings and rugged character provide a visual identity for the planning area. Both ranges provide some recreational opportunities and an area for some wildlife habitat.

It is important to note that the data in this area plan is current as of October 7, 2003. Any General Plan amendments approved subsequent to that date are not reflected in this area plan and must be supported by their own environmental documentation. A process for incorporating any applicable portion of these amendments into this area plan is part of the General Plan Implementation Program.

Location

The central location of the Lakeview/Nuevo area is clearly evident in Figure 1, Location. This planning area is surrounded by four area plans that constitute a major portion of western Riverside County. Starting to the south and moving clockwise, we find the adjacent Harvest Valley/ Winchester, Mead Valley, Reche Canyon/Badlands and San Jacinto Valley Area Plans. The City of Perris borders this area plan on the west and the City of San Jacinto borders this area plan on the east, while Lake Perris is located immediately to the north.

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Figure 1: Location

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Features

The Riverside County Vision builds heavily on the value of its remarkable environmental setting. That applies here as well. The central location of Lakeview/Nuevo affords an ample view of the mountain vistas that dominate the remarkable setting of the western County. These defining characteristics are shown on Figure 2, Physical Features, and further described below. This section describes the setting, features, and functions that are unique to the Lakeview/Nuevo planning area.

An overview of Lakeview/Nuevo planning area

SETTING

The Lakeview/Nuevo planning area contains a wide valley formed by the San Jacinto River. This valley contains agricultural land as well as much of the development within the planning area. The Bernasconi Hills create a border in the northwest, while the Lakeview Mountains form the eastern boundary of the planning area. The rural community of Juniper Flats is located easterly of Nuevo, close to the Lakeview Mountains. The San Jacinto Wildlife Area is located at the foot of the Bernasconi Hills and forms the northern boundary of the planning area. The Colorado River Aqueduct runs underground in an east-to-west orientation through the northern portion of the planning area.

UNIQUE FEATURES

Lakeview Mountains

The Lakeview Mountains define the bulk of the central and southeastern portion of the Lakeview/Nuevo planning area and create a scenic backdrop for the planning area. The mountains, which are dotted with picturesque rock outcroppings, gently slope west to the valley that contains the San Jacinto River. Juniper Flats, a small rural area, is located close to the Lakeview Mountains.

A view of the Bernasconi Hills.

Bernasconi Hills

The Bernasconi Hills are located within the Lake Perris State Recreation Area. A portion of these hills are located in the northwest corner of the Lakeview/Nuevo planning area. The Bernasconi Hills are barren, steep, and rugged peaks that are a stark contrast to Lake Perris, which is located immediately north of this planning area. The hills and lake offer opportunities for such outdoor recreational activities as camping, hunting, water sports, fishing, picnicking, and biking.

Watercourses are the corridors of streams, rivers, and creeks, whether permanent or seasonal, and whether natural or channelized.

San Jacinto River

The San Jacinto River flows westward from Lake Hemet in the Santa Rosa Mountains, through Canyon Lake, and then to Lake Elsinore. It flows through the central portion of this planning area and has a profound influence over its land use patterns. Currently, the river is a semi-natural watercourse that is normally dry. Through the planning area, the river is partially channelized with

earthen levees. The lands adjacent to the river are currently vacant or agricultural in nature.

Local serving commercial center in Lakeview

Dairies help characterize the community of Lakeview.

Currently, there is a proposal to channelize the river with earthen berms from the Ramona Expressway to Interstate 215 to reduce flood threats and facilitate future development of adjacent properties. The project is sponsored by property owners in the area and is being prepared by the County of Riverside Flood Control and Water Conservation District. If this project is approved by Federal agencies, the flood threat posed by this river will be significantly reduced. The broad valley in which this river sits may then be developed per the Area Plan Land Use Map. It is assumed that the channelization project will be approved, and it is included in the Area Plan Land Use Map. While the location and width of the channel has been decided, the Open Space-Conservation Habitat areas required to facilitate wildlife movement and biological diversity are not precisely known. Therefore, the Land Use Plan is subject to changes to reflect the final configuration of the habitat conservation areas.

San Jacinto Wildlife Area

The San Jacinto Wildlife Area is nestled at the base of the Bernasconi Hills in the northwestern portion of the planning area. While the San Jacinto Wildlife Area is comprised of over 5,945 acres of restored natural lands, including wetlands, only a portion of the Wildlife Area is located within the Lakeview/Nuevo planning area. Because of the wetlands within the reserve, a large array of bird species, including birds of prey and waterfowl, migrate to this area every year.

Majestic palm trees line Hansen Avenue in Lakeview

UNIQUE COMMUNITIES

Lakeview

The community of Lakeview, in the northeast corner of the planning area, is characterized by predominantly residential and agricultural uses. Dairies and agricultural uses dominate the land north of the Ramona Expressway, and residential/equestrian uses are found south of the expressway. The residential uses in Lakeview are rural in nature and typically are located on lots between one-half and two acres in size. There is a small cluster of commercial uses at the intersection of the Ramona Expressway and Hansen Avenue, and a prominent warehouse distribution center located on the eastern edge of the community. Hansen Avenue, which runs north-south, is the major roadway in Lakeview, and is lined with tall, majestic palm trees.

A ballfield, above, and church are part of the focus for the community of Nuevo.

Figure 2: Physical Features

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Nuevo

The Nuview Elementary School.

The community of Nuevo is located between the San Jacinto River on the west and the foothills of the Lakeview Mountains on the east. Nuevo Road and Lakeview Avenue are the major streets within this community. Nuevo is a rural community with an equestrian focus. While there are some smaller parcels, the vast majority of lots are typically between one-half and two acres in size. The community of Nuevo is anchored by a small neighborhood village located at the intersection of Lakeview Avenue and Nuevo Road. This village includes local serving commercial uses, a school, a ballfield, and a church. Surrounding the village are some of the smaller residential lots in the area. Community facilities, including a fire station, post office, and school, and a number of private equestrian facilities, are located in the area north of Nuevo Road.

Juniper Flats

Juniper Flats is a rural residential community tucked away close to the Lakeview Mountains. This small rural, equestrian-oriented community consists of single family homes on large lots. Juniper Flats Road, a two-lane road, provides the only all weather access through this community.

The Lakeview Mountains provide a backdrop for the community.

Boulder Rise

Nestled on the western face of the Lakeview Mountains is the small rural community of Boulder Rise. Boulder Rise is located roughly in the area east of Menifee Road and south of San Jacinto Avenue. This area is characterized by the large lot residential uses set among numerous boulder outcroppings.

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Land Use Plan

> *Each of our rural areas and communities has a special character that distinguishes them from urban areas and from each other. They benefit from some conveniences such as small-scale local commercial services and all-weather access roads, yet maintain an unhurried, uncrowded lifestyle.*
>
> *-RCIP Vision*

The Lakeview/Nuevo Land Use Plan focuses on preserving the unique features in the Lakeview/Nuevo planning area and, at the same time, guides the accommodation of future growth. To accomplish this, more detailed land use designations are applied than for the countywide General Plan.

The Lakeview/Nuevo Land Use Plan, Figure 3, depicts the geographic distribution of land uses within this planning area. The Area Plan is organized around 30 Area Plan land use designations and 5 overlays. These area plan land uses derive from, and provide more detailed direction than, the five General Plan Foundation Component land uses: Open Space, Agriculture, Rural, Rural Community, and Community Development. Table 1, Land Use Designations Summary, outlines the development intensity, density, typical allowable land uses, and general characteristics for each of the Area Plan land use designations within each Foundation Component. The General Plan Land Use Element contains more detailed descriptions and policies for the Foundation Components and each of the Area Plan land use designations.

Many factors led to the designation of land use patterns. Among the most influential were the Riverside County Vision and Planning Principles, both of which focused, in part, on preferred patterns of development within the County; the Community and Environmental Transportation Acceptability Process (CETAP) that focused on major transportation corridors; the Multiple Species Habitat Conservation Plan (MSHCP) that focused on opportunities and strategies for significant open space and habitat preservation; established patterns of existing uses and parcel configurations; current zoning; and the oral and written testimony of County residents, property owners, and representatives of cities and organizations at the many Planning Commission and Board of Supervisors hearings. The result of these considerations is shown in Figure 3, Land Use Plan, which portrays the location and extent of proposed land uses. Table 2, Statistical Summary of Lakeview/Nuevo Area Plan, provides a summary of the projected development capacity of the plan if all uses are built as proposed. This table includes dwelling unit, population, and employment capacities.

LAND USE CONCEPT

The Lakeview/Nuevo Land Use Plan provides for significant growth in its western half, near the City of Perris. Residential density gradually decreases east of the San Jacinto River until the Lakeview Mountains, where the Mountainous and Rural land use designations reflect the area's rugged nature. A series of adopted specific plans, concentrated west of the San Jacinto River, have influenced land use patterns and residential densities in this area. East of the San Jacinto River, the Land Use Plan generally reflects a pattern of predominantly low density residential character with pockets of commercial uses interspersed within the communities of Lakeview and Nuevo. Continuing east past Lakeview Avenue, the land use pattern provides primarily for Rural Community-Low Density Residential land uses with clusters of Medium Density Residential neighborhoods, Public Facilities, and Commercial Retail designations.

Community Centers

For more information on Community Center types, please refer to the Land Use Policies within this area plan and the Land Use Designations section of the General Plan Land Use Element.

Two Community Centers are designated in the Lakeview/Nuevo planning area. The first Community Center has been identified in the valley adjacent to the Bernasconi Hills along the Ramona Expressway. The second Community Center is located west of the San Jacinto River on Nuevo Road. These Community Center designations would accommodate Village Center type development, which includes pedestrian oriented "downtowns" with uses that serve the nearby residential neighborhoods. Some typical uses found in a Village Center include residential units, retail commercial, office, public facilities, parks, museums, public services, employment, and entertainment uses.

Both of these Community Center designations include portions of two adjacent approved Specific Plans, and are rooted in Planning Areas identified as mixed use planning areas or areas that could accommodate either commercial or higher intensity residential development.

Figure 3: Land Use Plan

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Table 1: Land Use Designations Summary

Foundation Component	Area Plan Land Use Designation	Building Intensity Range (du/ac or FAR) [1, 2,3]	Notes
Agriculture	Agriculture (AG)	10 ac min.	• Agricultural land including row crops, groves, nurseries, dairies, poultry farms, processing plants, and other related uses. • One single-family residence allowed per 10 acres except as otherwise specified by a policy or an overlay.
Rural	Rural Residential (RR)	5 ac min.	• Single-family residences with a minimum lot size of 5 acres. • Allows limited animal keeping and agricultural uses, recreational uses, compatible resource development (not including the commercial extraction of mineral resources) and associated uses and governmental uses.
	Rural Mountainous (RM)	10 ac min.	• Single-family residential uses with a minimum lot size of 10 acres. • Areas of at least 10 acres where a minimum of 70% of the area has slopes of 25% or greater. • Allows limited animal keeping, agriculture, recreational uses, compatible resource development (which may include the commercial extraction of mineral resources with approval of a SMP) and associated uses and governmental uses.
	Rural Desert (RD)	10 ac min.	• Single-family residential uses with a minimum lot size of 10 acres. • Allows limited animal keeping, agriculture, recreational, renewable energy uses including solar, geothermal and wind energy uses, as well as associated uses required to develop and operate these renewable energy sources, compatible resource development (which may include the commercial extraction of mineral resources with approval of SMP), and governmental and utility uses.
Rural Community	Estate Density Residential (RC-EDR)	2 ac min.	• Single-family detached residences on large parcels of 2 to 5 acres. • Limited agriculture, intensive equestrian and animal keeping uses are expected and encouraged.
	Very Low Density Residential (RC-VLDR)	1 ac min.	• Single-family detached residences on large parcels of 1 to 2 acres. • Limited agriculture, intensive equestrian and animal keeping uses are expected and encouraged.
	Low Density Residential (RC-LDR)	½ ac min.	• Single-family detached residences on large parcels of ½ to 1 acre. • Limited agriculture, intensive equestrian and animal keeping uses are expected and encouraged.
Open Space	Conservation (C)	N/A	• The protection of open space for natural hazard protection, and natural and scenic resource preservation. Existing agriculture is permitted.
	Conservation Habitat (CH)	N/A	• Applies to public and private lands conserved and managed in accordance with adopted Multi Species Habitat and other Conservation Plans.
	Water (W)	N/A	• Includes bodies of water and natural or artificial drainage corridors. • Extraction of mineral resources subject to SMP may be permissible provided that flooding hazards are addressed and long term habitat and riparian values are maintained.
	Recreation (R)	N/A	• Recreational uses including parks, trails, athletic fields, and golf courses. • Neighborhood parks are permitted within residential land uses.
	Rural (RUR)	20 ac min.	• One single-family residence allowed per 20 acres. • Extraction of mineral resources subject to SMP may be permissible provided that scenic resources and views are protected.
	Mineral Resources (MR)	N/A	• Mineral extraction and processing facilities. • Areas held in reserve for future mineral extraction and processing.
Community Development	Estate Density Residential (EDR)	2 ac min.	• Single-family detached residences on large parcels of 2 to 5 acres. • Limited agriculture and animal keeping is permitted, however, intensive animal keeping is discouraged.
	Very Low Density Residential (VLDR)	1 ac min.	• Single-family detached residences on large parcels of 1 to 2 acres. • Limited agriculture and animal keeping is permitted, however, intensive animal keeping is discouraged.
	Low Density Residential (LDR)	½ ac min.	• Single-family detached residences on large parcels of ½ to 1 acre. • Limited agriculture and animal keeping is permitted, however, intensive animal keeping is discouraged.
	Medium Density Residential (MDR)	2 - 5 du/ac	• Single-family detached and attached residences with a density range of 2 to 5 dwelling units per acre. • Limited agriculture and animal keeping is permitted, however, intensive animal keeping is discouraged. • Lot sizes range from 5,500 to 20,000 sq. ft., typical 7,200 sq. ft. lots allowed.
	Medium High Density Residential (MHDR)	5 - 8 du/ac	• Single-family attached and detached residences with a density range of 5 to 8 dwelling units per acre. • Lot sizes range from 4,000 to 6,500 sq. ft.
	High Density Residential (HDR)	8 - 14 du/ac	• Single-family attached and detached residences, including townhouses, stacked flats, courtyard homes, patio homes, townhouses, and zero lot line homes .
	Very High Density Residential (VHDR)	14 - 20 du/ac	• Single-family attached residences and multi-family dwellings.

Table 1: Land Use Designations Summary

Foundation Component	Area Plan Land Use Designation	Building Intensity Range (du/ac or FAR) [1, 2,3]	Notes
Community Development	Highest Density Residential (HHDR)	20+ du/ac	• Multi-family dwellings, includes apartments and condominium. • Multi-storied (3+) structures are allowed.
	Commercial Retail (CR)	0.20 - 0.35 FAR	• Local and regional serving retail and service uses. The amount of land designated for Commercial Retail exceeds that amount anticipated to be necessary to serve the County's population at build out. Once build out of Commercial Retail reaches the 40% level within any Area Plan, additional studies will be required before CR development beyond the 40 % will be permitted.
	Commercial Tourist (CT)	0.20 - 0.35 FAR	• Tourist related commercial including hotels, golf courses, and recreation/amusement activities.
	Commercial Office (CO)	0.35 - 1.0 FAR	• Variety of office related uses including financial, legal, insurance and other office services.
	Light Industrial (LI)	0.25 - 0.60 FAR	• Industrial and related uses including warehousing/distribution, assembly and light manufacturing, repair facilities, and supporting retail uses .
	Heavy Industrial (HI)	0.15 - 0.50 FAR	• More intense industrial activities that generate significant impacts such as excessive noise, dust, and other nuisances.
	Business Park (BP)	0.25 - 0.60 FAR	• Employee intensive uses, including research & development, technology centers, corporate offices, "clean" industry and supporting retail uses.
	Public Facilities (PF)	≤ 0.60 FAR	• Civic uses such as County administrative buildings and schools.
	Community Center (CC)	5 - 40 du/ac 0.10 - 0.3 FAR	• Includes combination of small-lot single family residences, multi-family residences, commercial retail, office, business park uses, civic uses, transit facilities, and recreational open space within a unified planned development area. This also includes Community Centers in adopted specific plans.
	Mixed Use Planning Area		• This designation is applied to areas outside of Community Centers. The intent of the designation is not to identify a particular mixture or intensity of land uses, but to designate areas where a mixture of residential, commercial, office, entertainment, educational, and/or recreational uses, or other uses is planned.

Overlays and Policy Areas
Overlays and Policy Areas are not considered a Foundation Component. Overlays and Policy Areas address local conditions and can be applied in any Foundation Component. The specific details and development characteristics of each Policy Area and Overlay are contained in the appropriate Area Plan.

Community Development Overlay (CDO)	• Allows Community Development land use designations to be applied through General Plan Amendments within specified areas within Rural, Rural Community, Agriculture, or Open Space Foundation Component areas. Specific policies related to each Community Development Overlay are contained in the appropriate Area Plan.
Community Center Overlay (CCO)	• Allows for either a Community Center or the underlying designated land use to be developed.
Rural Village Overlay (RVO) and Rural Village Overlay Study Area (RVOSA)	• The Rural Village Overlay allows a concentration of residential and local-serving commercial uses within areas of rural character. • The Rural Village Overlay allows the uses and maximum densities/intensities of the Medium Density Residential and Medium High Density Residential and Commercial Retail land use designations. • In some rural village areas, identified as Rural Village Overlay Study Areas, the final boundaries will be determined at a later date during the consistency zoning program. (The consistency zoning program is the process of bringing current zoning into consistency with the adopted general plan.)
Watercourse Overlay (WCO)	• The Watercourse Overlay designates watercourses, including natural or controlled stream channels and flood control channels.
Specific Community Development Designation Overlay	• Permits flexibility in land uses designations to account for local conditions. Consult the applicable Area Plan text for details.
Policy Areas	• Policy Areas are specific geographic districts that contain unique characteristics that merit detailed attention and focused policies. These policies may impact the underlying land use designations. At the Area Plan level, Policy Areas accommodate several locally specific designations, such as the Limonite Policy Area (Jurupa Area Plan), or the Scott Road Policy Area (Sun City/Menifee Valley Area Plan). Consult the applicable Area Plan text for details.

NOTES:
[1] FAR = Floor Area Ratio, which is the measurement of the amount of non-residential building square footage in relation to the size of the lot. Du/ac = dwelling units per acre, which is the measurement of the amount of residential units in a given acre.
[2] The building intensity range noted is exclusive, that is the range noted provides a minimum and maximum building intensity.
[3] Clustering is encouraged in all residential designations. The allowable density of a particular land use designation may be clustered in one portion of the site in smaller lots, as long as the ratio of dwelling units/area remains within the allowable density range associated with the designation. The rest of the site would then be preserved as open space or a use compatible with open space (e.g., agriculture, pasture or wildlife habitat). Within the Rural Foundation Component and Rural Designation of the Open Space Foundation Component, the allowable density may be clustered as long as no lot is smaller than ½ acre. This ½ acre minimum lot size also applies to the Rural Community Development Foundation Component. However, for sites adjacent to Community Development Foundation Component areas, 10,000 square foot minimum lots are allowed. The clustered areas would be a mix of 10,000 and ½ acre lots. In such cases, larger lots or open space would be required near the project boundary with Rural Community and Rural Foundation Component areas.

Table 2: Statistical Summary of Lakeview/Nuevo Area Plan

Base Land Use Designations [a, b]				
Land Use Designation	**Acreage**	**Dwelling Units**	**Population**	**Employment**
Agriculture Foundation Component				
Agriculture (AG)	2,031	102	306	102
Agriculture Total	***2,031***	***102***	***306***	***102***
Rural Foundation Component				
Rural Residential (RR)	4,873	731	2,200	NA
Rural Mountainous (RM)	4,122	206	620	NA
Rural Desert (RD)	0	0	0	NA
Rural Total	***8,995***	***937***	***2,820***	***0***
Rural Community Foundation Component				
Estate Density Residential (RC-EDR)	1,044	365	1,100	NA
Very Low Density Residential (RC-VLDR)	2,091	1,045	3,147	NA
Low Density Residential (RC-LDR)	3,009	3,611	10,869	NA
Rural Community Total	***6,144***	***5,021***	***15,116***	***0***
Open Space Foundation Component				
Open Space-Conservation (OS-C)	794	NA	NA	NA
Open Space-Conservation Habitat (OS-CH)	947	NA	NA	NA
Open Space-Water (OS-W)	212	NA	NA	NA
Open Space-Recreation (OS-R)	100	NA	NA	15
Open Space-Rural (OS-RUR)	0	0	0	NA
Open Space-Mineral Resources (OS-MIN)	148	NA	NA	4
Open Space Total	***2,201***	***0***	***0***	***19***
Community Development Foundation Component				
Estate Density Residential (EDR)	126	44	133	NA
Very Low Density Residential (VLDR)	494	247	744	NA
Low Density Residential (LDR)	1,031	1,237	3,722	NA
Medium Density Residential (MDR)	3,388	11,856	35,687	NA
Medium High Density Residential (MHDR)	370	2,408	7,247	NA
High Density Residential (HDR)	0	0	0	NA
Very High Density Residential (VHDR)	66	1,127	3,393	NA
Highest Density Residential (HHDR)	0	0	0	NA
Commercial Retail (CR) [c]	448	941	2,831	2,692
Commercial Tourist (CT)	8	NA	NA	136
Commercial Office (CO)	0	NA	NA	0
Light Industrial (LI)	1,141	NA	NA	14,664
Heavy Industrial (HI)	8	NA	NA	73
Business Park (BP)	25	NA	NA	412
Public Facilities (PF)	174	NA	NA	47
Community Center (CC)	131	764	2,299	1,021
Community Development Total	***7,410***	***18,624***	***56,056***	***19,045***
Other Land Uses, Overlays and Policy Areas [d]				
Rural Community-Estate Density Residential 2	406	142	428	NA
Glen Eden Policy Area	0	0	0	NA
Medium Density Residential (2-4 du/ac)	558	1,952	5,876	NA
Vista Santa Rosa Policy Area	0	0	0	NA
Rural Village Overlay	0	0	0	0
Rural Village Overlay Study Area	0	0	0	0
Community Center Overlay	0	0	0	0

Table 2: Statistical Summary of Lakeview/Nuevo Area Plan

Community Retail Overlay	0	0	0	0
Other, Overlays and Policy Areas Total	***964***	***2,094***	***6,304***	***0***
BUILDOUT PROJECTIONS TOTAL	**27,745**	**26,778**	**80,602**	**19,166**
Other				
City	0			
Indian Lands	0			
Freeways	0			
Other Total	***0***			
AREA PLAN TOTAL ACRES	**27,745**			

Overlays and Policy Areas

The following provides the acreages for each Overlay and/or Policy Area within the Area Plan. Overlays and Policy Areas are districts that contain unique standards tailored to a local geographic area. In some instances, these Overlays and Policy Areas alter the allowable uses and maximum densities/intensities within the particular district. In these cases, the buildout potential resulting from the application of the Overlays and Policy Areas has been accounted for in the Base Land Use Designations above. Please see the Area Plan for a description of the unique features contained within each Overlay or Policy Area.

	Acreage
Overlays	
Mixed Use Planning Area	0
Community Development Overlay	844
Specific Community Development Designation Overlays and Policy Areas	
San Jacinto River Project	2,015
2-4 DU/AC	558
San Jacinto River/2-4 DU	314
Winchester Newport	0
Total	***3,731***

NOTES:

a. Statistics reflect the midpoint for the theoretical range of build-out projections. Reference Appendix E of the General Plan for assumptions and methodology.

b. Overlay figures reflect the additional dwelling units, population and employment permissible under this category.

c. It is assumed that Commercial Retail designation will buildout at 40% Commercial Retail and 60% Medium Density Residential.

d. The acreage for the Overlays and Policy Areas have not been included in the acreage totals to avoid double counting.

Table 2: Statistical Summary of Lakeview/Nuevo Area Plan

LAND USE	AREA	STATISTICAL CALCULATIONS[1]		
	Acreage	Dwelling Units	Population	Employment
BASE LAND USE PLANNING AREAS				
BASE LAND USE DESIGNATIONS BY FOUNDATION COMPONENTS				
Agriculture Foundation Component				
Agriculture (AG)	2,794	140	420	140
Agriculture Foundation Component Sub-Total	***2,794***	***140***	***420***	***140***
Rural Foundation Component				
Rural Residential (RR)	5,331	800	2,407	NA
Rural Mountainous (RM)	4,150	208	625	NA
Rural Desert (RD)	0	0	0	NA
Rural Foundation Component Sub-Total	***9,481***	***1,008***	***3,032***	***0***
Rural Community Foundation Component				
Estate Density Residential (RC-EDR)	1,044	365	1,100	NA
Very Low Density Residential (RC-VLDR)	2,091	1,568	4,720	NA
Low Density Residential (RC-LDR)	3,009	4,514	13,586	NA
Rural Community Foundation Component Sub-Total	***6,144***	***6,447***	***19,406***	***0***
Open Space Foundation Component				
Open Space-Conservation (OS-C)	804	NA	NA	NA
Open Space-Conservation Habitat (OS-CH)	947	NA	NA	NA
Open Space-Water (OS-W)	212	NA	NA	NA
Open Space-Recreation (OS-R)	100	NA	NA	15
Open Space-Rural (OS-RUR)	0	0	0	NA
Open Space-Mineral Resources (OS-MIN)	148	NA	NA	4
Open Space Foundation Component Sub-Total	***2,211***	***0***	***0***	***19***
Community Development Foundation Component				
Estate Density Residential (EDR)	0	0	0	NA
Very Low Density Residential (VLDR)	366	275	826	NA
Low Density Residential (LDR)	895	1,343	4,041	NA
Medium Density Residential (MDR)	3,935	13,773	41,455	NA
Medium High Density Residential (MHDR)	370	2,405	7,239	NA
High Density Residential (HDR)	0	0	0	NA
Very High Density Residential (VHDR)	66	1,122	3,377	NA
Highest Density Residential (HHDR)	0	0	0	NA
Commercial Retail (CR) [2]	415	NA	NA	6,237
Commercial Tourist (CT)	0	NA	NA	0
Commercial Office (CO)	0	NA	NA	0
Light Industrial (LI)	761	NA	NA	10,395
Heavy Industrial (HI)	0	NA	NA	0
Business Park (BP)	0	NA	NA	0
Public Facilities (PF)	174	NA	NA	47
Community Center (CC) [3]	131	764	2,299	1,021
Mixed-Use Planning Area (MUPA)	0	0	0	0
Community Development Foundation Component Sub-Total	***7,113***	***19,682***	***59,237***	***17,700***
SUB-TOTAL FOR ALL FOUNDATION COMPONENT USES	**27,743**	**27,277**	**82,095**	**17,859**
NON-COUNTY LAND USES				
OTHER LANDS NOT UNDER PRIMARY COUNTY JURISDICTION				
Cities	0			
Indian Lands	0			
Freeways	0			

Table 2: Statistical Summary of Lakeview/Nuevo Area Plan

LAND USE	AREA	STATISTICAL CALCULATIONS[1]		
	Acreage	Dwelling Units	Population	Employment
Other Lands Sub-Total	*0*			
TOTAL FOR ALL BASE LANDS	**27,743**			
SUPPLEMENTAL LAND USE PLANNING AREAS				
These SUPPLEMENTAL LAND USES are overlays, policy areas and other supplemental items that apply OVER and IN ADDITION to the base land use designations listed above. The acreage and statistical data below represent possible ALTERNATE land use or build-out scenarios.				
OVERLAYS & POLICY AREA				
OVERLAYS[4,5]				
Community Development Overlay	843	---	---	---
Community Center Overlay	0	0	0	0
Rural Village Overlay	0	0	0	0
Rural Village Overlay Study Area	0	0	0	0
Specific Community Development Designation Overlays	0	0	0	0
Total Area Subject to Overlay[4,5]	***843***	---	---	---
POLICY AREAS[6]				
San Jacinto River	2,328	---	---	---
2-4 DU/AC	872	---	---	---
Juniper Flats	406	---	---	---
March Air Reserve Base Influence Area	2,553	---	---	---
Total Area Within Policy Areas[6]	***6,159***			
TOTAL AREA WITHIN SUPPLEMENTALS[7]	**7,053**			

FOOTNOTES:

1 Statistical calculations are based on the midpoint for the theoretical range of build-out projections. Reference Appendix E-1 of the General Plan for assumptions and methodology used.

2 For calculation purposes, it is assumed that CR designated lands will build out at 40% CR and 60% MDR.

3 Note that "Community Center" is used both to describe a land use designation and a type of overlay. These two terms are separate and distinct; are calculated separately; and, are *not* interchangeable terms.

4 Overlays provide alternate land uses that may be developed instead of the underlaying base use designations.

5 Policy Areas indicate where additional policies or criteria apply, in addition to the underlying base use designations. As Policy Areas are supplemental, it is possible for a given parcel of land to fall within one or more Policy Areas. It is also possible for a given Policy Area to span more than one Area Plan.

6 Overlay data represent the additional dwelling units, population and employment permissible under the alternate land uses.

7 A given parcel of land can fall within more than one Policy Area or Overlay. Thus, this total is not additive.

Policy Areas

Not all areas within an area plan are the same. Distinctiveness is a primary means of avoiding the uniformity that so often plagues conventional suburban development. A Policy Area is a portion of an Area Plan that contains special or unique characteristics that merit detailed attention and focused policies. The location and boundaries of the Policy Areas designated in this area plan are shown on Figure 4, Policy Areas, and are described in detail below.

POLICY AREAS

A row of trees at the base of the Bernasconi Hills delineates the San Jacinto River.

Four policy areas have been designated within the Lakeview/Nuevo planning area. In some ways, these policies are even more critical to the sustained character of the Lakeview/Nuevo planning area than some of the basic land use policies because they reflect deeply held beliefs about the kind of place this is and should remain. These boundaries are only approximate and may be interpreted more precisely as decisions are called for in these areas. This flexibility, then, calls for considerable sensitivity in determining where conditions related to the policies actually exist, once a focused analysis is undertaken on a proposed development project.

San Jacinto River

The intent of this policy area is to reflect the fact that the land use designations may change as a result of implementing the proposed San Jacinto River Channelization Project, which is an ongoing process that has not been finalized. However, at the time of the adoption of this area plan, the location, configuration, and width of the channel are known. The channelization project would widen the channel to a 500-foot-wide, soft bottomed channel with earthen berms that are protected with rip-rap. This project would reduce the threat of flooding during a 100-year flood event and allow for increased development on adjacent lands.

★

LNAP = Lakeview/Nuevo Area Plan Policy

The unknown portion of this project is the definition of the necessary habitat lands that would serve as a corridor for wildlife movement. Depending upon where these wildlife lands are identified, the underlying land use designations may change. The San Jacinto Policy Area acknowledges that future land use changes may occur as a part of the channelization project and minimizes the necessary General Plan amendment process.

Policies:

LNAP 1.1 Allow the land use designations within the San Jacinto River Policy Area to change by a technical amendment to the General Plan to reflect the habitat areas resulting from the adopted San Jacinto River Channelization Project.

2-4 Dwelling Units Per Acre (DU/AC)

The 2-4 DU/AC Policy Area is currently within the 100-year floodplain of the San Jacinto River. Its function is to restrict density from the maximum allowed by the Land Use Plan to four (4) dwelling units per acre. These density limitations are imposed to minimize the impacts of a 100-year flood event on residents and their property. This policy area also provides a transition from higher density uses west of the San Jacinto River to the Rural Community Low Density Residential uses found in the Lakeview and Nuevo communities.

Policies:

LNAP 2.1 Restrict the density within the 2-4 DU/AC Policy Area to a maximum of four (4) dwelling units per acre to reduce the risk of flood damage to residents and create a smooth transition from higher density to lower density residential uses.

March Air Reserve Base Influence Area

An aerial view of the March Air Museum

The former March Air Force Base is located northwest of the Lakeview/Nuevo planning area. The Base was established in 1918 and was continually used until 1993. In 1996, the land was converted from an operational Air Force Base to an Active Duty Reserve Base. A four party, Joint Powers Authority (JPA), comprised of the County of Riverside and the Cities of Moreno Valley, Perris and Riverside, now governs the facility. The JPA plans to transform a portion of the base into a highly active inland port, known as the March Inland Port. The March Air Reserve Base encompasses 6,500 acres of land including active cargo and military airport. The boundary of the March Air Reserve Base Airport Influence Area is shown in Figure 4, Policy Areas. There are a number of safety zones associated with the Airport Influence Area. These safety zones are shown in Figure 5, March Air Reserve Base Airport Influence Policy Area. Properties within these zones are subject to regulations governing such issues as development intensity, density, height of structures, and noise. These land use restrictions are fully set forth in Appendix L and are summarized in Table 4, Land Use Compatibility Guidelines for Airport Safety Zones for March, Flabob, Bermuda Dunes, Chino, and Skylark Airports. For more information on these zones and additional airport policies, refer to Appendix L and the Land Use, Circulation Safety and Noise Elements of the Riverside County General Plan.

Policies:

LNAP 3.1 To provide for the orderly development of March Air Reserve Base and the surrounding area, comply with the March JPA General Plan as fully set forth in Appendix L and as summarized in Table 4, as well as any applicable policies related to airports in the Land Use, Circulation, Safety and Noise Elements of the Riverside County General Plan.

Juniper Flats Policy Area

The Juniper Flats Policy Area is designated Rural Residential - 5 acre lot size. However, if developed pursuant to a unified plan for the entire area, a somewhat higher intensity of development may be considered.

Policies:

LNAP 4.1: Notwithstanding the Rural Residential - 5 acre designation of this area on the Lakeview/Nuevo Area Plan map, the Juniper Flats Policy Area may be developed at a maximum residential intensity of 0.4 dwelling units per acre, and the area may be developed with 2½ acre lots, provided that the area is developed pursuant to a unified plan for the entire area.

Specific Plans

The authority for preparation of specific plans is found in the California Government Code, Sections 65450 through 65457.

Specific Plans are highly customized policy or regulatory tools that provide a bridge between the General Plan and individual projects in a more area-specific manner than is possible with community-wide zoning ordinances. The specific plan is a tool that provides land use and development standards that are tailored to respond to special conditions and aspirations unique to the area being proposed for development. These tools are a means of addressing detailed concerns that conventional zoning cannot do.

Specific Plans are identified in this section as Policy Areas because detailed study and development direction is provided in each plan. Policies related to any listed specific plan can be reviewed at the Riverside County Planning Department.

The six specific plans located in the Lakeview/Nuevo planning area are listed in Table 3, Adopted Specific Plans in the Lakeview/Nuevo Area Plan.

Specific Plan No. 114 (Tracts 4437 and 4852), Specific Plan No. 183 (Rancho Nuevo), Specific Plan No. 239 (Stoneridge), Specific Plan No. 249 (Preissman), and Specific Plan No. 251 (Lake Nuevo Village) are determined to be Community Development Specific Plans. Specific Plan No. 134 (Sky Mesa) is determined to be a Rural Specific Plan.

Table 3: Adopted Specific Plans in the Lakeview/Nuevo Area Plan [1]

Specific Plan	Specific Plan #
Tracts 4437 & 4852	114
Sky Mesa	134
Rancho Nuevo	183
Stoneridge	239
Preissman	246
Lake Nuevo Village	251

[1] Source: County of Riverside Planning Department.

Table 4: Land Use Compatibility Guidelines for Airport Safety Zones for March, Flabob, Bermuda Dunes, Chino, and Skylark Airports [1,2]

Safety Zone	Maximum Population Density	Maximum Coverage by Structures	Land Use
Area I	0 [3]	0 [3]	No significant obstructions [4] No petroleum or explosives No above-grade powerlines
Area II	Uses in Structures: [5] 25 persons/ac. OR 150 persons/bldg. (see text in the source document for the Comprehensive Land Use Plan for explanation) Uses not in structures: 50 persons/ac. Residential 2.5 Acre minimum lots Uses in Structures: [5] 75 persons/ac. or 300 persons/bldg. (see text in the source document for the Comprehensive Land Use Plan for explanation)	25% of net area 50% of gross area or 65% of net area whichever is greater	No residential No hotels, motels No restaurants, bars No schools, hospitals, government services No concert halls, auditoriums No stadiums, arenas No public utility stations, plants No Public communications facilities No uses involving, as the primary activity, manufacture, storage, or distribution of explosives or flammable materials. [6]
Area III	Not Applicable	50% of gross area or 65% of net area whichever is greater	Discourage schools, auditoriums, amphitheaters, stadiums Discourage uses involving, as the primary activity, manufacture, storage, or distribution of explosives or flammable materials. [6]

1 The following uses shall be prohibited in all airport safety zones:
   a. Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.
   b. Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.
   c. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area.
   d. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and /or aircraft instrumentation.

2 Avigation easements shall be secured through dedication for all land uses permitted in any safety zones.

3 No structures permitted in ETZ or ISZ.

4 Significant obstructions include but are not limited to large trees, heavy fences and walls, tall and steep berms and retaining walls, non-fragible street light and sign standards, billboards.

5 A structure includes fully enclosed buildings and other facilities involving fixed seating and enclosures limiting the mobility of people, such as sports stadiums, outdoor arenas, and amphitheaters.

6 This does not apply to service stations involving retail sale of motor vehicle fuel if fuel storage tanks are installed underground.

Source: Extracted from Riverside County Airport Land Use Commission Comprehensive Land Use Plan

Figure 4: Policy Areas

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Figure 5: March Air Reserve Base Influence Policy Area

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Land Use

While the General Plan Land Use Element and Area Plan Land Use Map guide future development patterns in the Lakeview/Nuevo planning area, additional policy guidance is often necessary to address local land use issues that are unique to the area or that require special policies that go above and beyond those identified in the General Plan. The Local Land Use Policies section provides policies to address these issues. These policies may reinforce County regulatory provisions, preserve special lands or historic structures, require or encourage particular design features or guidelines, or restrict certain activities. The intent is to enhance and/or preserve the identity and character of this unique area.

LOCAL LAND USE POLICIES

Community Centers

Two community centers are identified in the Lakeview/Nuevo Area Plan Land Use Plan that offer a unique mix of employment, commercial, public, and residential uses. These community centers are rooted in Planning Areas identified as mixed use planning areas in the adjacent Stoneridge and Preissman Specific Plans. These Specific Plans provide the direction and standards for the future design and development for the lands within their boundaries. However, the future development of these two community centers would benefit from utilization of the features in the Community Centers Area Plan Land Use Designation section of the Land Use Element.

Policies:

LNAP 5.1 Encourage the two mixed use planning areas in the adopted Stoneridge and Preissman Specific Plans to adhere to those policies listed in the Community Centers Area Plan Land Use Designation section of the Land Use Element.

Community Center

Guidelines have been prepared to aid in the physical development of vibrant community centers in Riverside County. These guidelines are intended to be illustrative in nature, establishing a general framework for design while allowing great flexibility and innovation in their application. Their purpose is to ensure that community centers develop into the diverse and dynamic urban places they are intended to be. These guidelines will serve as the basis for the creation of specified community center implementation tools such as zoning classifications and specific plan design guidelines.

The Community Center Guidelines are located in Appendix J of the General Plan.

Third & Fifth Supervisorial District Design Standards and Guidelines

In July 2001, the County adopted a set of design guidelines applicable to new development within the Third and Fifth Supervisorial Districts. The Development Design Standards and Guidelines for the Third and Fifth Supervisorial Districts are for use by property owners and design professionals submitting development applications to the County Planning Department. The guidelines have been adopted to advance several specific development goals of the Third and Fifth Districts. These goals include: ensuring that the building of new homes is interesting and varied in appearance; utilizing building materials that promote a look of quality development now and in the future; encouraging efficient land use while promoting high quality communities; incorporating conveniently located parks, trails and open space into designs; and encouraging commercial and industrial developers to utilize designs and materials that evoke a sense of quality and permanence.

Policies:

LNAP 6.1 Require development to adhere to standards established in the Design Standards and Guidelines for Development in the Third and Fifth Supervisorial Districts.

Mount Palomar Nighttime Lighting

The Mount Palomar Observatory, located in San Diego County, requires unique nighttime lighting standards so that the night sky can be viewed clearly. The following policies are intended to limit light leakage and spillage that may obstruct or hinder the Observatory's view. Please see Figure 6, Mt. Palomar Nighttime Lighting Policy, for areas that may be impacted by these standards.

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Light pollution occurs when too much artificial illumination enters the night sky and reflects off of airborne water droplets and dust particles causing a condition known as skyglow. It occurs when glare from improperly aimed and unshielded light fixtures cause uninvited illumination to cross property lines.

Policies:

LNAP 7.1 Adhere to the lighting requirements specified in County Ordinance No. 655 for standards that are intended to limit light leakage and spillage that may interfere with the operations of the Mount Palomar Observatory.

Figure 6: Mt. Palomar Nighttime Lighting Policy

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Circulation

The circulation system is vital to the prosperity of a community. It provides for the movement of goods and people within and outside of the community and includes motorized and non-motorized travel modes such as bicycles, trains, aircraft, automobiles, and trucks. In Riverside County, the circulation system is also intended to accommodate a pattern of concentrated growth, providing both a regional and local linkage system between unique communities. This system is multi-modal, which means that it provides numerous alternatives to the automobile, such as transit, pedestrian systems, and bicycle facilities so that Riverside County citizens and visitors can access the region by a number of transportation options.

"Innovative designs allow for increased density in key locations, such as near transit stations, with associated benefits. In these and other neighborhoods as well, walking, bicycling, and transit systems are attractive alternatives to driving for many residents."

- RCIP Vision

As stated in the Vision and the Land Use Element, the County is moving away from a growth pattern of random sprawl toward a pattern of concentrated growth and increased job creation. The intent of the new growth patterns and the new mobility systems is to accommodate the transportation demands created by future growth and to provide mobility options that help reduce the need to utilize the automobile. The circulation system is designed to fit into the fabric of the land use patterns and accommodate the open space systems.

While the following section describes the circulation system as it relates to the Lakeview/Nuevo area, it is important to note that the programs and policies are supplemental to, and coordinated with, the policies of the General Plan Circulation Element. In other words, the circulation system of the Lakeview/ Nuevo area is tied to the countywide system and its long range direction. As such, successful implementation of the policies in the Lakeview/Nuevo Area Plan will help to create an interconnected and efficient circulation system for the entire County.

LOCAL CIRCULATION POLICIES

Vehicular Circulation System

The vehicular circulation system that supports the Land Use Plan for the Lakeview/Nuevo Area Plan is shown on Figure 7, Circulation. The vehicular circulation system is anchored by the Ramona Expressway, which runs east to west forming part of the northern boundary of the planning area. Various major and secondary arterials and collector roads connect with the Ramona Expressway and serve local uses. Dawson and Menifee Roads are urban arterials that run north-south from the Ramona Expressway, and Nuevo and San Jacinto Roads are urban arterials that run east-west. Smaller secondary roads such as Juniper Flats Road and Lakeview Avenue serve the eastern portion of the planning area. Most of the roads are centered in the west to serve urban uses, while the rural areas in the east have fewer roads due to the natural features and rugged terrain found there.

Policies:

LNAP 8.1 Design and develop the vehicular roadway system per Figure 7, Circulation, and in accordance with the Functional Classifications and Standards section of the General Plan Circulation Element.

LNAP 8.2 Maintain the County's roadway Level of Service standards as described in the Level of Service section of the General Plan Circulation Element.

Trails and Bikeway System

The County of Riverside contains bicycle, pedestrian, and equestrian trails that traverse urban, rural, and natural areas. These multi-use trails accommodate hikers, bicyclists, equestrian users, and others as an integral part of the County's circulation system. These multi-use trails serve both as a means of connecting the unique communities and activity centers throughout the County and as an effective alternate mode of transportation. In addition to transportation, the trail system also serves as a community amenity by providing recreation and leisure opportunities as well as edges and separations between communities.

As shown on Figure 8, Trails and Bikeway System, an extensive trail system is envisioned for the Lakeview/Nuevo planning area. There is a web of community trails, as well as regional trails and bikeways planned to wind through rural and mountainous areas, as well as crossing busy streets. A multi-use trail runs north-south along the San Jacinto River. This trail capitalizes on the natural features of the area and enhances accessibility of residents to the river. This trail system is an important part of the Area Plan, and should continue to be preserved and expanded for future use by residents of Lakeview/Nuevo.

Policies:

LNAP 9.1 Develop, maintain and/or improve the trails and bikeways within the Lakeview/Nuevo Area Plan as depicted on Figure 8, Trails and Bikeway System, and as discussed in the Multipurpose Recreational Trails section of the General Plan Circulation Element.

Scenic Highways

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The purpose of the California Scenic Highways program, which was established in 1963, is to "Preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways."

Scenic highways provide the motorist with a view of distinctive natural characteristics that are not typical of other areas in the County. The intent of these policies is to conserve significant scenic resources along scenic highways for future generations and to manage development along scenic highways and corridors so that it will not detract from the area's natural characteristics.

As shown on Figure 9, Scenic Highways, the Ramona Expressway is a County Eligible Scenic Highway in the Lakeview/Nuevo Area Plan. This highway serves as a major entrance to Lake Perris, one of the County's most important recreation areas. It passes the Bernasconi Hills, the San Jacinto River, the Mystic Lake corridor, the San Jacinto Wildlife area, and agricultural land, and provides a link with the Pines-to-Palms Highway, which is a State Designated Scenic Highway.

Figure 7: Circulation

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Figure 8: Trails and Bikeway System

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Figure 9: Scenic Highways

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Policies:

LNAP 10.1 Protect the scenic highways in the Lakeview/Nuevo planning area from change that would diminish the aesthetic value of views of the Bernasconi Hills, the San Jacinto River, the Mystic Lake Corridor, and the San Jacinto Wildlife Area in accordance with the Scenic Highways section of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.

Community and Environmental Transportation Acceptability Process (CETAP) Corridors

The population and employment of Riverside County are expected to significantly increase over the next twenty years. The Community and Environmental Transportation Acceptability Process (CETAP) was established to evaluate the need and the opportunities for the development of new or expanded transportation corridors in western Riverside County to accommodate increased growth and to preserve quality of life. These transportation corridors include a range of transportation options such as highways or transit, and are developed with careful consideration for potential impacts to habitat requirements, land use plans, and public infrastructure. CETAP has identified three priority corridors for the movement of people and goods: Banning/Beaumont to Temecula, Hemet to Corona/Lake Elsinore, and Moreno Valley to San Bernardino County.

The Hemet to Corona/Lake Elsinore CETAP Corridor passes through the Lakeview/Nuevo planning area along the Ramona Expressway. This corridor could accommodate a number of transportation options, including vehicular traffic and high occupancy vehicle lanes.

Policies:

LNAP 11.1 Accommodate the Hemet to Corona/Lake Elsinore CETAP Corridor in accordance with the General Plan Circulation Element.

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Multipurpose Open Space

"The open space system and the methods for its acquisition, maintenance, and operation are calibrated to its many functions: visual relief, natural resources protection, habitat preservation, passive and active recreation, protection from natural hazards, and various combinations of these purposes. This is what is meant by a multipurpose open space system."

- RCIP Vision

The Lakeview/Nuevo planning area contains a variety of open spaces that serve a multitude of functions, hence the open space label of "multi-purpose." The point is that open space is really a part of the public infrastructure and should have the capability of serving a variety of needs and diversity of users. The Lakeview/Nuevo planning area open space system is rich and varied, including such features as the Bernasconi Hills, the Lakeview Mountains, and the San Jacinto River, and provides open space, habitat, and recreation spaces. These quality spaces encompass a variety of habitats including riparian corridors, oak woodlands, chaparral habitats, and a number of lakes, groves, and agricultural fields, as well as a number of parks and recreation areas.

This Multipurpose Open Space section is a critical component of the character of the County of Riverside, and this is reflected in the Lakeview/Nuevo Area Plan. Preserving the scenic background and the natural resources within the Lakeview/Nuevo planning area gives meaning to the "remarkable environmental setting" portion of the overall Riverside County Vision. Not only that, these open spaces also help define the edges of and separation between communities, which is another important aspect of the Vision. Achieving a desirable end state of valued local open space to benefit residents and visitors will require sensitive design attention in laying out development proposals.

A watershed is the entire region drained by a waterway that drains into a lake or reservoir. It is the total area above a given point on a stream that contributes water to the flow at that point, and the topographic dividing line from which surface streams flow in two different directions. Clearly, watersheds are not just water. A single watershed may include combinations of forests, glaciers, deserts, and/or grasslands.

"A major thrust of the multipurpose open space system is the preservation of components of the ecosystem and landscape that embody the historic character and habitat of the County, even though some areas have been impacted by man-made changes."

- RCIP Vision

LOCAL OPEN SPACE POLICIES

Watersheds, Floodplains, and Watercourses

The Lakeview/Nuevo planning area is located within the Santa Ana watershed, which includes the San Jacinto River. The San Jacinto River drains southwest toward Canyon Lake through the City of Perris. The San Jacinto River Channelization Project proposes to widen and improve the banks of the river in order to reduce the risk of flooding and, in the process, set aside a habitat area to accommodate wildlife movement. This watercourse provides a habitat corridor through developed land as well as links to other open space. This allows wildlife the ability to move from one open space to another without crossing developed land. The following policies preserve and protect this important watershed.

Policies:

LNAP 12.1 Protect the Santa Ana River watershed and surrounding habitats, and provide flood protection through adherence to the Watershed Management section of the General Plan Multipurpose Open Space Element.

PROPOSED MULTIPLE SPECIES HABITAT CONSERVATION PLAN

For further information on the MSHCP please see the Multipurpose Open Space Element of the General Plan.

★ *The Wildlife Agencies include The United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG).*

Regional resource planning to protect individual species such as the Stephens Kangaroo Rat has occurred in Riverside County for many years. Privately owned reserves and publicly owned land have served as habitat for many different species. This method of land and wildlife preservation proved to be piecemeal and disjointed, resulting in islands of reserve land without corridors for species migration and access. To address these issues of wildlife health and habitat sustainability, the proposed Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) has been developed by the County. This Plan has been adopted by the County and, as of October 7, 2003, awaits approval by other jurisdictions and the Wildlife Agencies. The MSHCP comprises a reserve system that encompasses core habitats, habitat linkages, and wildlife corridors outside of existing reserve areas and existing private and public reserve lands into a single comprehensive plan that can accommodate the needs of species and habitat in the present and future.

MSHCP Program Description

The Endangered Species Act prohibits the "taking" of endangered species. Taking is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" listed species. The Wildlife Agencies have authority to regulate this "take" of threatened and endangered specifies. The intent of the proposed MSHCP is for the Wildlife Agencies to grant a "take authorization" for otherwise lawful actions that may incidentally "take" or "harm" species outside of reserve areas, in exchange for supporting assembly of a coordinated reserve system. Therefore, the proposed Western Riverside County MSHCP will allow the County to "take" plant and animal species within identified areas through the local land use planning process. In addition to the conservation and management duties assigned to the County, a property owner initiated habitat evaluation and acquisition negotiation process has also been developed. This process is intended to apply to property that may be needed for inclusion in the MSHCP Reserve or subjected to other MSHCP criteria.

★ *The following sensitive, threatened and endangered species may be found within this Area Plan:*

- *loggerhead strike*
- *burrowing owl*
- *thread-leaved brodiaea*
- *bobcat*
- *cactus wren*
- *granite spiny lizard*
- *orange-throated whiptail*
- *California gnatcatcher*
- *Bell's sage sparrow*
- *arroyo southwestern toad*
- *Los Angeles pocket mouse*
- *San Jacinto Valley crownscale*
- *spreading navarretia*
- *Coulter's goldfields*
- *Parish's brittlescale*
- *Davidson's saltbrush*

Key Biological Issues

The habitat requirements of the sensitive and listed species, combined with sound habitat management practices, have shaped the following policies. These policies provide general conservation direction.

Policies:

LNAP 13.1 Conserve the existing intact upland habitat block in the Lakeview Mountains for the benefit of raptors, burrowing owl, and cactus wren.

LNAP 13.2 Conserve clay soils intermixed with or near vernal pools occurring in the middle reaches of the San Jacinto River supporting core populations of thread-leaved brodiaea.

LNAP 13.3 Conserve wetland habitats along the San Jacinto River including existing vernal playas, vernal pools and associated watersheds.

Maintain watershed processes that contribute to and enhance water quality and the hydrologic regime.

LNAP 13.4 Conserve Willow-Domino-Travers soils that support sensitive plants such as spreading navarretia, San Jacinto Valley crownscale, Coulter's goldfields, Parish's brittlescale, and Davidson's saltbrush.

LNAP 13.5 Maintain and enhance linkage value of the San Jacinto River for wildlife movement and live-in habitat.

LNAP 13.6 Conserve grasslands adjacent to coastal sage scrub habitats as foraging habitat for raptors.

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Hazards

Portions of the Lakeview/Nuevo planning area may be subject to hazards such as flooding, dam inundation, seismic occurrences, and wildland fire. These hazards are depicted on the hazards maps, Figure 10 to Figure 14, and are located throughout Lakeview/Nuevo at varying degrees of risk and danger. Some hazards must be avoided entirely while the potential impacts of others can be mitigated by special building techniques. The following policies provide additional direction for relevant issues specific to the Lakeview/Nuevo planning area.

LOCAL HAZARD POLICIES

Flooding and Dam Inundation

Since 1965, eleven Gubernatorial and Presidential flood disaster declarations have been declared for Riverside County. State law generally makes local government agencies responsible for flood control in California.

As shown on Figure 10, Flood Hazards, the flood prone portion of the planning area runs adjacent to the San Jacinto River. Within the Lakeview/Nuevo planning area, the 100-year floodplain follows the San Jacinto River and most greatly affects lowland areas. If approved, the proposed San Jacinto River Channelization Project would significantly reduce the size and threat of the 100-year flood to the Lakeview/Nuevo residents. As depicted by the dashed green line on Figure 10, Flood Hazards, the 100-year floodplain once the proposed channelization project is completed would be considerably narrower throughout the valley in the Lakeview/Nuevo planning area. There are also a series of Dam Hazard Zones within the Lakeview/Nuevo planning area. Failure of the Lake Perris Dam may cause flooding along the 100-year floodplain and into developed areas. Many techniques may be used to address the danger of flooding, such as avoiding development of floodplains, altering the water channels, utilizing specialized building techniques, elevating structures in floodplains, and enforcing setbacks. This set of policies addresses the hazards associated with flooding and dam inundation.

Policies:

LNAP 14.1 Protect life and property from the hazards of flood events through adherence to the Flood and Inundation section of the General Plan Safety Element.

LNAP 14.2 Adhere to the flood proofing, flood protection requirements, and Flood Management Review requirements of Riverside County Ordinance No. 458 Regulating Flood Hazard Areas.

LNAP 14.3 Require that proposed development projects that are subject to flood hazards, surface ponding, high erosion potential or sheet flow be submitted to the Riverside County Flood Control and Water Conservation District for review.

Wildland Fire Hazard

Fire Fact:

Santa Ana winds create a special hazard. Named by the early settlers at Santa Ana, these hot, dry winds enhance the fire danger throughout southern California.

Due to its remote and rugged nature, the eastern part of the Lakeview/Nuevo planning area is subject to a risk of wildland fires. The highest danger of wildfires can be found in the most rugged terrain, especially in the Lakeview Mountains. Methods to address this hazard include techniques such as avoidance of building in high-risk areas, creating setbacks that buffer development from hazard areas, maintaining brush clearance to reduce potential fuel, establishing low fuel landscaping, and utilizing fire-resistant building techniques. In still other cases, safety oriented organizations such as Fire Safe can provide assistance in educating the public and promoting practices that contribute to improved public safety. Refer to Figure 11, Wildfire Susceptibility, to see the locations of the wildfire zones within the Lakeview/Nuevo planning area.

Policies:

LNAP 15.1 Protect life and property from wildfire hazards through adherence to the Fire Hazards section of the General Plan Safety Element.

Liquefaction occurs primarily in saturated, loose, fine to medium-grained soils in areas where the groundwater table is within about 50 feet of the surface. Shaking causes the soils to lose strength and behave as liquid. Excess water pressure is vented upward through fissures and soil cracks and a water-soil slurry bubbles onto the ground surface. The resulting features are known as "sand boils", "sand blows" or "sand volcanoes." Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, and flow failures or slumping.

Seismic

There are a couple of short earthquake fault segments that are located northerly of Ramona Expressway within the Lakeview/Nuevo Area Plan itself. However, the nearby San Jacinto Fault, which is located outside of the planning area, poses a more significant threat to life and property. Threats from seismic events include ground shaking, fault rupture, liquefaction, and landslides.

The southwesterly and central portions of the Lakeview/Nuevo planning area, immediately adjacent to the San Jacinto River, have a very high susceptibility to shallow groundwater liquefaction. The remainder of the 100-year floodplain has a moderate susceptibility to deep groundwater liquefaction. The use of building techniques, the enforcement of setbacks from local faults, and practical avoidance measures will help to mitigate potentially dangerous circumstances. Refer to Figure 12, Seismic Hazards, for the location of faults and liquefaction areas within the Lakeview/Nuevo planning area.

Policies:

LNAP 16.1 Protect life and property from seismic related incidents through adherence to the Seismic Hazards section of the General Plan Safety Element.

Slope

The Lakeview/Nuevo planning area is home to the Lakeview Mountains and portions of the Bernasconi Hills. Both of these ranges contain slopes of 30% or greater. The terrain of these ranges helps to form the local character and a backdrop for the planning area. The areas that contain steep slopes require special development standards and care to prevent erosion and landslides, preserve significant views, and minimize grading and scarring. The following policies are intended to ensure life and property while protecting the character of the Lakeview/Nuevo communities. Figure 13, Steep Slope, reveals the areas of

steep slopes in the Lakeview/Nuevo planning area. Also refer to Figure 14, Slope Instability, for areas of possible landslide.

Policies:

LNAP 17.1 Identify ridgelines that provide a significant visual resource for the Lakeview/Nuevo planning area through adherence to the General Plan Land Use Element.

LNAP 17.2 Protect life and property through adherence to the Hillside Development and Slope policies of the General Plan Land Use Element and the Slope and Soil Instability Hazards policies of the General Plan Safety Element.

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Figure 10: Flood Hazards

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Figure 11: Wildfire Susceptibility

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Figure 12: Seismic Hazards

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Figure 13: Steep Slope

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Figure 14: Slope Instability

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California Regional Water Quality Control Board
Santa Ana Region

RESOLUTION NO. 94-1

Resolution Adopting the Updated Water Quality Control Plan for the Santa Ana River Basin (8)

WHEREAS, the California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. The Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was adopted by the Regional Board on April 11, 1975 and approved by the State Water Resources Control Board (State Board) on April 17, 1975.

2. An amended Basin Plan was adopted by the Regional Board on May 13, 1983 and approved by the State Board on October 20, 1983. Since that time, specific amendments to the Basin Plan have been adopted by the Regional Board and approved by the State Board. These amendments include the following: revisions of compliance dates for certain waste discharge prohibitions; revisions of the beneficial use designations, in part to conform the Basin Plan to the State Board's Sources of Drinking Water Policy; revision of the total inorganic nitrogen wasteload allocation for discharges to the Santa Ana River system; and the incorporation of minimum lot size requirements and exemption criteria for the use of septic tank-subsurface disposal systems in the Region.

3. Section 303(c) of the Federal Clean Water Act requires that water quality standards be reviewed and revised, if appropriate, on a triennial basis, and Section 13240 of the California Water Code provides that basin plans must be periodically reviewed and may be revised.

4. In 1989, the State Board initiated a statewide program for comprehensive review and update of the basin plans by all regional boards.

5. With extensive public participation and input, the Regional Board has prepared an updated Basin Plan. This Basin Plan update process satisfies federal triennial review requirements under Section 303(c) of the Clean Water Act and the periodic review requirements of the California Water Code under Section 13240.

6. The Regional Board discussed the basin plan update process at its meeting on April 23, 1993. A first draft of the revised Basin Plan was released in June, 1993 and a public workshop to review that draft was conducted on July 16, 1993. The Regional Board released a second draft of the Basin Plan and the relevant staff report in September, 1993 and conducted a public workshop on October 22, 1993. The public workshops were conducted after notice was given to all interested persons in accordance with Section 13244 of the California Water Code. The testimony introduced at those workshops was considered in the preparation of the final revised Basin Plan.

7. Significant additions to the revised Basin Plan include the addition of a new beneficial use designation of "Limited Warm Freshwater Aquatic Habitat" (LWRM) specifically for concrete-lined channels, the creation of wetlands as a waterbody type, designation of RARE beneficial use for a number of waterbodies, revised un-ionized ammonia objectives and corresponding total ammonia effluent limits, water quality objectives for the Big Bear groundwater basin, revised total dissolved solids wasteload allocation and a discussion of water quality and water resource managment projects in the region.

8. In accordance with applicable guidance and regulations, the Regional Board has developed site-specific water quality objectives (SSOs) for cadmium, copper and lead in the Middle Santa Ana River system. The Regional Board reviewed and discussed the issues related to the development and adoption of these SSOs in public meetings and workshops on August 7, 1992, March 5, 1993 and June 4, 1993. The testimony introduced at these workshops was considered in the preparation of final recommendations for SSOs.

9. In accordance with the provisions of California Water Code, Section 13280 *et seq.*, the Regional Board developed a proposed Basin Plan amendment to incorporate the SSOs.

10. At a duly noticed Public Hearing on October 22, 1993, the Regional Board adopted Resolution No. 93-64, adopting the proposed Basin Plan amendment to incorporate the SSOs for cadmium, copper and lead for the middle Santa Ana River system. A staff report regarding this matter was prepared and distributed to all interested parties 30 days prior to the hearing. However, between the time of the transmittal of the staff report and the October 22, 1993 hearing, new information was presented that led to the modification of the SSOs which had been recommended in the staff report. To avoid procedural questions, it is appropriate to rescind Resolution No. 93-64 and to reconsider adoption of the SSOs as part of the final revised Basin Plan. A report concerning the SSOs considered and adopted by the Regional Board on October 22, 1993 is included in the staff report pertaining to the adoption of the revised Basin Plan.

11. Regional Board Resolution No. 92-10, adopted February 14, 1992, found that some of the national water quality criteria, including those for cadmium, copper and lead, are inappropriate for the Middle Santa Ana River because the flows are dominated by reclaimed water, which provides and supports beneficial uses which would not otherwise exist.

12. A Use-Attainability Analysis (UAA) has been conducted for the Santa Ana River. The UAA provided data and analyses which allow the Regional Board to make the following findings regarding the Santa Ana River:
    a. The Site-Specific Water Quality Objectives (SSOs) for cadmium, copper and lead proposed by Regional Board staff will protect the beneficial uses of the Santa Ana River.
    b. The proposed SSOs have been shown to be conservative.

c. The proposed SSOs, which represent higher water quality than presently exists, will not result in degradation of water quality.
d. Existing levels of cadmium, copper and lead in the SAR do not contribute to toxicity in the Santa Ana River.
e. Dischargers to the Santa Ana River are either in compliance with their NPDES permits or are meeting approved compliance schedules.

13. Adoption and implementation of the cadmium, copper and lead SSOs is consistent with the maximum benefit to the people of California, particularly because it encourages water reclamation and will support important social and economic development in the Santa Ana Region.

14. The findings of this Resolution with respect to metals SSOs are specific to the Santa Ana River and to cadmium, copper and lead These findings are not meant to establish precedent or be applicable to other metals or other water bodies.

15. The Regional Board has prepared and distributed a written report (Staff Report) on adoption of the revised Basin Plan, including site-specific objectives for metals, in compliance with applicable state and federal environmental regulations (California Code of Regulations, Section 3775, Title 23 and 40 CFR Parts 25 and 131).

16. The process of basin planning is exempt from the requirements of the California Environmental Quality Act (Public Resources Code Section 21000 *et seq*) to prepare an Environmental Impact Report or Negative Declaration. The updated Basin Plan includes a completed Environmental Checklist, an assessment of the environmental impacts of the adoption of the updated Basin Plan and a discussion of alternatives. The updated Basin Plan, Environmental Checklist, staff report and supporting documentation are functionally equivalent to an Environmental Impact Report or Negative Declaration.

17. Review of potential environmental impacts of adoption and implementation of the reviewed Basin Plan indicated that a substantial increase in energy consumption might be required and that there may be no feasible alternatives or mitigation measures for this impact. However, the only alternatives identified which would not require increase in energy consumption would not ensure protection of the beneficial uses of the waters of the Santa Ana Region and would therefore not comply with state and federal laws. Pursuant to CEQA regulations Section 15093a, Findings of Overriding Considerations, as attached to the Checklist, are therefore appropriate. The benefits of the Basin Plan amendments outweigh the unavoidable adverse environmental effects.

18. The Regional Board has considered federal and state antidegradation policies, the state Sources of Drinking Water Policy and other relevant water quality control policies and finds the updated Basin Plan consistent with those policies.

19. On January 28, 1994, the Regional Board held a Public Hearing to consider the revised Basin Plan, including site-specific objectives for metals. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244.

20. This Basin Plan must be submitted for review and approval by the State Board, the Office of Administrative Law (OAL) and the US Environmental Protection Agency. Once approved by the State Board, the Basin Plan is to be submitted to the Office of Administrative Law. A Notice of Decision will be filed after the State Board and the Office of Administrative Law have acted on this matter. The Basin Plan must then be submitted for review by the U.S. Environmental Protection Agency.

21. The revised Basin Plan will become effective upon approval by the State Water Resources Control Board and the Office of Administrative Law

NOW THEREFORE BE IT RESOLVED THAT:

1. The California Regional Water Quality Control Board, Santa Ana Region, adopts the updated Water Quality Control Plan for the Santa Ana River Basin (8) as set forth in the attached document.

2. The Regional Board hereby adopts the Findings of Overriding Considerations attached to the Environmental Checklist prepared for the updated Water Quality Control Plan.

3. Resolution No. 93-64 adopting site-specific objectives for metals for the middle Santa Ana River system is hereby rescinded.

4. The Regional Board will implement the Inland Surface Waters Plan and Enclosed Bays and Estuaries Plan (Plans), where applicable, as long as they remain in effect. If the Plans are invalidated, the Regional Board will continue to issue National Pollutant Discharge Elimination System permits in compliance with the Porter-Cologne Act and applicable State and federal regulations, including but not limited to, 40 CFR 122.44(d).

5. Within three years after consultation with the Department of Fish and Game on specific waterbodies that support threatened or endangered species, and where scientific evidence indicates that certain existing water quality objectives for these water bodies do not adequately protect such species, the Regional Board will determine whether these objectives are adequately protective. In cases where such existing objectives do not provide adequate protection for threatened and endangered species, the Regional Board will develop and adopt adequately protective site-specific objectives for those constituents.

6. The Executive Officer is directed to forward copies of the updated Water Quality Control Plan for the Santa Ana River Basin (8) to the State Water Resources Control Board in accordance with the requirements of Section 13245 of the California Water Code.

7. The Regional Board requests that the State Water Resources Control Board approve the Water Quality Control Plan in accordance with the requirements of Sections 13245 and 13246 of the California Water Code and forward it to the Office of Administrative Law and the US Environmental Protection Agency-Region IX for approval.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Santa Ana Region, on March 11, 1994.

Gerard J. Thibeault
Executive Officer

7. The Regional Board requests that the State Water Resources Control Board approve the Water Quality Control Plan in accordance with the requirements of Sections 13245 and 13246 of the California Water Code and forward it to the Office of Administrative Law and the US Environmental Protection Agency-Region IX for approval.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 28, 1994.

for Gerard J. Thibeault
Executive Officer

WATER QUALITY CONTROL PLAN

SANTA ANA RIVER BASIN (8)

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CHAPTER 1

INTRODUCTION

THE WATER QUALITY CONTROL PLAN (BASIN PLAN) FOR THE SANTA ANA RIVER BASIN

The State Water Resources Control Board (SWRCB or State Board) and the nine Regional Water Quality Control Boards (RWQCBs or Regional Boards) are responsible for the protection and, where possible, the enhancement of the quality of California's waters. The SWRCB sets statewide policy, and together with the RWQCBs, implements state and federal laws and regulations. Each of the nine Regional Boards adopts a Water Quality Control Plan, or Basin Plan, which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's ground and surface waters, and local water quality conditions and problems.

This document is the Basin Plan for the Santa Ana Region. The Santa Ana Regions includes the upper and lower Santa Ana River watersheds, the San Jacinto River watershed, and several other small drainage areas. The Santa Ana Region covers parts of southwestern San Bernardino County, western Riverside County, and northwestern Orange County.

FUNCTION OF THE BASIN PLAN

The Basin Plan for the Santa Ana Region is more than just a collection of water quality goals and policies, descriptions of conditions, and discussions of solutions. It is also the basis for the Regional Board's regulatory programs. The Basin Plan establishes water quality standards for the ground and surface waters of the region. The term "water quality standards," as used in the federal Clean Water Act, includes both the beneficial uses of specific waterbodies and the levels of quality which must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the Regional Board and others that are necessary to achieve and maintain the water quality standards.

The Regional Board regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means.

Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For waterbodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included.

In some cases, it has been necessary for the Regional Board to completely prohibit the discharge of certain materials. Some types of discharges are prohibited in specific areas. Details on these prohibitions also appear in the Basin Plan.

LEGAL BASIS AND AUTHORITIES

The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

California Water Code

California's Porter-Cologne Water Quality Control Act (Section 13000 ["Water Quality"] ***et seq***., of the California Water Code), which established both the State Water Resources Control Board and the present system of nine Regional Water Quality Control Boards, directs in Chapter 4, Article 3, "Regional Water Quality Control Plans," that each Regional Board is to formulate and adopt water quality control plans for all areas within the region and is to periodically review and revise them as necessary. Each Regional Board is to set water quality objectives that will insure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The California Water Code also lists the specific factors which are to be considered in establishing water quality objectives. A detailed listing appears in Chapter 4 (p. 4-1).

Implementation plans are to include, but not limited to:

(1) a description of the nature of the actions necessary to achieve the objective, including recommendations for appropriate action by any entity, public or private;

(2) a time schedule for the actions to be taken; and

(3) a description of the surveillance to be undertaken to determine compliance with the objectives.

Clean Water Act

The objective of the federal Clean Water Act is to "***restore and maintain the chemical, physical and biological integrity of the Nation's waters,***" to make waters of the United States "fishable and swimmable." The Clean Water Act includes several sections which relate to Basin Plans and the basin planning process, including sections on Areawide Waste Treatment Management, Basin Planning, and Water Quality Standards and Implementation Plans.

The Clean Water Act requires that states adopt water quality standards, including standards for toxic substances. The states are also required to have a continuing planning process, which includes public hearings at least once every three years to review the water quality standards and revise them if necessary.

ENVIRONMENTAL SETTING

The Santa Ana Region is the smallest of the nine regions in the state (2800 square miles) and is located in southern California, roughly between Los Angeles and San Diego. Although small, the region's four million residents (1993 estimate) make it one of the most densely populated regions. People have come to southern California over the years for a wide variety of reasons. Once here, many decide to stay. Snow skiing areas in the mountains are as little as two hours from world-famous broad, sandy ocean beaches.

The climate of the Santa Ana Regions is classified as Mediterranean: generally dry in the summer with mild, wet winters. The average annual rainfall in the region is about fifteen inches, most of it occurring between November and March. Much of the area would be near-desert were it not for the influence of modern civilization.

Regional Boundaries and Geography

In very broad terms, the Santa Ana Region is a group of connected inland basins and open coastal basins drained by surface streams flowing generally southwestward to the Pacific Ocean (See Figure 1-1).

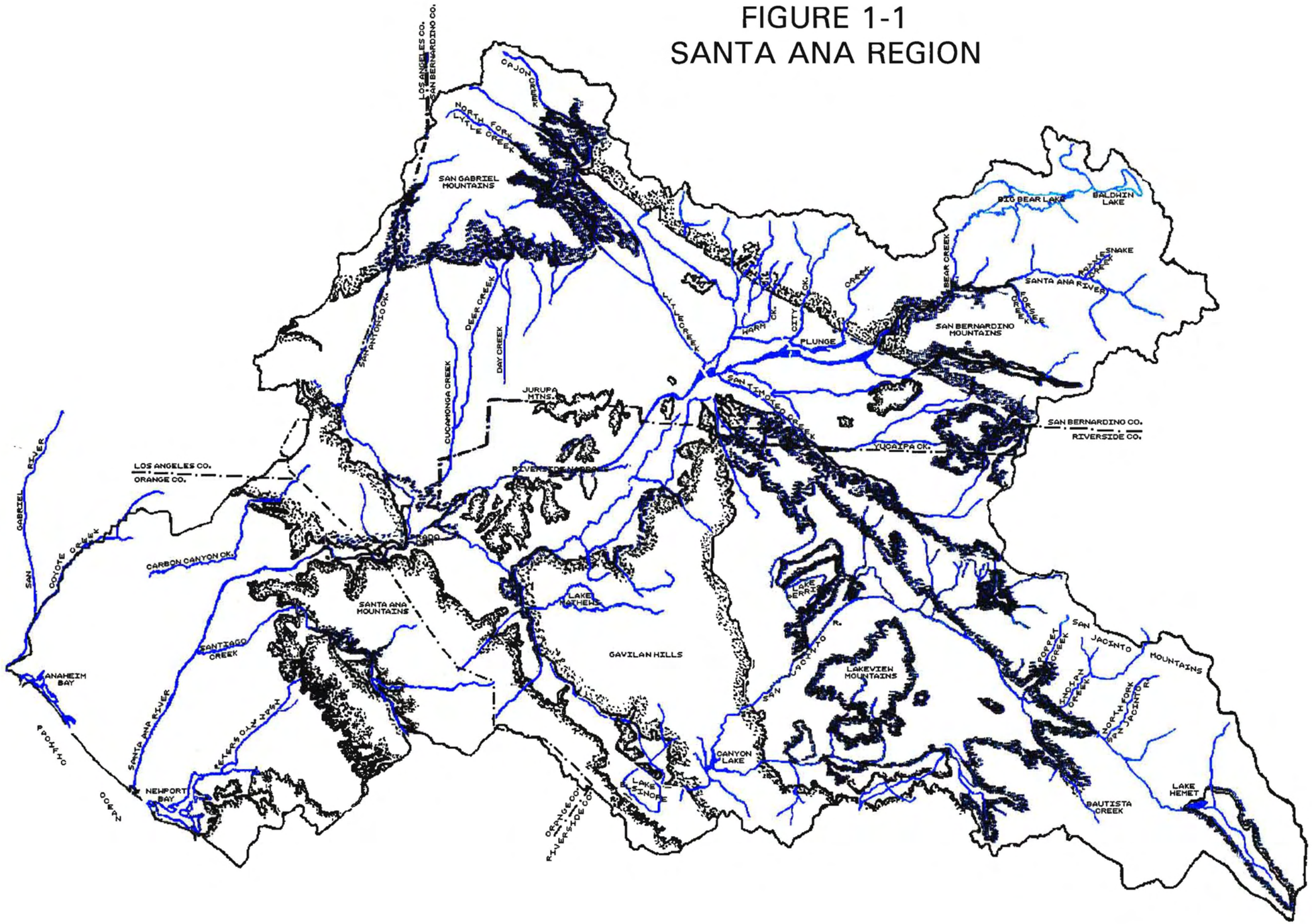
The boundaries between California's nine regions are usually hydrologic divides that separate watersheds, but the boundary between the Los Angeles and Santa Ana Regions is the Los Angeles County Line. Since that county line only approximates the hydrologic divide, part of the Pomona area drains into the Santa Ana Region, and in Orange County, part of the La Habra drains into the Los Angeles Region.

The east-west alignment of the crest of the San Gabriel and San Bernardino Mountains separates the Santa Ana River basin from the Mojave Desert, which is part of the Lahontan Basin (Region 6).

In the south, the regional boundary divides the Santa Margarita River drainage area from that of the San Jacinto River, which normally terminates in Lake Elsinore.

Near Corona, the Santa Ana River has cut through the Santa Ana Mountains and flows down onto the Orange County coastal plain. The Pacific Ocean coast of the Santa Ana Region extends from just north of Laguna Beach up to Seal Beach and the Los Angeles County line. Other features of the coast include Newport Bay, Anaheim Bay-Huntington Harbour, and the major coastal wetlands areas associated with those bays.

FIGURE 1-1
SANTA ANA REGION



REGION 8 INDEX

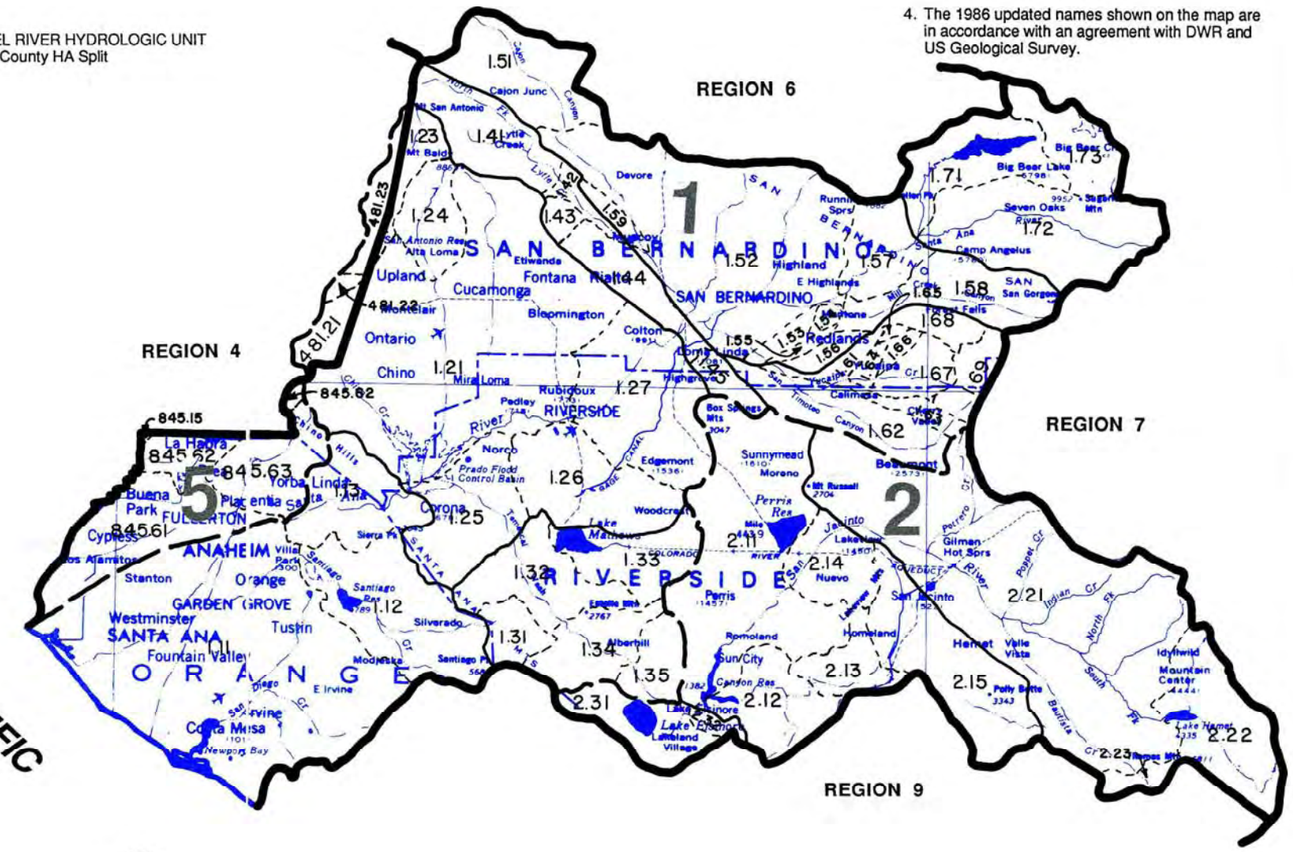
801.00	SANTA ANA RIVER HYDROLOGIC UNIT
801.10	Lower Santa Ana River HA
1.11	East Coastal Plain HSA
1.12	Santiago HSA
1.13	Santa Ana Narrows HSA
801.20	Middle Santa Ana River HA Split
801.21	Chino HSA Split
481.21	Chino HSA Split
481.22	Harrison HSA
801.23	Claremont Heights HSA Split
481.23	Claremont Heights HSA Split
801.24	Cucamonga HSA
1.25	Temescal HSA
1.26	Arlington HSA
1.27	Riverside HSA
801.30	Lake Matthews HA
1.31	Coldwater HSA
1.32	Bedford HSA
1.33	Cajalco HSA
1.34	Lee Lake HSA
1.35	Terra Cotta HSA
801.40	Colton-Rialto HA
1.41	Upper Lytle HSA
1.42	Lower Lytle HSA
1.43	Rialto HSA
1.44	Colton HSA
1.45	Reche HSA
801.50	Upper Santa Ana River HA
1.51	Cajon HSA
1.52	Bunker Hill HSA
1.53	Redlands HSA
1.54	Mentone HSA
1.55	Reservoir HSA
1.56	Crafton HSA
1.57	Santa Ana Canyon HSA
1.58	Mill Creek HSA
1.59	Sycamore HSA
801.60	San Timoteo HA
1.61	Yucaipa HSA
1.62	Beaumont HSA
1.63	Cherry Valley HSA
1.64	Chicken Hill HSA
1.65	Gateway HSA
1.66	Oak Glen HSA
1.67	South Mesa HSA
1.68	Triple Falls Creek HSA
1.69	Nobie Creek HSA
801.70	San Bernardino Mountain HA
1.71	Bear Valley HA
1.72	Seven Oaks HSA
1.73	Baldwin HSA

802.00	SAN JACINTO VALLEY HYDROLOGIC UNIT
802.10	Perris HA
2.11	Perris Valley HSA
2.12	Menifee HSA
2.13	Winchester HSA
2.14	Lakeview HSA
2.15	Hemet HSA
802.20	San Jacinto HA
2.21	Gilman Hot Springs HSA
2.22	Hemet Lake HSA
2.23	Bautista HSA
802.30	Elsinore Valley HA
2.31	Elsinore HSA
2.32	Railroad HSA

805.00	LOS ANGELES-SAN GABRIEL RIVER HYDROLOGIC UNIT
805.10	Coastal Plain of Los Angeles County HA Split
845.15	Central HSA Split
845.60	Anaheim HA Split
845.61	Anaheim HSA Split
845.62	La Habra HSA Split
845.63	Yorba Linda HSA Split

NOTE:

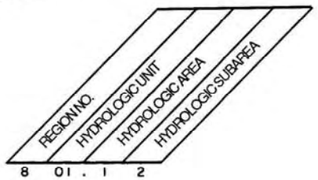
1. The names and areas shown on this map are the same as used by the Department of Water Resources (DWR) in their Bulletin 130 Series except as explained below.
2. The numbering system used on this map is an adaptation of the numbering system used in the 130 Series.
3. The boundary between Region 8 and Region 4 follows the boundary between Los Angeles County and Orange or San Bernardino Counties, not the Hydrologic Boundary. The San Bernardino County line splits Hydrologic Unit 1 (Santa Ana River HU) so that Sub-Areas 481.21, 481.22, and 481.23 are legally in Region 4 but drain into Region 8. The Orange County line splits Hydrologic Unit 5 (Los Angeles-San Gabriel River HU) so that Sub-Areas 845.15, 845.61, 845.62 and 845.63 are legally in Region 8 but drain into Region 4. Therefore, a 5 digit number on the map indicates that a regional boundary divides a hydrologic unit, area or subarea. In these cases the second digit is the number of the region from which the hydrologic area has been separated by the regional boundary. All other digits are as described in the legend.
4. The 1986 updated names shown on the map are in accordance with an agreement with DWR and US Geological Survey.



KEY TO REGION

LEGEND

- STREAM
- REGIONAL BOUNDARY
- HYDROLOGIC UNIT BOUNDARY (HU)
- HYDROLOGIC AREA BOUNDARY (HA)
- HYDROLOGIC SUBAREA BOUNDARY (SA)
- 5 HYDROLOGIC UNIT NUMBER



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April 1973
Revised: July 1976
Revised: August 1986

State Water Resources Control Board
Surveillance and Monitoring Section
T.E. Lavenda, P.E. T E Lavenda

State of California
REGIONAL WATER QUALITY CONTROL BOARD

Santa Ana Region (8)

SANTA ANA HYDROLOGIC BASIN PLANNING AREA (SA)

Scale in miles
8 0 8 16 24 32
Scale 1:500,000

Geological Faults

Southern California is a geologically active area. Major earthquake faults in the region include the San Andreas Fault and its large branch, the San Jacinto Fault; the Elsinore-Whittier Fault; and the Newport-Inglewood Fault. The San Andreas Fault divides the San Gabriel Mountains from the San Bernardino Mountains. The San Jacinto Fault, which splits off from the San Andreas Fault near San Bernardino, affects groundwater flows associated both with the Santa Ana and San Jacinto Rivers. The Elsinore-Whittier Fault passes under Prado Dam as it trends, like the others, from the northwest toward the southeast. The Newport-Inglewood Fault enters the region from the Los Angeles basin and passes offshore at Newport Beach. In addition to these major faults, there are many branching, connecting, and parallel faults in the region.

HISTORY OF WATER DEVELOPMENT

Early Settlement

Following the Spanish Mission and Rancho Periods, early agriculture centered around horses and cattle. In the early 1800s, the increasing population required more farms and orchards to produce more food. The weather generally supported farming year-round, but the dry summers made irrigation a necessity. Once water supplies became dependable, vast areas of citrus orchard and vineyards also followed. Today, the region still has strong ties to agriculture, including a large dairy industry, but much of what remains is under increasing development pressure. The future probably involves an even larger human population and much less commercial agriculture.

Original Conditions

Before this area was settled, it is thought that the Santa Ana River flowed from its headwaters in the San Bernardino Mountains to the Pacific Ocean throughout most of the year. The San Jacinto River, also a substantial surface stream, typically would have ended at Lake Elsinore, which acted as an inland sink. Once out of the sycamore-filled mountain canyon, these rivers meandered along in sandy streambeds, shaded by willows, cottonwoods, and live oaks, flows decreasing where water percolated, filling the groundwater basins, increasing where local geological features forced the groundwater to the surface. High groundwater made springs, swampy areas, marshes and bogs common.

Deep alluvial valley deposits made up large groundwater basins, both in the inland valleys and on the coastal plain, basins naturally full of fresh water. Along with its nearby tributaries, the Santa Ana River fed the Bunker Hill groundwater basin, the Colton and Riverside basins, and to a lesser extent, part of the Chino Basin. Streams in the San Gabriel Mountains recharged the Chino Basin. The San Jacinto River recharged a deep (over two thousand feet) graben, the San Jacinto groundwater basin, as it left the mountains, then several other basins in succession on its way to Lake Elsinore. When especially heavy rainfalls or a series of wet winters filled Lake Elsinore, overflows went down Temescal Creek to the Santa Ana River near Corona. The Santa Ana River entered Santa Ana Canyon and passed through the coastal mountains out onto the Orange County Plain, overlying another large, deep groundwater basin largely recharged by river flows. With the diversion of most of this natural surface flow for agricultural and domestic uses, creeks and rivers dried up, carrying only storm flows and runoff. Eventually, treated wastewater replaced some of the flows in some streams.

Irrigation

The first irrigation diversions were made directly from the streams, often using crude brush and sand dams and hand-dug ditches to lead the water from the river to the fields. As more and more settlers arrived, the number of diversions increased. Eventually, all the surface flows were taken and groundwater recharge diminished sharply.

Ground water pumping became necessary to provide water for irrigation and for the growing settlements. Windmills were followed by motor-driven pumps, and as groundwater levels fell, deep well turbines became necessary. Artesian areas, such as those near San Bernardino and in Fountain Valley, stopped flowing naturally. The springs, swamps, and other historically wet areas began drying up.

The history of the San Jacinto River and its tributaries parallels that of the Santa Ana. The San Jacinto had historically kept all the groundwater basins in that part of the region full. Now, there is essentially no surface flow beyond the mouth of the canyon, where it exits the mountains; the riverbed is typically dry. Flood flows every five or ten years, however, produce a broad, shallow “Mystic Lake” in the riverbed near the town of Lakeview.

Further downstream, the river is dammed to form Canyon Lake, just upstream from Lake Elsinore. As noted earlier, Lake Elsinore is normally a sink, with no outflow. High annual evaporation rates have historically limited the amount of water in the lake, which has gone dry several times in this century. Only torrential rains or extended wet cycles have produced the rare overflows down Temescal Creek to the Santa Ana River. Several projects to stabilize the level of Lake Elsinore are now being completed.

When local water supplies inevitably ran short, the area’s economy, based on agriculture, was strong enough to help support the construction of large imported water projects. The Metropolitan Water District of Southern California (locally MWD-

SC or “Met”) built and still operates the Colorado River Aqueduct, which has imported millions of acre-feet of water from the Colorado River across the Mojave Desert and into the region. A second, newer system, the California Water Project, pumps comparable volumes of water out of the Sacramento-San Joaquin Delta for delivery to the Santa Ana Region and other parts of Southern California.

Santa Ana River Stipulated Judgement

Despite the availability of imported water, legal arguments focused on locally available (generally cheaper) water supplies. Overuse of the upstream water by extensive recycling had reduced summer flows in the Santa Ana River to a trickle, and even that trickle was somewhat salty. The largest of these legal arguments pitted Orange County (the downstream users) against all of the upstream users in Riverside and San Bernardino Counties. When the case was settled through an engineered solution the four largest water districts - San Bernardino Valley Municipal Water District (MWD), Chino Basin MWD, Western MWD, and Orange County WD agreed to implement the court’s solution through a Santa Ana River Watermaster.

Minimum average annual flows and guaranteed quality (total dissolved solids, or TDS) from the San Bernardino area to and through the Riverside Narrows were required, as well as flows from the upper basin to the lower basin (Orange County), measured at Prado Dam. The water required to meet the Stipulated Judgement can be made up of wastewater, imported water, dry weather runoff or some combination of these, with TDS the measure of minimum acceptable quality.

Together, the four large water agencies affected by the judgement formed SAWPA, the Santa Ana Watershed Planning (later “Project”) Authority, a forum for discussion of water issues as well as a joint powers agency that can build projects of common interest to two or more members.

BASIN PLANNING

History

In the 1950s and ‘60s, the Regional Boards were not actively involved in water quality planning. Water quality problems typically resulted in controls on waste discharges, usually including effluent limits for TDS and perhaps a few other parameters. Beyond that, the only serious restrictions prohibited the creation of a pollution or nuisance. By 1970, however, the Regional Boards were actively involved in the formulation of plans to meet established water quality objectives. The federal Clean Water Act and the Porter-Cologne Act, which required basin-wide planning, plus the National Pollution Discharge Elimination System (NPDES), which empowers the states to set discharge standard, placed new tools in the hands of the Regional Boards and encouraged the development of new approaches to water quality management. With the development of the “1967 Standards,” applicable to interstate waters, came Water Quality Control

Policies for the San Gabriel Tidal Prism, for the Coastal Bays, Marinas and Sloughs, and for Pacific Ocean Coastal Waters.

In the Santa Ana Region, the 1971 Interim Water Quality Control Plan incorporated the 1967 Standards and set water quality objectives for the Santa Ana River at Prado Dam. After the State Board developed the Ocean Plan and the Thermal Plan, the revised Interim Water Quality Control Plan incorporated that information.

Also in the early 1970s, the Santa Ana Regional Water Quality Control Board (Regional Board) was investigating the salt balance situation in the upper basin. An early computer model, primitive and slow by modern standards but providing answers of a kind never available before, had been used to assess the situation. SAWPA was contracted to write the first (1975) essentially complete Basin Plan (Water Quality Control Plan) for the Regional Board, using an improved version of that model.

The 1975 Basin Plan outlined a specific water quality management scheme designed to improve groundwater quality in the upper basin. Unfortunately, the kinds of large-scale actions necessary to maintain the quality of the region's ground and surface waters – basin management facilities, changes in water supply, regional wastewater treatment – were well beyond the regulatory powers of the Regional Board.

One of the region's major problems at that time was salt balance. Salt (TDS) buildup in the water results from excessive reuse of a given volume of water. Each cycle of use, whether in the home, in industry or use by irrigated agriculture, adds salts directly or indirectly, either through partial evaporation (or evapotranspiration) or direct addition of soluble materials. Typically, each use of water adds 200-300 parts per million (ppm) or milligrams per liter (mg/L) of TDS. TDS begins to interfere with the use of water somewhere between 500 and 1000 mg/L TDS; at 2000 mg/L, water is brackish and generally unusable. In order to allow for subsequent use downstream and to keep ground and surface water bodies usable, careful management of water reuse was necessary. Unlimited recycling created water quality problems. "Pumpback" schemes were strongly discouraged.

Part of the 1975 Basin Plan's solution to the salt balance problem, which seemed most acute in the Chino groundwater basin, was to import and recharge large volumes of low-TDS State Water Project (SWP) water. A second feature of the implementation plan was a large wellfield to extract poor quality water from the lower part of the basin. The third component was a pipeline to the sea to export brines from the upper basin. As years have passed, the list of projects has changed, with desalters replacing groundwater flushing projects. Most of the brine line (the Santa Ana River Interceptor or SARI Line) has been built and one groundwater desalter (Arlington) is now in place. Plans for two more desalters (East and West Chino Basin) in this area are still in design; at least one more is proposed in the San Jacinto watershed.

The Santa Ana Regional Water Quality Control Board and SAWPA (now also including Eastern MWD as a member) have continued to work together toward a common goal

– a well-operated basin that meets reasonable standards in an economical manner and provides high-quality water supplies when and where they're needed.

THE SANTA ANA RIVER

Reaches

The mainstem of the Santa Ana River is divided into six reaches (Figure 1-2). Each reach is generally a hydrologic and water quality unit.

Reach 6 includes the river upstream of Seven Oaks Dam, now under construction. Flows consist largely of snowmelt and storm runoff. Water quality tends to be very high.

Reach 5 extends from Seven Oaks Dam to San Bernardino, to the San Jacinto Fault (Bunker Hill Dike), which marks the downstream edge of the Bunker Hill groundwater basin. Most of this reach tends to be dry, except as a result of storm flows, and the channel is largely operated as a flood control facility. The extreme lower end of this reach includes rising water and intermittently, San Timoteo Creek flows.

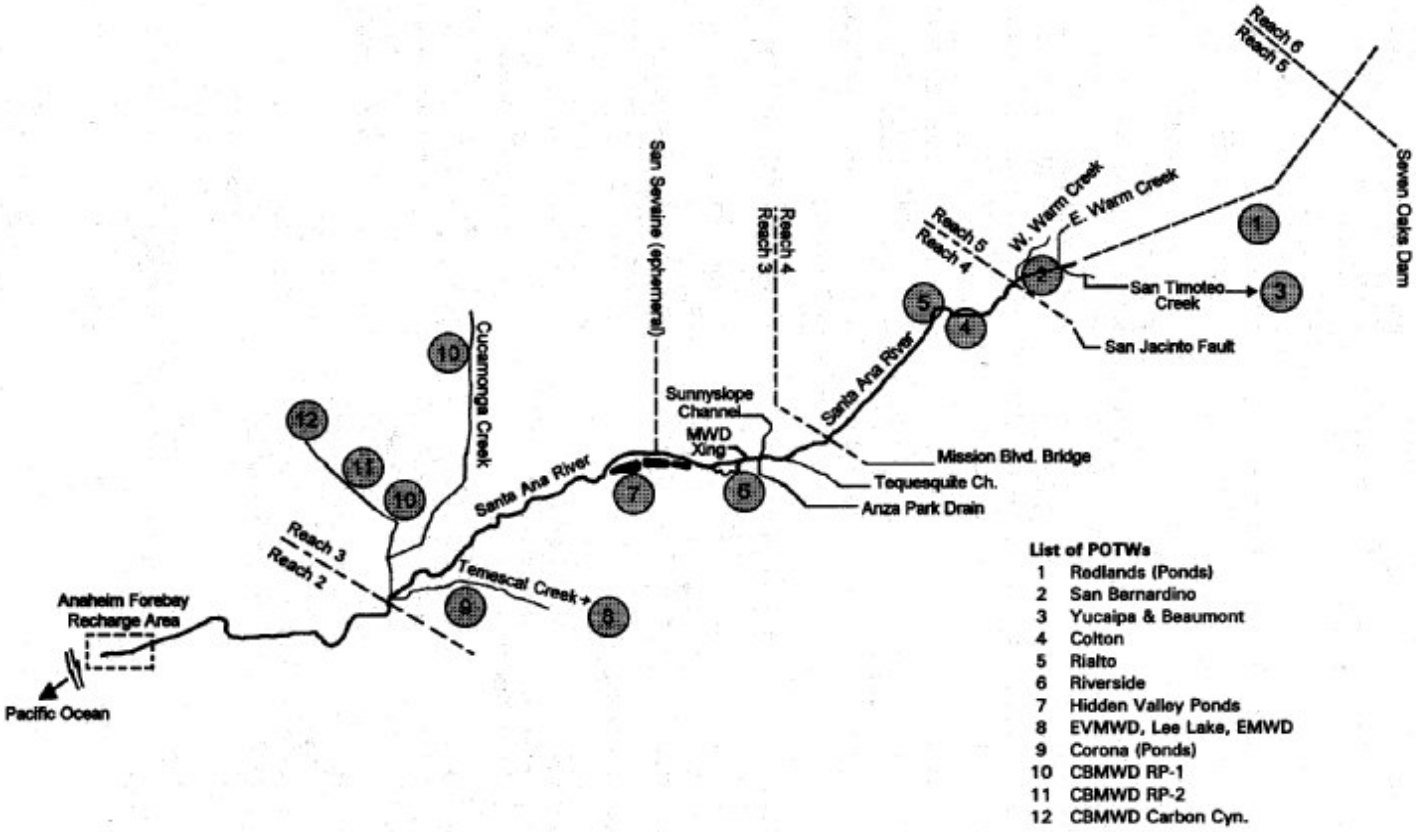
Reach 4 includes the river from the Bunker Hill Dike down to Mission Boulevard Bridge in Riverside. That bridge marks the upstream limit of rising water induced by the flow constriction in the Riverside Narrows. Until about 1985, rising water from upstream and wastewater discharges percolated and the lower part of the reach was dry. Flows are now perennial, but may not remain so as new projects are built. Much of this reach is also operated as a flood control facility.

Reach 3 includes the river from Mission Bridge to Prado Dam. In the Narrows, rising water feeds several small tributaries (Sunnyslope Channel, Tequesquite Arroyo, and Anza Park Drain) which are important breeding and nursery areas for the native fish. Temescal, Chino, and Mill/Cucamonga Creeks in Prado Basin are also important river tributaries.

Reach 2 carries all the upstream flows down through Santa Ana Canyon to Orange County where as much of the water as possible is recharged into the Orange County groundwater basin. The downstream end of the forebay/recharge area and, therefore, the ordinary limit of surface flows, is at 17th Street in Santa Ana.

Reach 1 is a normally dry flood control facility, presently being expanded and improved even further as a part of the US Army Corps of Engineers' Santa Ana River Project. This reach extends from 17th Street to the tidal prism at the ocean.

FIGURE 1-2
SANTA ANA RIVER AND TRIBUTARIES



Flows and Water Quality

When the Santa Ana River Stipulated Judgement was finalized in 1969, surface diversions and groundwater pumping had eliminated most of the dry weather surface flows in the river system between the mountains and Prado Dam. As the inland cities grew, wastewater flows increased. Between 1970 and 1990, the total volume rose from less than 50,000 to over 130,000 acre-feet per year. The river is effluent-dominated, a rare circumstance outside the Southwest. Nevertheless, water quality in the river has improved steadily, due largely to the efforts of the dischargers action in response to the requirements of the Regional Board.

In the 1970s, secondary treatment with disinfection was required in order to protect the health of the people who used it for contact recreation. These treatment requirements were further upgraded to include virus control: in-line coagulation and filtration and improved disinfection (or their equivalents) were then required. In the late 1980s, control of inorganic nitrogen levels was required to protect the aquatic habitat from un-ionized ammonia toxicity and to manage nitrate levels in groundwater for subsequent municipal uses. Further controls on residual chlorine levels were also added.

By 1991, when SAWPA's Use-Attainability Analysis of the middle Santa Ana River was conducted; full compliance with all these requirements had not yet been achieved. The river was posted to warn against water contact recreation, because certain upstream dischargers had not achieved compliance with virus control requirements. Compliance is expected by the end of 1995. Other identifiable water quality problems in the river were restricted to parts of Reach 4 where ammonia and chlorine controls were not yet in place. No water quality impairment due to toxics was seen in other parts of the system. In those other areas, the kinds and numbers of aquatic organisms at any given location tend to be dictated by habitat conditions.

Aquatic Environment in the Santa Ana River

Because flows are limited or generally absent in several parts of the Santa Ana River, there is no sustained aquatic habitat in those areas. Even where there are perennial flows, the habitat is frequently harsh – warm, shallow water, shifting sand substrate, little or no instream cover, and no riparian vegetation or tree canopy for shade.

There are no dependable flows from the mouth of the canyon, where the river leaves the mountains, for some distance downstream. In the canyon itself, the Corps of Engineers is presently building the Seven Oaks Dam, a large flood control structure. Groundwater recharge basins immediately downstream percolate flows from the river and its nearby tributaries. The river channel is operated as a typically dry flood control facility.

In the San Bernardino area, the San Jacinto Fault (Bunker Hill Dike) forces groundwater to the surface. At present (1993), perennial flows in the middle Santa Ana River begin at the confluence with East Warm Creek, a short distance upstream. The rising water area associated with the fault, now relatively small, was historically a

much larger, swampy area with many large springs. San Timoteo Creek, which the Corps of Engineers plans to line with concrete in the near future, joins the river in this area, its flows predominantly reclaimed wastewater from Yucaipa and other upstream dischargers.

East Warm Creek (near San Bernardino) carries small amounts of water from various non-point sources as well as some rising water. The San Bernardino Publicly-Owned Treatment Works (POTW) currently discharges to this creek just upstream of where it joins the river, but the city plans to move its point of discharge downstream in the near future. The river passes under several major highways and railroads in this area, and parts of the river bottom are lined with concrete. West Warm Creek, fully improved by the Corps for flood control but usually dry, also joins the river in this area.

The Santa Ana River Use-Attainability Analysis (1991) found areas of relatively high habitat value downstream of La Cadena Avenue in Colton, but these areas were largely washed out during the wet 1992-93 winter. Aquatic biota in the stream in this part of Reach 4 were limited, however, because certain POTWs had not yet installed full tertiary treatment and because physical conditions downstream – high temperatures, lack of cover or shelter – strongly discouraged upstream or downstream migration. Recent flood control maintenance practices have included removal of all vegetation and straightening of the river channel, severely reducing the value of the habitat. Surface flows presently continue on down through Reach 4, though conditions are likely to change when San Bernardino and Colton effluents are diverted to the RIX (rapid infiltration and extraction) project further downstream. The City of Rialto may also change its point of discharge to the river.

Near the Mission Boulevard Bridge and the upstream limit of Reach 3, rising water marks the Riverside Narrows area. Groundwater rises in the river channel and to either side as well. This water supports several small tributaries: Sunnyslope Channel, mostly improved for flood control; Tequesquite Arroyo Creek, which also drains Sycamore Canyon; and Anza Park Drain. In addition, the overflow from Lake Evans makes up a perennial tributary to the river in this area. These small streams form the present center of population of the Santa Ana Sucker, one of two remaining native species (in the Santa Ana River).

The City of Riverside's POTW on the south side of the river discharges in the Narrows, diverting all or part of its flows through the Hidden Valley Wildlife Area. Jurupa's Indian Hills POTW on the north side is permitted to discharge under certain conditions as well, but typically reclaims all its flow for golf course landscape irrigation.

From the Riverside Narrows area downstream to Prado Basin, the river is generally natural and unmodified. Even here, however, the water is warm because the mainstem is generally shallow and has a limited canopy. The substrate is dominated by shifting sand, limiting the bottom habitat and available opportunities for attached algae and insects, with only occasional gravel bars and riffles. The Santa Ana River Use-Attainability Analysis demonstrated that these habitat limitations dictate the kinds of numbers of aquatic organisms found here.

The Prado Flood Control Basin is a largely undisturbed, dense riparian wetland. In this area, flows in tributaries from both north and south of the river are again augmented by rising water. Temescal Creek comes in from the south, also carrying Arlington Channel flows and the occasional overflows from Lake Elsinore mentioned previously. A short distance from the river, near the edge of Prado Flood Control Basin, a section of Temescal Creek is the breeding center of the local Arroyo Chub population, the second native fish species still present in the middle river system. All the other species of fish found in the Middle Santa Ana River, including mosquitofish, bass, carp, catfish, etc., are exotics, escaped or introduced species.

All of the creeks draining Chino Basin come into the river on the north side, but the total dry-weather surface flow is negligible. Reclaimed wastewater from Chino Basin MWD's Regional Plant 1 is discharged to Cucamonga Channel, concrete-lined, offers extremely limited aquatic habitat – some attached algae, a few worms and insects, but not resident finfish. The improved channel ends near Prado Basin, and the stream changes names to Mill Creek. Chino Basin MWD's Regional Plant 2 discharges to Chino Creek near Prado Basin, some distance downstream of the discharge from the relatively new Carbon Canyon Plant. The lowest segments of Chino and Mill Creeks, down in Prado Basin, are quite different from most other streams in the watershed, with their muddy bottoms and deeper, slow-flowing water.

Most of the rising Chino Basin groundwater in the Prado area is high in TDS, nitrate, and other constituents, largely reflecting heavy present and historic agricultural water use in the area. Much of the initial water development went to citrus irrigation. That was supplanted first by large-scale vineyards and then by dairies, which are now slowly yielding to urban development.

Temescal Creek also carries reclaimed wastewater from the Lake Elsinore area, but most of that water percolates fairly quickly. Eastern MWD may discharge reclaimed wastewater to Temescal Creek in the future.

Below Prado Dam, the aquatic habitat is again different. The channel is deep in many places, with some rocky substrate and rapid sections. It supports a variety of organisms. In contrast, other stretches are improved for flood control. The river slows as it reaches Anaheim, where Orange County Water District diverts and recharges essentially all the dry weather flows. Downstream from the groundwater recharge areas near Anaheim, the Santa Ana River is normally dry.

WATER SUPPLY AND WASTEWATER RECLAMATION

The most serious water-related problem in the Santa Ana River Basin at this time is water supply. This region now uses approximately twice as much water as is available from local sources. As a result, the quantity of water imported into this region each year now equals or exceeds the amount of ground and surface water utilized.

As noted earlier, the Colorado River Aqueduct delivers water to Lake Matthews, but the relatively high mineral content of this water limits its reuse in this area. The State Water Project likewise imports water from the Sacramento-San Joaquin Delta, water with lower levels of dissolved minerals. State Water Project water can be used and reused again.

FLOOD CONTROL

Most of the annual rainfall in the Santa Ana Region occurs in the winter, as noted earlier. Further, most of it can come in a day or two, resulting in major floods and widespread damage. The last of these was shortly before World War II – much of coastal Orange County was inundated, stimulating the construction of Prado Dam by the US Army Corps of Engineers (Corps). The subsequent further urbanization of Orange County has been accompanied by channelizing essentially all the surface steams in the area.

The Corps is presently increasing the capacity of the main river channel through Orange County, and has begun construction of Seven Oak Dam in the San Bernardino Mountains, upstream of the mouth of Santa Ana River Canyon. Another of the Corps' current projects involves increasing the height of the Prado dam.

Flood control channels are typically designed to move large volumes of water from one place to another rapidly, without property damage. A fully improved channel is usually concrete, severely limiting the aquatic habitat beneficial uses. Partially improved channels may only have levees on either side, but other flood control activities (such as channel straightening, vegetation clearing, and weed control using copper or other toxic materials) can reduce or eliminate the aquatic habitat. Storm flows themselves, not necessarily part of flood events, can and do eliminate streamside habitat in parts of the river through sheer scouring force every few years.

ADOPTION OF THE BASIN PLAN – AMENDMENTS TO THE BASIN PLAN

As noted earlier, the California Water Code established the original requirements for the Basin Plan. After the necessary workshops and public hearings, the Regional Board formally adopts the Plan and forwards it to the State Board for their review and approval.

Pursuant to the California Fish and Game Code, Section 2090, Article 4, the Regional Board is required to consult with the Department of Fish and Game with respect to addressing the potential impacts (a) Basin Plan provision(s) may have on rare, threatened or endangered species within the Region. A Basin Plan or amendment is not considered final until that consultation has occurred.

After the State Board approval, the Office of Administrative Law (OAL) must review and approve any new regulatory provisions in the plan to assure that six specific standards are met: necessity (need for the regulation), authority (legislative or legal),

clarity (easily understood), consistency (with other regulations), reference (Water Code or other citation), and non-duplication (of existing regulations).

The plan is also transmitted to EPA for review and approval of those parts of the plan that establish or modify water quality standards as defined in the Clean Water Act (CWA).

CONTENTS OF THE BASIN PLAN

Chapter 2 (Plans and Policies) describes some of the many statewide regulatory and guidance documents which apply to the shape and the Regional Board's activities.

Chapter 3 (Beneficial Uses) discusses the many beneficial uses of the various waters of the Santa Ana Region. Ground and surface waterbodies are identified and tabulated, showing the beneficial uses of each.

Chapter 4 (Water Quality Objectives) also tabulates the region's waterbodies, and lists the water quality objectives (levels of various water quality parameters which must be met) necessary to protect those beneficial uses.

Chapter 5 (Implementation) details the Regional Board's water quality regulations and protection programs, lists the region's significant water quality problems and conditions, and describes approaches and solutions to them.

Chapter 6 (Monitoring and Assessment) contains listings and discussions of the monitoring programs, agencies involved, sampling locations and parameters tested, as well as the programs which collect, manage and maintain the data bases. California's statewide Water Quality Assessment is also described and referenced.

Chapter 7 (Water Resources and Water Quality Management) covers topics of regional importance not addressed in the other chapters.

REFERENCES

California Water Code, Section 13000, "Water Quality" ***et seq.***

Clean Water Act, PL 92-500, as amended

Annual Reports of the Santa Ana River Watermaster (Orange County Water District vs. City of Chino, ***et al.***) Case No. 117628 – County of Orange

Santa Ana Watershed Project Authority, Reports of the Santa Ana River Use-Attainability Analysis, 1991-3

CHAPTER 2

PLANS AND POLICIES

INTRODUCTION

In addition to the Santa Ana Region Basin Plan, a number of water quality control plans and policies adopted by the State Water Resources Control Board direct the Regional Board's actions. The State Board Plans and Policies which apply in this region are briefly described below. Copies of the plans and policies are attached in Appendix I.

These plans and policies may be reviewed periodically and may be revised. The Regional Board should be contacted to determine if a particular plan or policy is still current.

SATE BOARD PLANS

Thermal Plan (Resolution No. 75-89)

This plan, formally known as the "Water Quality Control Plan for Control for Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California," was developed and adopted in order to minimize the effects of wastes and wastewaters on the temperature of the receiving waters. This plan specifies water quality objectives, effluent quality limits, and discharge prohibitions related to thermal characteristics of interstate waters, enclosed bays estuaries, and waste discharges.

Ocean Plan (Resolution No. 90-27)

The "Water Quality Control Plan for Ocean Waters of California," amended in 1990, establishes beneficial uses and water quality objectives for waters of the Pacific Ocean along the California coast outside of enclosed bays, estuaries, and coastal lagoons. The Ocean Plan prescribes effluent quality requirements and management principles for waste discharge prohibitions.

The Ocean Plan identifies specific objectives for bacteriological, physical, chemical, and biological characteristics and radioactivity. These objectives are implemented by issuance of waste discharge requirements which include effluent limitations on major wastewater constituents and receiving water limitations for toxic materials. In addition, the Ocean Plan prohibits discharges of specific hazardous substances and waste sludge, bypassing of untreated waste, and impacts to Areas of Special Biological Significance.

Nonpoint Source Management Plan (Resolution No. 88-123)

In 1988, the State Board adopted the Nonpoint Source Management Plan which established the framework for statewide nonpoint source activities. Six statewide objectives and implementation strategies to manage nonpoint source problems are included in the plan. Chapter 5 provides more detailed information regarding the management plan.

Point sources were the principal focus of water quality control in the 1970s and 1980s. Nonpoint sources are now receiving a larger proportion of planning and regulatory attention.

STATE BOARD POLICIES

Policy with Respect to Maintaining High Quality Waters in California (Resolution No. 68-16)

The regulations implementing the Clean Water Act (40 CFR 131.6; 131.12(a)) require that each state develop and adopt a statewide antidegradation policy. In California, this requirement is satisfied by SWRCB Resolution No. 68-16, the "Statement of Policy with Respect to Maintaining High Quality Waters of California." The SWRCB policy requires the continued maintenance of existing high quality waters unless there is a demonstration that: (1) allowing some degradation is consistent with the maximum benefit to the people of the state; and (2) that such degradation would not unreasonably affect existing or potential beneficial use.

Actions which may adversely affect surface water quality must satisfy both Resolution No. 68-16 and the federal antidegradation policy (40 CFR 131.12). The requirements of the two policies are similar: the federal policy requires that existing instream uses and the level of water quality necessary to protect them must be maintained and protected. In addition, a reduction in water quality can be allowed only if there is a demonstration that such a reduction is necessary to accommodate important economic or social development.

Policy for Water Quality Control (by motion July 6, 1972)

This policy declares the State Board's intent to protect water quality through the implementation of water resources management programs and serves as the general basis for the adoption of subsequent water quality control policies.

Policy for Enclosed Bays and Estuaries (Resolution No. 74-43)

The Bays and Estuaries Policy recognizes the high environmental and ecological values of the bays and estuaries in the state. Specific direction is given regarding the San Francisco Bay-Delta system. New discharges to other bay and estuarine waters

are prohibited unless enhancement of those waters can be demonstrated. It is also the state's stated policy to phase out or in other ways eliminate existing discharges to bays and estuaries unless such enhancement can de demonstrated.

Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling (Resolution No. 75-58)

This policy provides consistent principles and guidance for supplementary waste discharge requirements or other water control actions for thermal powerplants using inland waters for cooling. The policy specifies that fresh inland waters should be used for cooling only when other alternatives are environmentally undesirable or economically unsound.

Policy and Action Plan for Water Reclamation (Resolution No. 77-1)

The Reclamation policy recognizes the present and future need for increased amounts of water in California primarily to support growth. This policy commits both the State Board and Regional Boards to support reclamation in general and reclamation projects which are consistent with sound principles and demonstrated needs.

Policy on the Disposal of Shredder Waste (Resolution No. 87-22)

This policy permits the disposal of shredded waste produced by the mechanical destruction of car bodies, old appliances, and similar castoffs, into certain landfills under specific conditions designated and enforced by the Regional Boards.

Supplementary to the state policy, the Santa Ana Regional Board Shredder Waste Policy (Resolution 87-108) designates specific solid waste facilities in the region which are authorized to accept shredder waste. Prior to accepting shredder waste at a facility, a Report of Waste Discharge (ROWD) is required to be submitted to the Regional Board.

Sources of Drinking Water Policy (Resolution No. 88-63)

The sources of Drinking Water Policy (Policy) declares that with specified expectations, all waters of the state are to be considers suitable, or potentially suitable, for municipal or domestic supply and should be so designated (**MUN**) by the Regional Boards. Those waters excepted under the Policy include the following: surface and ground waters that are contaminated, either by natural processes or by human activity, to the extent that they cannot reasonably be treated for domestic use; and surface waters in systems designated or modified to carry municipal/industrial/agricultural wastewaters or stormwater runoff. Other exceptions are specified in the Policy.

Adoption of the Policy required that Regional Boards review the beneficial uses of their ground and surface waters and determine where **MUN** designations should be added

and which water bodies should be excepted. Periodic reviews and updates of Regional Basin Plans must conform to this policy.

STATE BOARD PLANNING ACTIVITES FOR THE BAY/DELTA

The SWRCB is engaged in a comprehensive, multiphase program to protect the waters of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. While the Santa Ana Regional Board will not be directly involved in implementing the management plans which result from this program, the SWRCBs actions are likely to affect both water quality and quantity in the Regional Board's water quality control programs.

The Bay/Delta water system is a major source of supply to the State, providing more than half of all water used in California. The Bay/Delta is also of extreme ecological significance: it is one of the largest systems for fish and waterfowl habitat and production in the United States.

Two major water distribution systems divert water from the Delta: the Central Valley Project, operated by the United States Bureau of Reclamation; and the State Water Project (SWP), operated by the California Department of Water Resources. The SWP is an important source of high quality, supplemental water supplies for the Santa Ana Region (see Chapter 5 - Salt Balance and Assimilative Capacity). Numerous other water diversion and management efforts influence the inflows into, flows through, and outflows from the Bay/Delta estuary.

In 1978, the SWRCB adopted the "Water Quality Control Plan for the Sacramento-San Joaquin Delta and Suisun Marsh" (the Delta Plan) and Water Rights Decision 1485 (D-1485). The Delta Plan established water quality objectives for salinity and outflow standards and operational constraints necessary to meet the objectives and assure reasonable protection of beneficial uses. These outflow standards and operational constraints are implemented through D-1485.

The Delta Plan proceedings were limited to the current and near term conditions in the Delta. The SWRCB committed to subsequent review of the Delta Plan and is not in that process.

The current Bay/Delta review program has a number of components, including the development and adoption by the SWRCB of the "Water Quality Control Plan for Salinity – San Francisco Bay/Sacramento-San Joaquin Delta Estuary" (Salinity Plan, 19-15 WR, May 1991). This Plan is primarily concerned with salinity and temperature factors. Numerous water quality objectives were established for: salinity at municipal and industrial intakes; salinity levels to protect Delta agriculture; salinity levels to protect export agriculture; and salinity for fish and wildlife resources in the Estuary. Water quality objectives were also established to provide expansion of the period of protection for striped bass spawning, and to address temperature and dissolved oxygen levels for fisheries in the Delta.

This Salinity Plan set the stage for the ongoing Water Rights phase of the proceedings. Determining the flow requirements necessary to meet the Plan objectives and the allocation of responsibility for meeting those objectives will lead to a revised Water Rights Decision.

A draft decision (D-1630) was released in 1992 and revised in 1993. D-1630 called for substantial limits on exports of waters from the Bay/Delta system, including exports to the SWP, during spring. The quality of Bay/Delta waters is generally best during this time of high flows. Limiting exports to other times of the year is likely to mean that poorer quality water will be supplied to users outside the Bay/Delta system, including the Santa Ana Region. High quality SWP water is essential to address the severe mineralization problem in this Region (see Chapter 5).

The SWRCB has determined that it will not adopt an interim water rights decision (D-1630), in part because the above-average rainfall during 1993 eliminated the urgent need to do so to protect fish and wildlife resources. The SWRCB has resumed its proceedings to establish a long-term water right decision to replace D-1485.

CHAPTER 3
BENEFICIAL USES

INTRODUCTION

Basically, a beneficial use is one of the various ways that water can be used for the benefit of people and/or wildlife. Examples include drinking, swimming, industrial and agricultural water supply, and the support of fresh and saline aquatic habitats.

Section 303 of the federal Clean Water Act (33 USC §1313) defines water quality standards as consisting of both the uses of the surface (navigable) waters involved and the water quality criteria which are applied to protect those uses. Under the Porter-Cologne Water Quality Control Act (California Water Code, Division 7, Chapter 2 §13050) these concepts are separately considered as beneficial uses and water quality objectives. Beneficial uses and water quality objectives are to be established for all waters of the state, both surface and subsurface (groundwater).

BENEFICIAL USES

Beneficial uses were tabulated and discussed in Chapters 1 and 2 of the 1975 Basin Plan and in Chapter 2 of the 1983 Basin Plan. In 1983, twenty-one beneficial uses were defined statewide. Of those, eighteen were identified and recognized in the 1983 Plan: **MUN, AGR, IND, PROC, GWR, NAV, POW, REC1, REC 2, COMM, WARM, COLD, CIOL, WILD, RARE, SPWN, MAR,** and **SHEL.**

In 1988, the State Board adopted the Sources of Drinking Water Policy (SWRCB Resolution No. 88-63) which directed the Regional Boards to add the Municipal and Domestic Supply (**MUN**) Beneficial Use for all waterbodies not already so designated, unless they met certain exception criteria. To implement this Policy, the Regional Board revised the table of Beneficial Uses in the 1983 Basin Plan, adding the **MUN** designation for certain waterbodies and specifically excepting others (RWQCB Resolution No. 89-42). Shortly thereafter, this revised Beneficial Use table was reviewed again and changes were made, including the addition of the Water Contact Recreation (**REC 1**) use for some waterbodies, the revision of some Beneficial Use designations from intermittent (I) to existing (X), and the addition of more waterbodies (RWQCB Resolution No. 89-99).

In this Plan, further changes to the Beneficial Use table have been made. Significant waterbodies not previously identified are included and the beneficial uses are designated. Certain of these waters are excepted from the **MUN** designation. The designation **RARE** has been added where substantial evidence indicates that the waterbody supports rare, threatened or endangered species (Appendix II). Certain known wetlands in the Region are listed in a new waterbody category (see wetlands discussion below). A revised list of Beneficial Uses was developed as part of a comprehensive statewide update of all Basin Plans. Using this revised statewide list as a guide, this Basin Plan updates the list of Beneficial Uses definitions contained in the 1983 Plan.

In all, twenty-three beneficial uses are now defined statewide; of these, nineteen are recognized within the Santa Ana Region. (The four not utilized are Migration of Aquatic Organisms, Freshwater Replenishment, Inland Saline Water Habitat and Aquaculture). One beneficial use specific to the Region, Limited Warm Freshwater Habitat, has been added, bringing the total number of beneficial uses recognized in the Santa Ana Region to twenty. The region's beneficial uses are listed and described below.

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BENEFICIAL USE DEFINITION

Municipal and Domestic Supply (**MUN**) waters are used for community, military, municipal or individual water supply systems. These uses may include, but are not limited to, drinking water supply.

Agricultural Supply (**AGR**) waters are used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.

Industrial Service Supply (**IND**) waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.

Industrial Process Supply (**PROC**) waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.

Groundwater Recharge (**GWR**) waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.

Navigation (**NAV**) waters are used for shipping, travel or other transportation by private, commercial or military vessels.

Hydropower Generation (**POW**) waters are used for hydroelectric power generation.

Water Contact Recreation **(REC 1*)** waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing and use of natural hot springs.

* The **REC 1** and **REC 2** beneficial use of designations assigned to surface waterbodies in this Region should not be construed as encouraging recreational activities. In some cases, such as Lake Matthews and certain reaches of the Santa Ana River, access to the waterbodies is prohibited because of potentially hazardous conditions and/or because of the need to protect other uses, such as municipal supply or sensitive wildlife habitat. Where **REC 1** or **REC 2** is indicated as a beneficial use in Table 3-1, the designations are intended to indicate that the uses exist or that the water quality of the waterbody could support recreational uses.

Non-contact Water Recreation (**REC 2***) waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting sightseeing and aesthetic enjoyment in conjunction with the above activities.

Commercial and Sportfishing (**COMM**) waters are used for commercial or recreational collection of fish or other organisms, including those collected for bait. These uses may include, but are not limited to, uses involving organisms intended for human consumption.

Warm Freshwater Habitat (**WARM**) waters support warmwater ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.

Limited Warm Freshwater Habitat (**LWRM**) waters support warmwater ecosystems which are severely limited in diversity and abundance as the result of concrete-lined watercourses and low, shallow dry weather flows which result in extreme temperature, pH, and/or dissolved oxygen conditions. Naturally reproducing finfish populations are not expected to occur in **LWRM** waters.

Cold Freshwater Habitat (**COLD**) waters support coldwater ecosystems that may include, but are not limited to, preservations and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.

Preservation of Biological Habitats of Special Significance (**BIOL**) waters support designated areas or habitats, including, but not limited to, established refuges, parks, sanctuaries, ecological reserves or preserves, and Areas of Special Biological Significance (ASBS), where the preservation and enhancement of natural resources requires special protection.

Wildlife Habitat (**WILD**) waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

Rare, Threatened or Endangered Species (**RARE**) waters support the habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened or endangered.

* The **REC 1** and **REC 2** beneficial use of designations assigned to surface waterbodies in this Region should not be construed as encouraging recreational activities. In some cases, such as Lake Matthews and certain reaches of the Santa Ana River, access to the waterbodies is prohibited because of potentially hazardous conditions and/or because of the need to protect other uses, such as municipal supply or sensitive wildlife habitat. Where **REC 1** or **REC 2** is indicated as a beneficial use in Table 3-1, the designations are intended to indicate that the uses exist or that the water quality of the waterbody could support recreational uses.

Spawning, Reproduction and Development (**SPWN**) waters support high quality aquatic habitats necessary for reproduction and early development of fish and wildlife.

Marine Habitat (**MAR**) waters support marine ecosystems that include, but are not limited to, preservation and enhancement of marine habitats, vegetation (***e.g.,*** kelp), fish and shellfish and wildlife (***e.g.,*** marine mammals and shorebirds).

Shellfish Harvesting (**SHEL**) waters support habitats necessary for shellfish (***e.g.,*** clams, oysters, limpets, abalone, shrimp, crab, lobster, sea urchins and mussels) collected for human consumption, commercial or sport purposes.

Estuarine Habitat (**EST**) waters support estuarine ecosystems, which may include, but are not limited to, preservation and enhancement of estuarine habitats, vegetation, fish, and shellfish, and wildlife, such as waterfowl, shorebirds, and marine mammals.

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More than one beneficial use may be identified for a given waterbody. The most sensitive use must be protected. The Regional Board reserves the right to resolve any conflicts among beneficial uses based on the facts in a given case.

WETLANDS

The Clean Water Act was enacted by Congress to restore and maintain the chemical, physical and biological integrity of the nation's waters. The nation's waters include ***wetlands***, as well as rivers, streams, lakes, estuaries and the territorial seas. Generally, wetlands include swamps, marshes, bogs, sloughs, mangroves, wet meadows, savannas, wet tundra, playa lakes and vernal pools. Wetlands serve a number of important functions, including absorption of floodwaters, shoreline erosion control and water quality improvement by the removal of pollutants. They also provide habitat for wetland species, and have important aesthetic, recreational, scientific and educational values. More than half of the wetlands in the United States have been destroyed. Due to this high loss, a goal of "no net loss" of wetlands has been established at both the federal and state level.

The definition of wetlands varies widely among the federal agencies, however both the United States Army Corps of Engineers and United States Environmental Protection Agency (US EPA) agree on the definition in Section 404 of the Clean Water Act, which specifies that wetlands are "those areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands are generally agreed to have three characteristics: hydrophytic vegetation; hydric soils; and wetland hydrology. Hydrophytic vegetation describes those plants adapted for growing in water, soil or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. Hydric soils are those soils that are oxygen-depleted due to saturation for long periods during

the growing season. Wetland hydrology can be described as the presence of water at or above the soil surface for a sufficient period of the year to significantly influence the plant types and soil that occur in the area. Strict definitions of these characteristics have not been formally adopted. The Regional Board includes these characteristics and criteria as general reference and not as guidance.

A part of an overall effort to protect the Nation's wetland resources, US EPA has called for states to adopt water quality standards (beneficial uses and water quality objectives) for wetlands. Applying water quality standards to wetlands provides a regulatory basis for a variety of wetlands management programs. For example, these standards will play an important role in the State and Regional Boards' water quality certification process by providing the basis for approving, conditioning or denying federal permits and licenses as appropriate. (This certification process, conducted in accordance with Section 401 of the CWA is described in more detail in Chapter 5.)

The 1975 and 1983 Basin Plans listed a number of waterbodies which are known to be or to include wetlands (***e.g.,*** San Joaquin Freshwater Marsh, Upper Newport Bay, Anaheim Bay-National Wildlife Refuge). These Plans specified both beneficial uses and water quality objectives for these waterbodies. In the earlier Plans, these waters were not specifically identified as wetlands. In this plan, a "Wetlands" waterbody category has been added to the Table of Beneficial Uses. Certain waters known to be wetlands are listed under this category and their beneficial uses are designated. (Note: estuarine wetlands continue to be shown in the "Bays, Estuaries and Tidal Prisms" category). The numeric objectives specified for these wetlands in the earlier Basin Plans are included in this Plan (Chapter 4). Additional numeric objectives will be developed and implemented as part of the ongoing Basin Planning process. Further detailed review of the water resources within the Region is also expected to result in the listing of additional wetlands.

The intent of including the wetlands category is to provide a more accurate description of the Region's waters. The listing of specific wetlands does not trigger any new or different regulatory actions by the Regional Board. Standards applied to permitting, 401 certification, and/or enforcement actions will not be affected by this listing. Again, the listing of wetlands in this Plan is a <u>partial</u> one only and should not be construed as placing any limitations on the exercise of the Regional Board's responsibilities or authorities with respect to the protection of wetlands in the region. Nor is the present listing intended to define wetlands which are subject to the United States Army of Corps of Engineers jurisdiction.

Figure 3-1 shows the general locations of the wetlands listed in this Plan. The specific boundaries of each of these wetland areas will be determined on an as-needed basis (for 401 certifications and the like), using the methods described in the 1987 Corps of Engineers Wetland Delineation Manual or other accepted techniques.

A brief description of each of the wetlands listed in this Plan is provided in Appendix III. Some of these wetlands occur naturally. Others were created, either incidentally, as the result of the construction of dams or levees, or purposefully, as mitigation for

development projects elsewhere. Examples of created wetlands include those in the Prado Basin, which resulted from the construction of Prado Dam, and the San Joaquin Freshwater Marsh, created for development mitigation purposes.

A third type of wetlands, constructed wetlands, is proposed for the Santa Ana Region. Constructed wetlands would be designed, built and managed to provide wastewater treatment to meet specific waste discharge requirements. Constructed wetlands do not include percolation ponds, equalization basins or other conventional treatment works. At this time, the proposed use of constructed wetlands in the region would be principally for nitrogen removal. The use of constructed wetlands for management of stormwater flows may also be proposed. Currently, the Orange County Water District is using approximately 600 acres of ponds in the Prado area to investigate the use of constructed wetlands for nitrogen removal. The City of Riverside proposes to construct and operate wetlands treatment ponds in the Hidden Valley area. Constructed wetlands are also being contemplated by Eastern Municipal Water District and Elsinore Valley Municipal Water District.

While the purpose of these constructed wetlands would be to provide wastewater treatment, they will inevitably have other uses and benefits, including the support of waterfowl and other wildlife and opportunities for education and recreation. The Regional Board's approach toward regulation of the use of these constructed wetlands will be to ensure that these affiliated uses are reasonably protected, while appropriate wastewater treatment uses are supported. As an example, the Board could allow the use of constructed wetlands for the treatment of various parameters such as nitrogen and phosphorus. However, the Board may disallow the use of wetlands for treatment of certain parameter such as toxics if there is evidence that these parameters would adversely and unreasonably affect the affiliated uses of the constructed wetlands. In this case, the Board would require compliance with toxics limits prior to discharge to the constructed wetlands.

In August 1993, the "California Wetlands Conservation Policy" was announced by the Governor. The Policy, included in the Appendix III, has three principal objectives:

- to ensure no overall net loss of wetlands and achieve a long-term gain in the quantity, quality and permanence of wetlands acreage and values;

- to reduce procedural complexity and confusion in the administration of wetlands conservation programs; and

- make cooperative planning efforts and landowner incentive programs the primary focus of wetland conservation and restoration.

The methods identified to achieve these objectives are numerous and include:

- a statewide wetlands inventory and identification of conservation, restoration and enhancement goals;

- development of a consistent wetlands definition, standards, and guidelines for regulatory purposes; and

- integration of wetlands policy and planning with other environmental and land use processes.

An interagency task force on wetlands is to be created to direct and coordinate administration and implementation of this policy.

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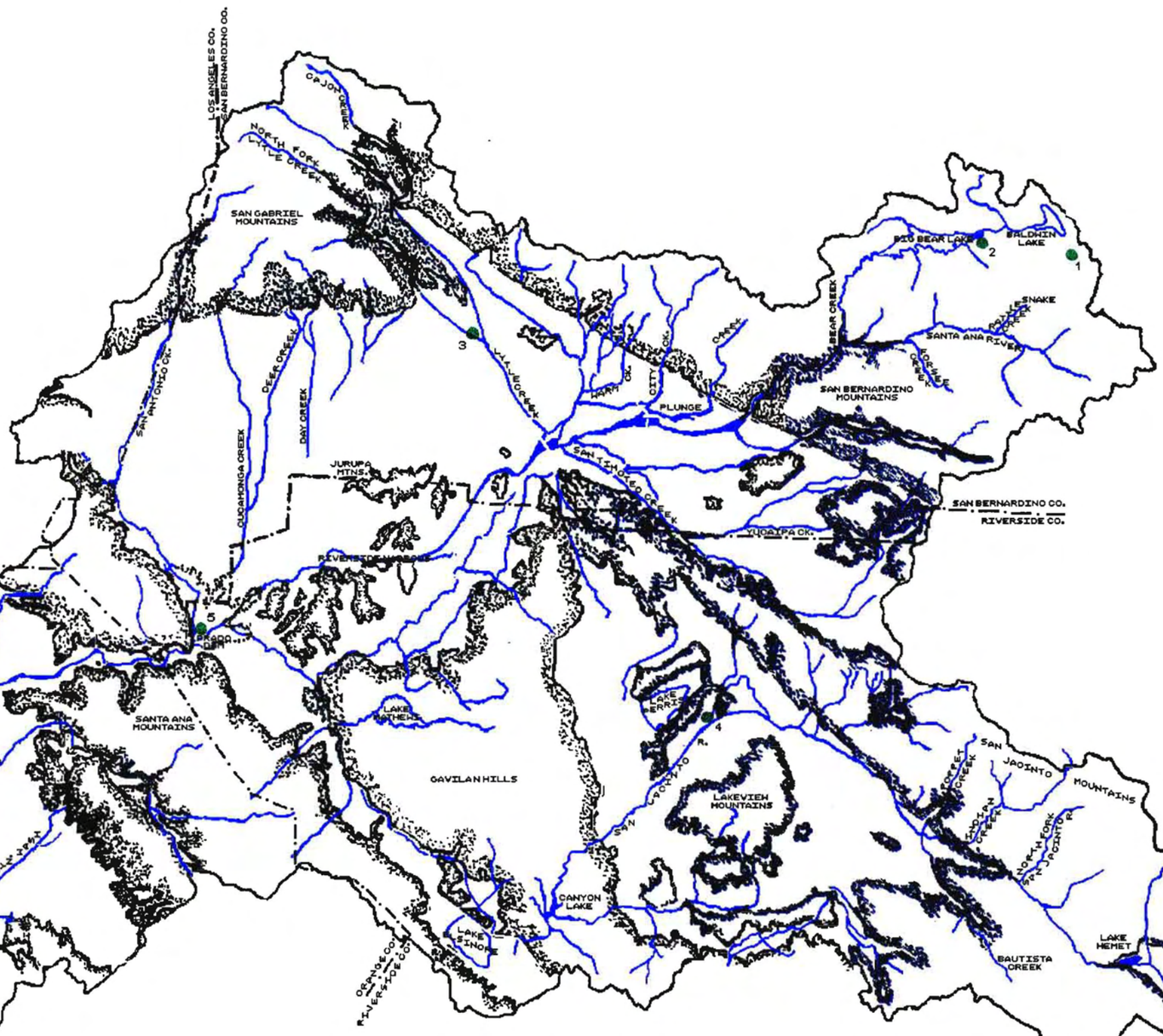
List of Wetlands

1 Shay Meadows
2 Stanfield Marsh
3 Glen Helen
4 San Jacinto Wildlife Area
5 Prado Flood Control Basin
6 San Joaquin Freshwater Marsh
7 Upper Newport Bay
8 Santa Ana River Salt Marsh
9 Bolsa Chica Ecological Reserve
10 Seal Beach - National Wildlife Refuge

FIGURE 3-1
SANTA ANA REGION
WETLANDS



GROUNDWATER (Amended by Resolution No. R8-2004-0001, January 22, 2004)

Groundwater subbasin boundaries included in the 1975 and 1984 Basin Plans, and initially in this 1995 Basin Plan, were, for the most part, based on data and information collected in the 1950's and 1960's. Since these boundaries were first established in the 1975 Basin Plan, a considerable amount of new water level, water quality and geologic data has become available. As part of the 2004 update of the TDS/Nitrogen management plan in the Basin Plan (see further discussion of this work in Chapter 5 – Salt Management Plan), these new data were used to review and revise the sub-basin boundaries.

To accomplish this task, all available geologic studies of the Santa Ana Region, through 1995, were gathered and re-analyzed. A comprehensive database of water level and water quality data and well drilling logs was created and utilized to delineate revised groundwater subbasin boundaries, now designated as groundwater "Management Zones". The groundwater Management Zones are shown in Figures 3-3 through 3-7.

The specific technical basis for distinguishing each groundwater Management Zone is provided in the report entitled "TIN/TDS Study – Phase 2A Final Technical Memorandum," Wildermuth Environmental, Inc., July 2000. In general, the new groundwater Management Zone boundaries were defined on the basis of (1) separation by impervious rock formations or other groundwater barriers, such as geologic faults; (2) distinct flow systems defined by consistent hydraulic gradients that prevent widespread intermixing, even without a physical barrier; and (3) distinct differences in water quality. Groundwater flow, whether or not determined by a physical barrier, was the principal characteristic used to define the Management Zones. Water quality data were used to support understanding of the flow regime and to assure that unusually high or poor quality waters were distinguished for regulatory purposes.

In addition to these technical considerations, water and wastewater management practices and goals for the Chino Basin were considered and used to define an alternative set of Management Zone boundaries for that area. These so-called "maximum benefit" Management Zone delineations , shown in Figure 3-5a, were developed as part of recommendations by the Chino Basin Watermaster and the Inland Empire Utilities Agency (IEUA) to implement a "maximum benefit" proposal, including an Optimum Basin Management Plan (OBMP), for the area.[1] These agencies have committed to the implementation of a specific set of projects and

[1] The term "maximum benefit" is drawn from the state's antidegradation policy (SWCRB Resolution No. 68-16; see Chapter 2)), which provides that high quality water can be lowered only if beneficial uses are fully protected and water quality consistent with ***maximum benefit*** to the people of the state is maintained.

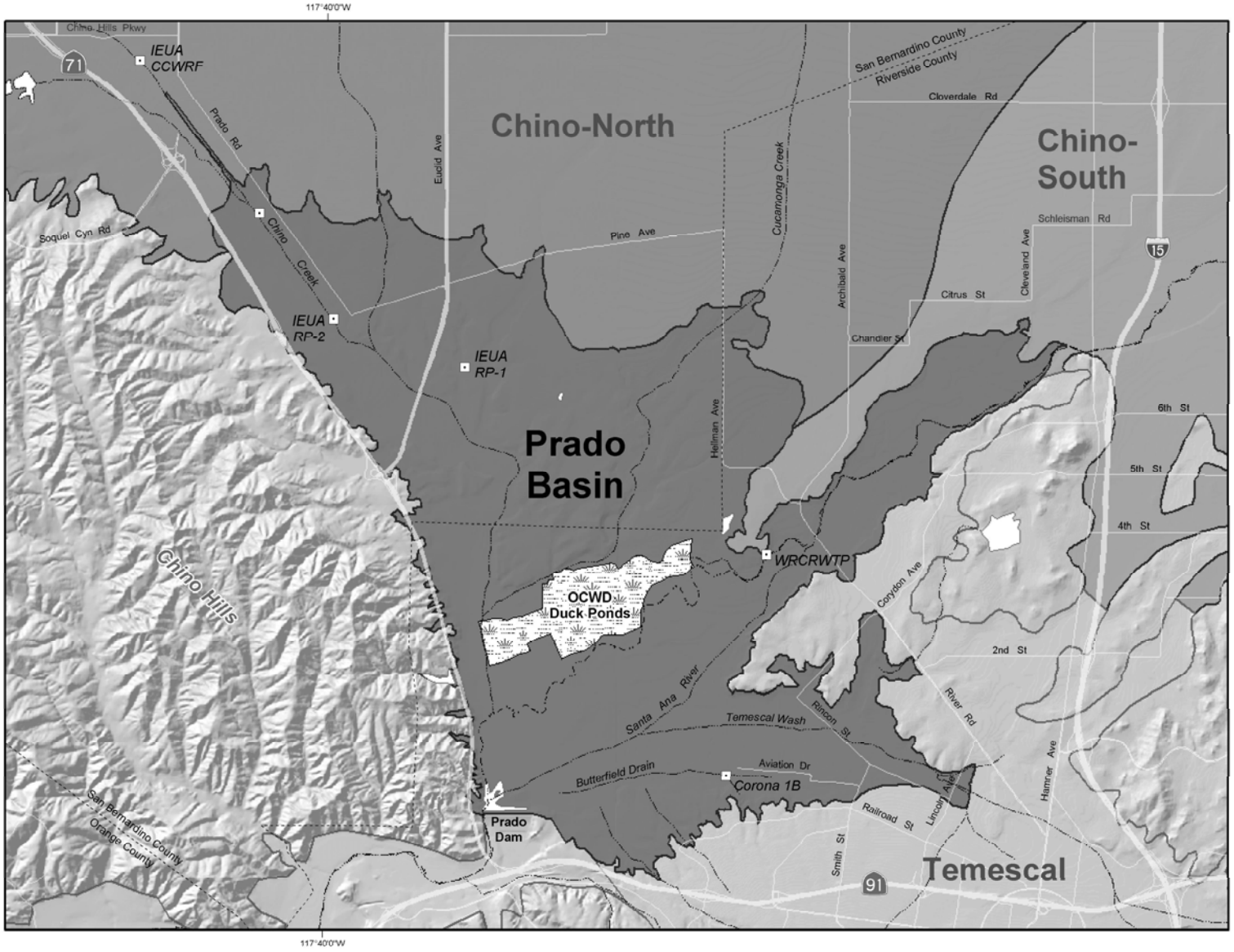
requirements in order to demonstrate that the "maximum benefit" Management Zone boundaries, and particularly the "maximum benefit" nitrate-nitrogen and TDS objectives for these Zones (see Chapter 4), assure protection of beneficial uses and are of maximum benefit to the people of the state (see Chapter 5, VII. Maximum Benefit Implementation Plans for Salt Management, A. Salt Management – Chino Basin and Cucamonga Basin). These "maximum benefit" Management Zone boundaries apply for regulatory purposes provided that the Regional Board continues to find that the Watermaster and IEUA are demonstrating "maximum benefit" by timely and appropriate implementation of these agencies' commitments. If, after consideration at a duly noticed Public Hearing, the Regional Board finds that these commitments are not being met and that "maximum benefit" is not being demonstrated, then the Management Zone boundaries for the Chino Basin shown in Figure 3-5b apply for regulatory purposes.

PRADO BASIN SURFACE WATER MANAGEMENT ZONE (PBMZ)

The flood plain behind Prado Dam has unique hydraulic characteristics. Chino Creek, Cucamonga Creek (which flows into Mill Creek) and Temescal Creek join the Santa Ana River behind the dam. Flood control operations at the dam, coupled with an extremely shallow groundwater table and an unusually thin aquifer, significantly affect these surface flows, as well as subsurface flows in the area. Depending on how the dam is operated, surface waters may or may not percolate behind the dam. There is little or no groundwater storage in the flood plain behind the dam. Any groundwater in storage is forced to the surface because the foot of Prado Dam extends to bedrock and subsurface flows cannot pass through the barrier created by the dam and the surrounding hills. Given these characteristics, this area is designated as a surface water management zone, rather than a groundwater management zone. The Prado Basin Management Zone is generally defined by the 566-foot elevation above mean sea level. It extends from Prado Dam up Chino Creek, Reach 1A and 1B to the concrete-lined portion near the road crossing at Old Central Avenue, up the channel of Mill Creek (Prado Area) to where Mill Creek becomes named as Cucamonga Creek and the concrete-lined portion near the crossing at Hellman Road, up what was formerly identified as Temescal Creek, Reach 1A (from the confluence with the Santa Ana River upstream of Lincoln Avenue) (this area is indistinguishable because of shifting topography and is now considered a part of the Prado Basin Management Zone), and up the Santa Ana River, Reach 3 to the 566-foot elevation (just west of Hamner Avenue). The Prado Basin Management Zone encompasses the Prado Flood Control Basin, which is a created wetlands as defined in this Plan (see the discussion of wetlands elsewhere in this Chapter). Orange County Water District's wetlands ponds are also located within the Prado Basin Management Zone.

The beneficial uses of the proposed PBMZ include all of the beneficial uses currently designated for the surface waters identified above. The PBMZ also incorporates the Prado Flood Control Basin. The beneficial uses previously identified for this Basin are designated also for the Zone (See Table 3-1, Beneficial Uses, page 3-21).

The Prado Basin Management Zone is shown in Figure 3-2.



Map Explanation

Management Zone Boundary

Rivers & Streams

Recycled Water Discharge Location

Produced by:

WE WILDERMUTH ENVIRONMENTAL, INC.
415 North El Camino Real Suite A
San Clemente, CA 92672
949.498.9294
www.wild-environment.com

Author: AEM
Date: 20031113
File: Figure_3-2.mxd

0 1 Miles
0 2 KM

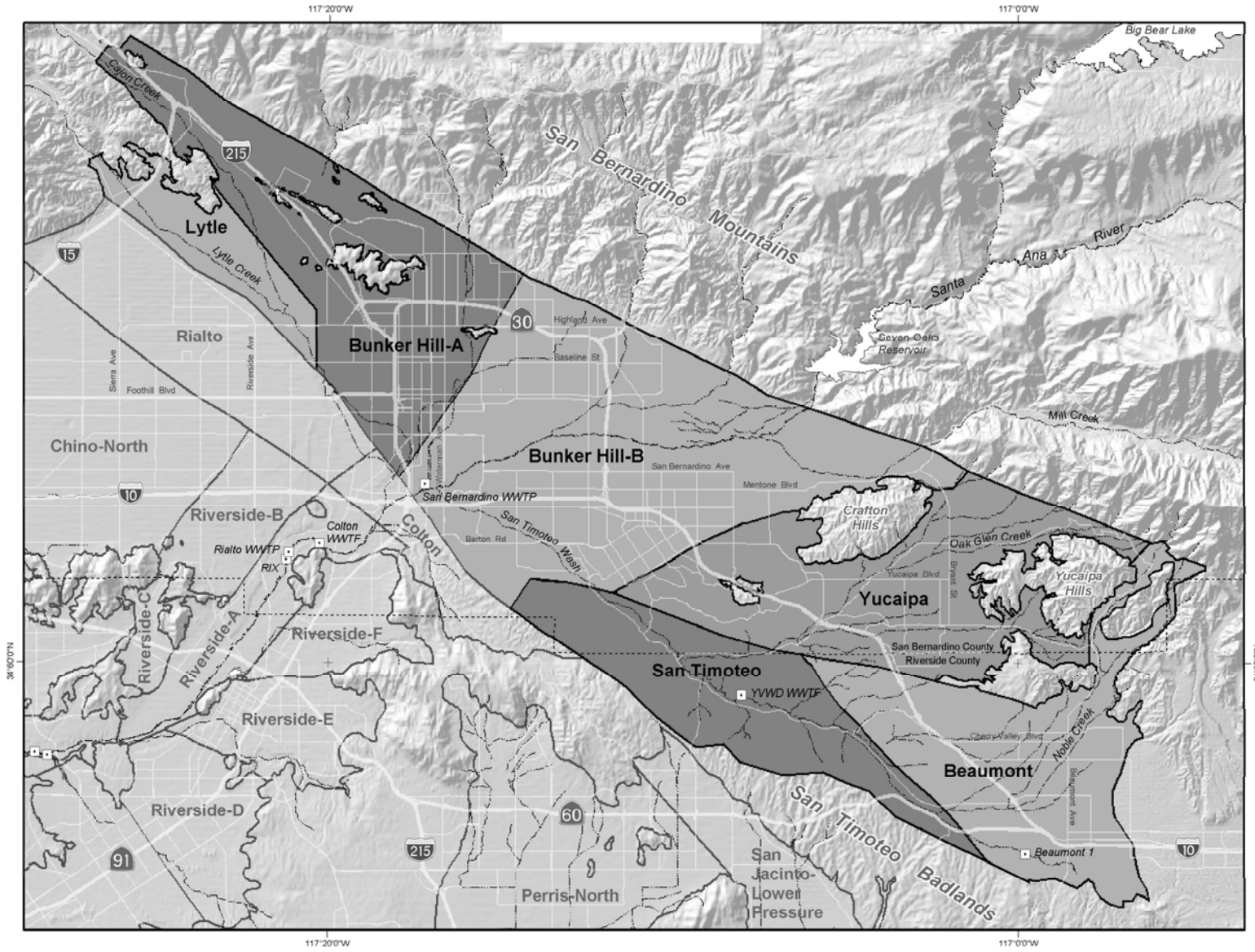
Produced for:

TIN/TDS Task Force

TIN/TDS Study Phase 2A -- Task 3
Develop Updated Boundary Maps for Management Zones (as Ammended and Revised)

Prado Basin
Management Zone Boundaries

Figure 3-2



Map Explanation

- Management Zone Boundary
- Rivers & Streams
- Recycled Water Discharge Location

Produced by:

WE Wildermuth Environmental, Inc.
23692 Birtcher Drive
Lake Forest, CA 92630
949.420.3030
www.wild-environment.com

Author: AEM
Date: 20031113
File: Figure_3-3.mxd

0 1 2 3 4 5 6 Miles
0 2 4 6 8 10 KM

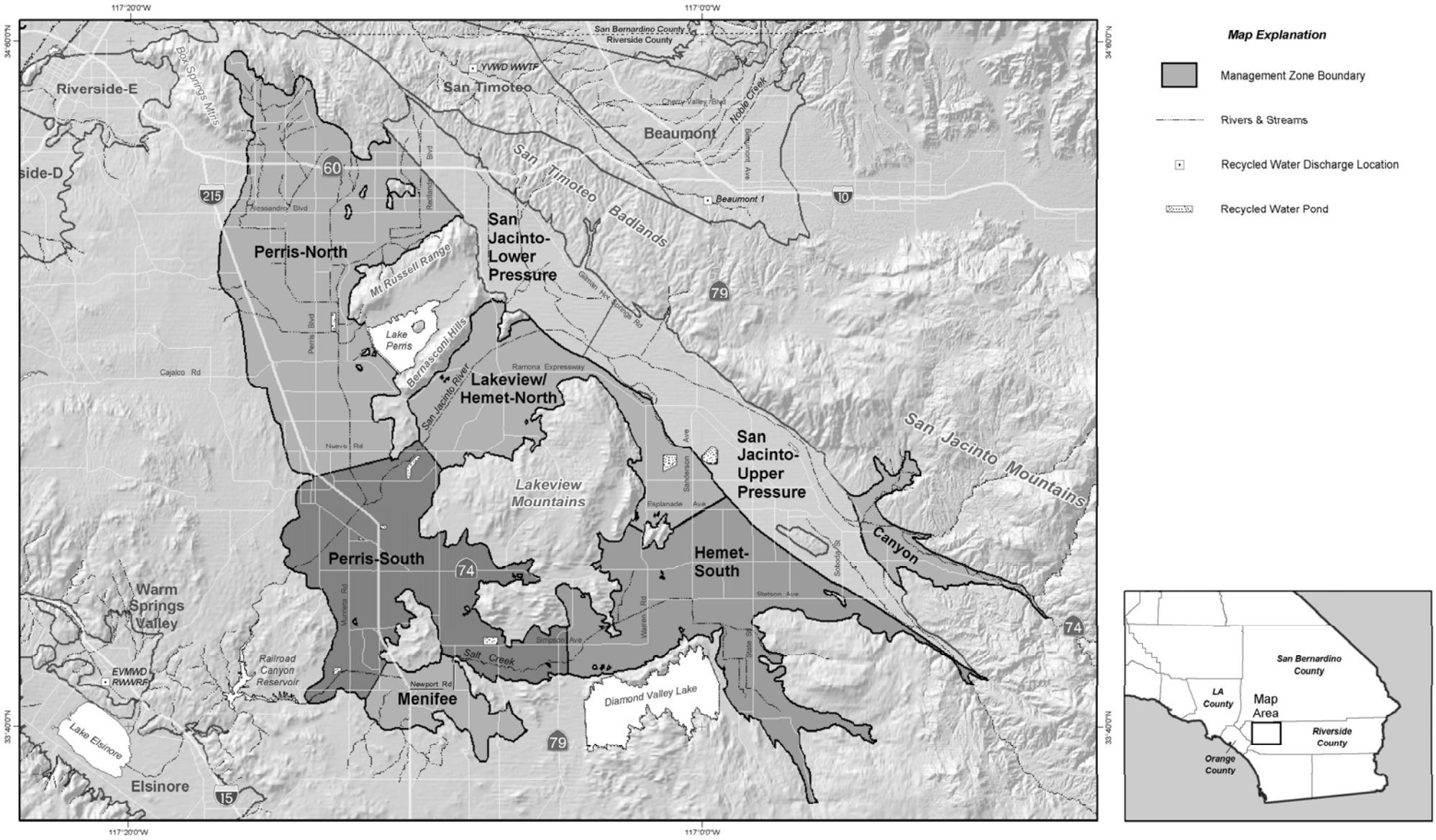
Produced for:

TIN/TDS Task Force

TIN/TDS Study Phase 2A -- Task 3
Develop Updated Boundary Maps for Management Zones (as Ammended and Revised)

Management Zone Boundaries
San Bernardino Valley & Yucaipa/Beaumont Plains

Figure 3-3



Map Explanation

- Management Zone Boundary
- Rivers & Streams
- Recycled Water Discharge Location
- Recycled Water Pond

Produced by:

WE Wildermuth Environmental, Inc.

23692 Birtcher Drive
Lake Forest, CA 92630
949.420.3030
www.wild-environment.com

Author: AEM
Date: 20031113
File: Figure_3-4.mxd

0 1 2 3 4 5 6 Miles

0 2 4 6 8 10 KM

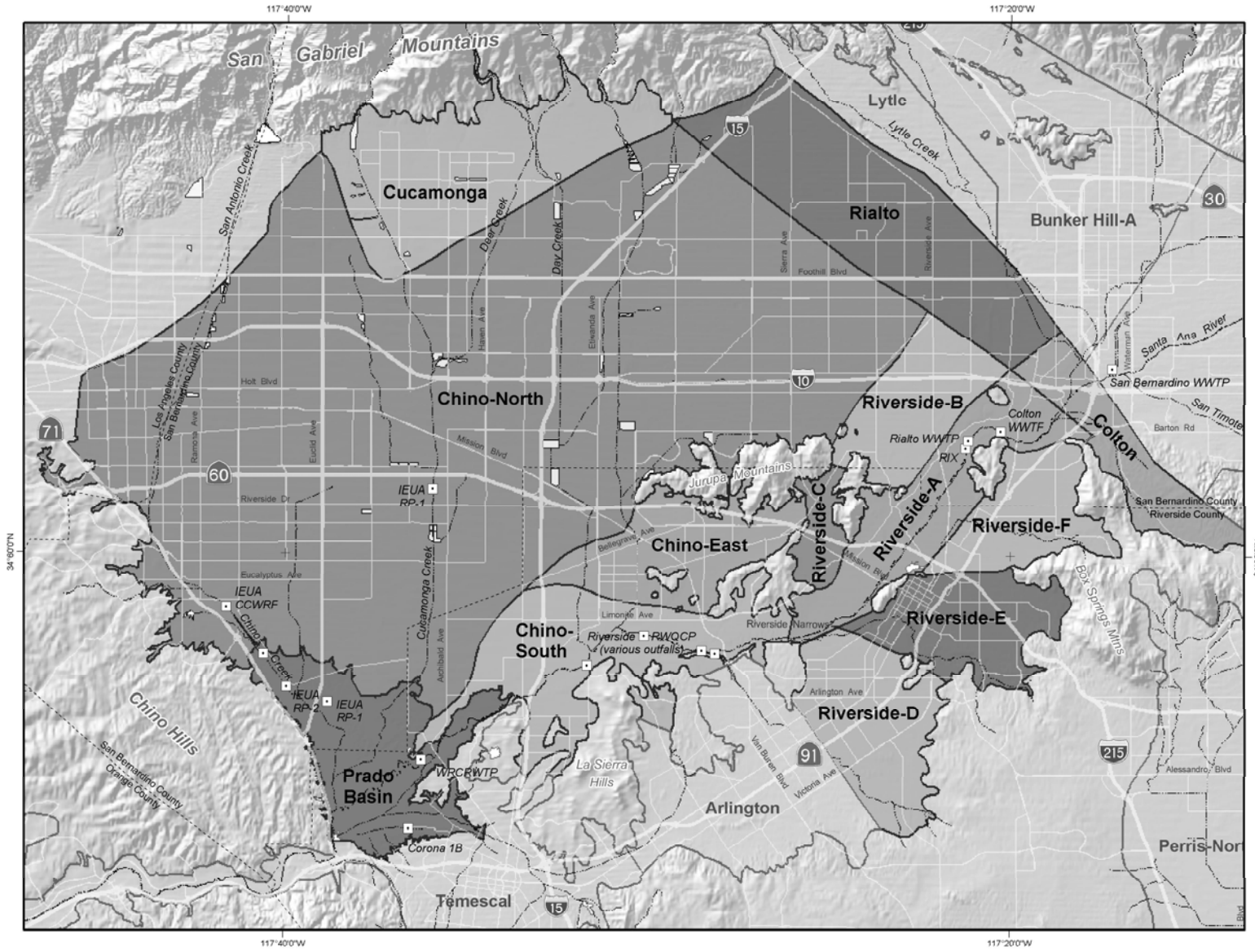
Produced for:

TIN/TDS Task Force

TIN/TDS Study Phase 2A -- Task 3
Develop Updated Boundary Maps for Management Zones (as Ammended and Revised)

Management Zone Boundaries
San Jacinto Basins

Figure 3-4



Map Explanation

- Management Zone Boundary
- Rivers & Streams
- Recycled Water Discharge Location

Produced by:

WE Wildermuth Environmental, Inc.
23692 Birtcher Drive
Lake Forest, CA 92630
949.420.3030
www.wild-environment.com

Author: AEM
Date: 20031113
File: Figure_3-5a.mxd

0 1 2 3 4 5 6 Miles

0 2 4 6 8 10 KM

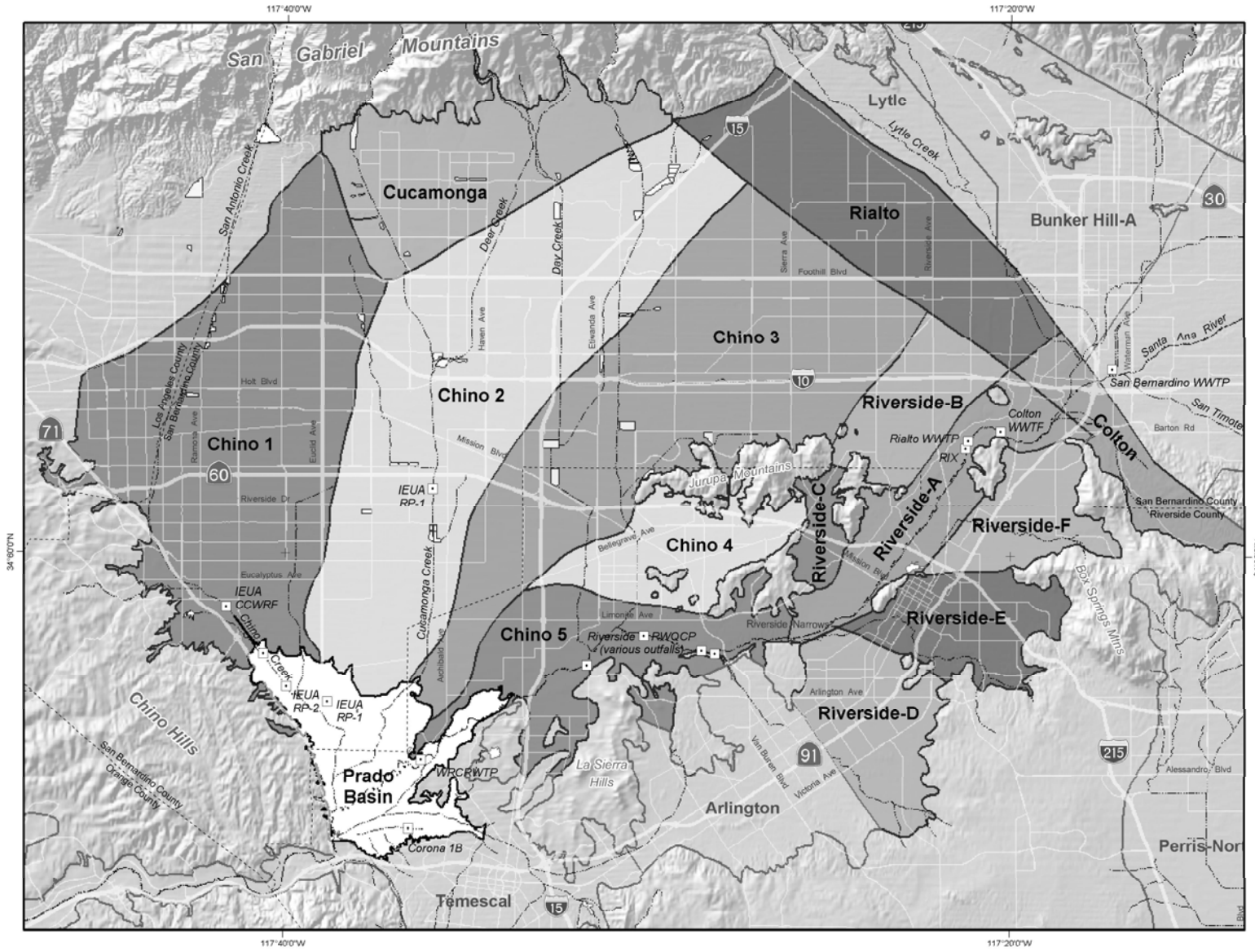
Produced for:

TIN/TDS Task Force

TIN/TDS Study Phase 2A -- Task 3
Develop Updated Boundary Maps for Management Zones (as Ammended and Revised)

Management Zone Boundaries
Chino (Maximum Benefit), Rialto-Colton, & Riverside Basins

Figure 3-5a



Map Explanation

- Management Zone Boundary
- Rivers & Streams
- Recycled Water Discharge Location

Management Zone Boundaries
Chino (Anti-degradation), Rialto-Colton, & Riverside Basins

Figure 3-5b

Produced by:

WE Wildermuth Environmental, Inc.
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Lake Forest, CA 92630
949.420.3030
www.wild-environment.com

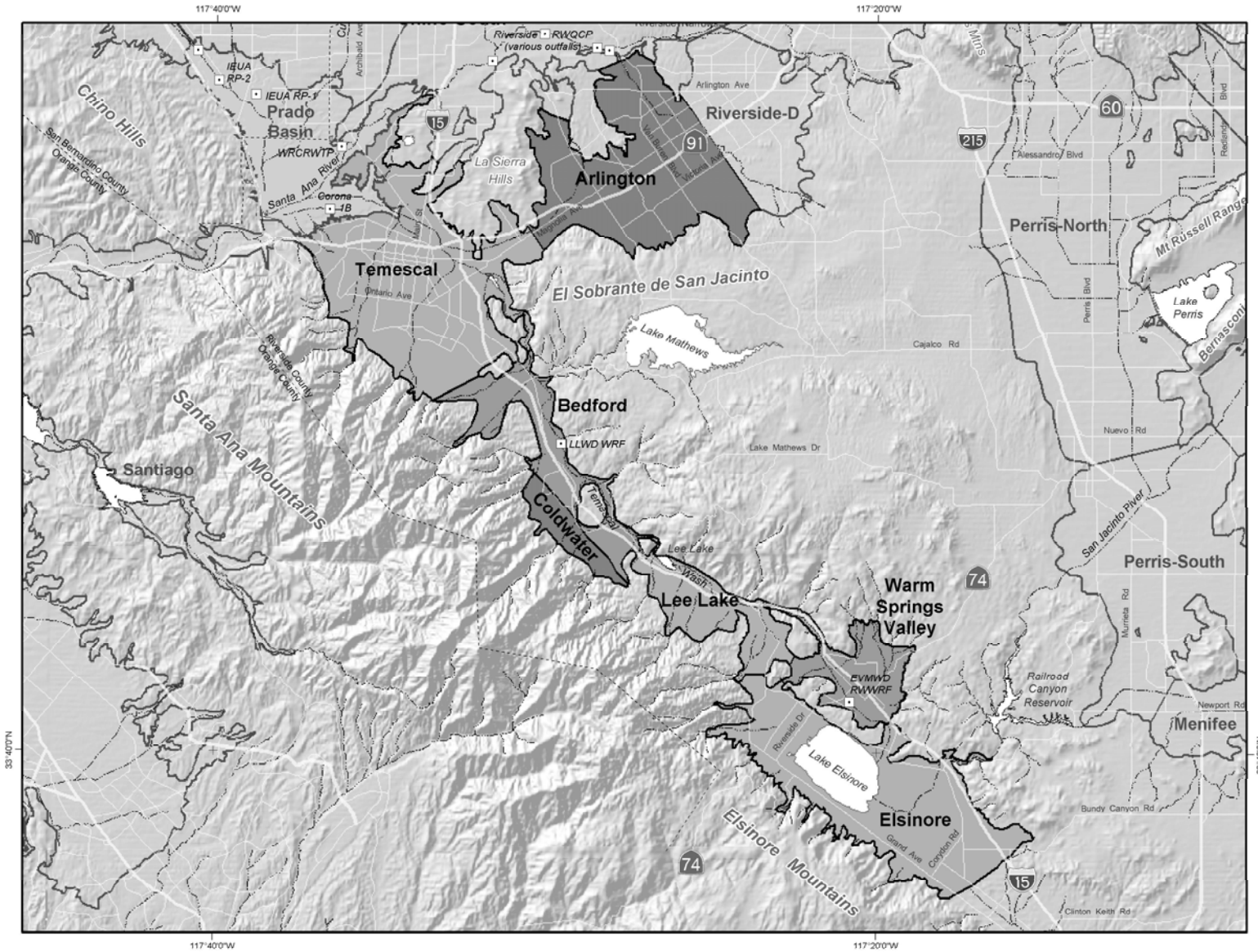
Author: AEM
Date: 20031113
File: Figure_3-5b.mxd

0 1 2 3 4 5 6 Miles
0 2 4 6 8 10 KM

Produced for:

TIN/TDS Task Force

TIN/TDS Study Phase 2A -- Task 3
Develop Updated Boundary Maps for Management Zones (as Ammended and Revised)



Map Explanation

- Management Zone Boundary
- Rivers & Streams
- Recycled Water Discharge Location

Produced by:

WE Wildermuth Environmental, Inc.
23692 Birtcher Drive
Lake Forest, CA 92630
949.420.3030
www.wild-environment.com

Author: AEM
Date: 20031113
File: Figure_3-6.mxd

0 1 2 3 4 5 6 Miles

0 2 4 6 8 10 KM

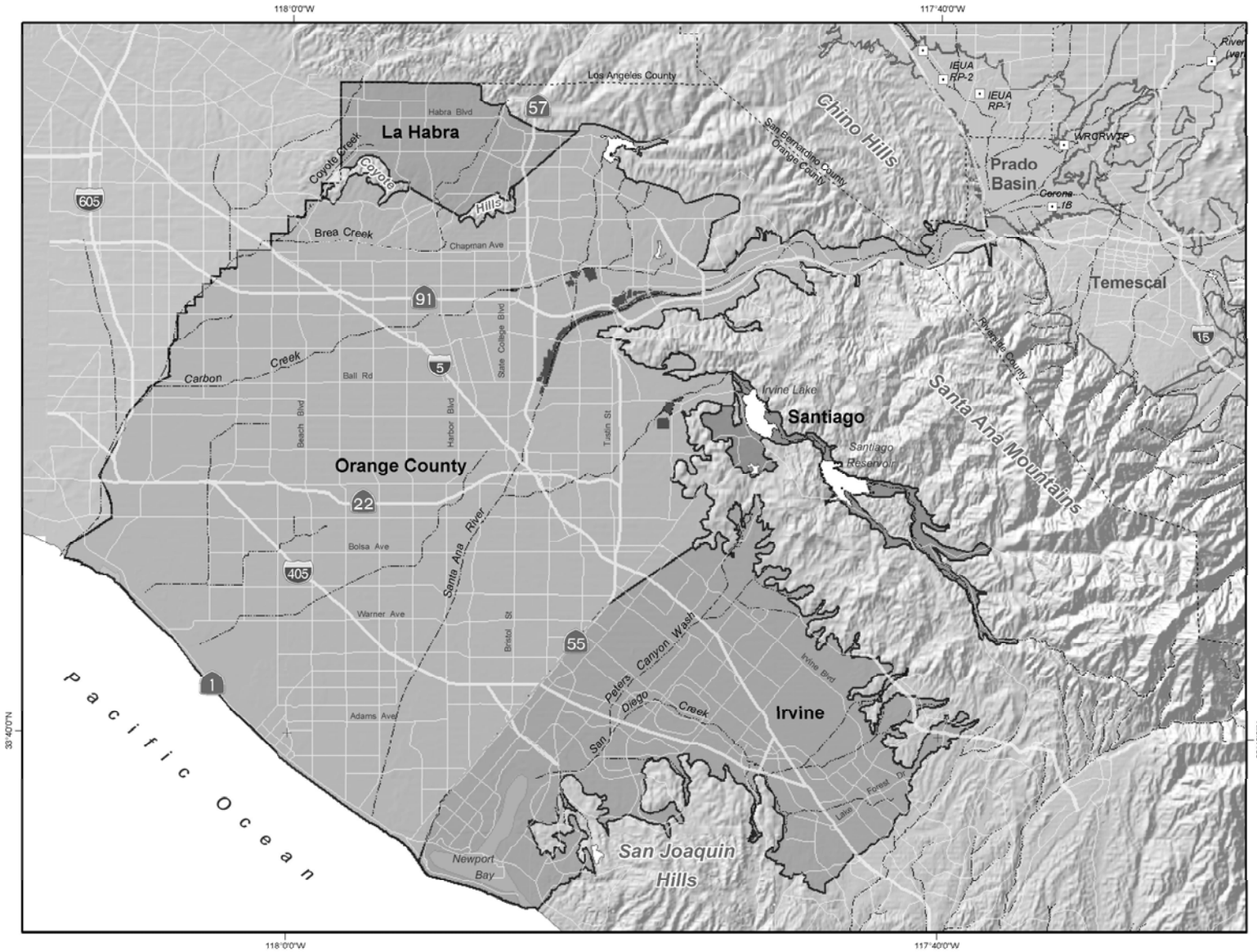
Produced for:

TIN/TDS Task Force

TIN/TDS Study Phase 2A -- Task 3
Develop Updated Boundary Maps for Management Zones (as Ammended and Revised)

Management Zone Boundaries
Elsinore/Temescal Valleys

Figure 3-6



Map Explanation

- Management Zone Boundary
- Rivers & Streams
- Recycled Water Discharge Location
- Orange County Water District Forebay Recharge Facilities

Produced by:

WE Wildermuth Environmental, Inc.
23692 Birtcher Drive
Lake Forest, CA 92630
949.420.3030
www.wild-environment.com

Author: AEM
Date: 20031113
File: Figure_3-7.mxd

0 1 2 3 4 5 6 Miles
0 2 4 6 8 10 KM

Produced for:

TIN/TDS Task Force

TIN/TDS Study Phase 2A -- Task 3
Develop Updated Boundary Maps for Management Zones (as Ammended and Revised)

Management Zone Boundaries
Orange County Basins

Figure 3-7

BENEFICIAL USE TABLE

Table 3-1 lists the designated beneficial uses for waterbodies within the Santa Ana Region. In this table, an "X" indicates that the waterbody has an existing or potential use. Many of the existing uses are well-known; some are not. Lakes and streams may have potential beneficial uses established because plans already exist to put he water to those uses, or because conditions (***e.g.,*** location, demand) make such future use likely. The establishment of a potential beneficial use serves to protect the quality of that water for such eventual use.

An "I" in Table 3-1 indicates that the waterbody has an intermittent beneficial use. This may occur because water conditions do not allow the beneficial use to exist year-round. The most common example of this is an ephemeral stream. Ephemeral streams in this region include, at one extreme, those which flow only while it is raining or for a short time afterward, and at the other extreme, established streams which flow through part of the year but also dry up for part of the year. While such ephemeral streams are flowing, beneficial uses are made of the water. Because such uses depend on the presence of water, they are intermittent. Waste discharges which could impair intermittent beneficial uses, whether they are made while those uses exist or not, are not permitted.

A "+" in the **MUN** column in Table 3-1 indicates that the waterbody has been specifically excepted from the **MUN** designation in accordance with the criteria specified in the "Sources of Drinking Water Policy."

The listing of waters within the basin attempts to include all significant surface streams and bodies of water, as well as the significant groundwater basins and subbasins which are receiving waters. Specific waters which are not listed have the same beneficial uses as the steams, lakes or reservoirs to which they are tributary or the groundwater basins or subbasin to which they are tributary or overlie.

REFERENCES

The Federal Clean Water Act, 33 USC 466 ***et seq.***

California State Water Resources Control Board, Resolution No. 88-63, "Sources of Drinking Water Policy," adopted May 19, 1988.

California Regional Water Quality Control Board, Santa Ana Region, Resolution No. 89-42, "Incorporation of 'Sources of Drinking Water' Policy into the Water Quality Control Plan (Basin Plan)," adopted March 10, 1989.

California Regional Water Quality Control Board, Santa Ana Region, Resolution No. 89-99, "Adoption of Revised Table of Beneficial Uses," adopted July 14, 1989.

California Water Code, Section 13000, "Water Quality" ***et seq.***

City of Big Bear Department of Water and Power, “Final Report – Task 4, Revised Water Quality Objectives, Big Bear Ground Water Basins,” April 1993.

United States Environmental Protection Agency “National Guidance-Water Quality Standards for Wetlands,” EPA 440/s-90-011, July 1990.

Governor Pete Wilson, “California Wetlands Conservation Policy,” August, 1993.

REGION 8 INDEX

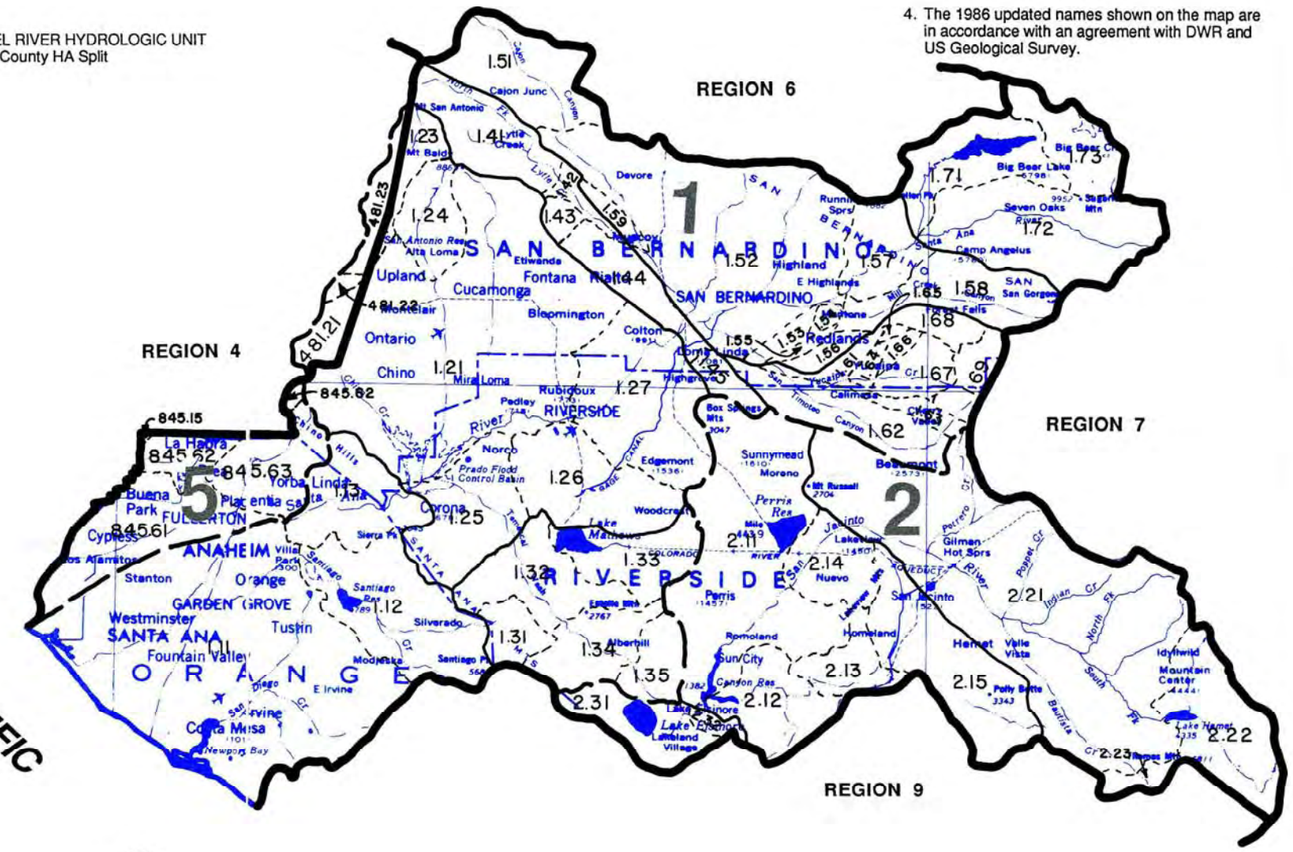
801.00	SANTA ANA RIVER HYDROLOGIC UNIT
801.10	Lower Santa Ana River HA
1.11	East Coastal Plain HSA
1.12	Santiago HSA
1.13	Santa Ana Narrows HSA
801.20	Middle Santa Ana River HA Split
801.21	Chino HSA Split
481.21	Chino HSA Split
481.22	Harrison HSA
801.23	Claremont Heights HSA Split
481.23	Claremont Heights HSA Split
801.24	Cucamonga HSA
1.25	Temescal HSA
1.26	Arlington HSA
1.27	Riverside HSA
801.30	Lake Matthews HA
1.31	Coldwater HSA
1.32	Bedford HSA
1.33	Cajalco HSA
1.34	Lee Lake HSA
1.35	Terra Cotta HSA
801.40	Colton-Rialto HA
1.41	Upper Lytle HSA
1.42	Lower Lytle HSA
1.43	Rialto HSA
1.44	Colton HSA
1.45	Reche HSA
801.50	Upper Santa Ana River HA
1.51	Cajon HSA
1.52	Bunker Hill HSA
1.53	Redlands HSA
1.54	Mentone HSA
1.55	Reservoir HSA
1.56	Crafton HSA
1.57	Santa Ana Canyon HSA
1.58	Mill Creek HSA
1.59	Sycamore HSA
801.60	San Timoteo HA
1.61	Yucaipa HSA
1.62	Beaumont HSA
1.63	Cherry Valley HSA
1.64	Chicken Hill HSA
1.65	Gateway HSA
1.66	Oak Glen HSA
1.67	South Mesa HSA
1.68	Triple Falls Creek HSA
1.69	Nobie Creek HSA
801.70	San Bernardino Mountain HA
1.71	Bear Valley HA
1.72	Seven Oaks HSA
1.73	Baldwin HSA

802.00	SAN JACINTO VALLEY HYDROLOGIC UNIT
802.10	Perris HA
2.11	Perris Valley HSA
2.12	Menifee HSA
2.13	Winchester HSA
2.14	Lakeview HSA
2.15	Hemet HSA
802.20	San Jacinto HA
2.21	Gilman Hot Springs HSA
2.22	Hemet Lake HSA
2.23	Bautista HSA
802.30	Elsinore Valley HA
2.31	Elsinore HSA
2.32	Railroad HSA

805.00	LOS ANGELES-SAN GABRIEL RIVER HYDROLOGIC UNIT
805.10	Coastal Plain of Los Angeles County HA Split
845.15	Central HSA Split
845.60	Anaheim HA Split
845.61	Anaheim HSA Split
845.62	La Habra HSA Split
845.63	Yorba Linda HSA Split

NOTE:

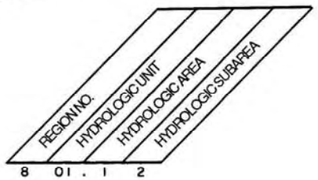
1. The names and areas shown on this map are the same as used by the Department of Water Resources (DWR) in their Bulletin 130 Series except as explained below.
2. The numbering system used on this map is an adaptation of the numbering system used in the 130 Series.
3. The boundary between Region 8 and Region 4 follows the boundary between Los Angeles County and Orange or San Bernardino Counties, not the Hydrologic Boundary. The San Bernardino County line splits Hydrologic Unit 1 (Santa Ana River HU) so that Sub-Areas 481.21, 481.22, and 481.23 are legally in Region 4 but drain into Region 8. The Orange County line splits Hydrologic Unit 5 (Los Angeles-San Gabriel River HU) so that Sub-Areas 845.15, 845.61, 845.62 and 845.63 are legally in Region 8 but drain into Region 4. Therefore, a 5 digit number on the map indicates that a regional boundary divides a hydrologic unit, area or subarea. In these cases the second digit is the number of the region from which the hydrologic area has been separated by the regional boundary. All other digits are as described in the legend.
4. The 1986 updated names shown on the map are in accordance with an agreement with DWR and US Geological Survey.



KEY TO REGION

LEGEND

- STREAM
- REGIONAL BOUNDARY
- HYDROLOGIC UNIT BOUNDARY (HU)
- HYDROLOGIC AREA BOUNDARY (HA)
- HYDROLOGIC SUBAREA BOUNDARY (SA)
- 5 HYDROLOGIC UNIT NUMBER



N

April 1973
Revised: July 1976
Revised: August 1986

State Water Resources Control Board
Surveillance and Monitoring Section
T.E. Lavenda, P.E. T E Lavenda

State of California
REGIONAL WATER QUALITY CONTROL BOARD

Santa Ana Region (8)

SANTA ANA HYDROLOGIC BASIN PLANNING AREA (SA)

Scale in miles
8 0 8 16 24 32
Scale 1:500,000

Table 3-1 BENEFICIAL USES - Continued

OCEAN WATERS	BENEFICIAL USE																			Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	MAR	SHEL	EST	Primary	Secondary
NEARSHORE ZONE*																						
San Gabriel River to Poppy Street in Corona Del Mar	+		X			X		X	X	X					X	X	X	X	X		801.11	
Poppy Street to Southeast Regional Boundary	+					X		X	X	X				X	X	X	X	X	X		801.11	
OFFSHORE ZONE																						
Waters Between Nearshore Zone and Limit of State Waters	+		X			X		X	X	X					X	X	X	X				

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

* Defined by Ocean Plan Chapter II B-1.: "Within a zone bounded by shoreline and a distance of 1000 feet from shoreline or the 30-foot depth contour, whichever is further from shoreline…"

Table 3-1 BENEFICIAL USES - Continued

BAYS, ESTUARIES, AND TIIDAL PRISMS	BENEFICIAL USE																				Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	MAR	SHEL	EST	Primary	Secondary
Anaheim Bay – Outer Bay	+					X		X[1]	X					X	X	X	X	X			801.11	
Anaheim Bay – Seal Beach National Wildlife Refuge	+							X	X	X				X	X	X	X	X		X	801.11	
Sunset Bay – Huntington Harbor	+					X		X	X	X					X	X	X	X			801.11	
Bolsa Bay	+							X	X	X				X	X	X	X	X	X			
Bolas Chica Ecological Reserve	+							X	X					X	X	X	X	X		X	801.11	
Lower Newport Bay	+					X		X	X	X					X	X	X	X	X		801.11	
Upper Newport Bay	+							X	X	X				X	X	X	X	X	X	X	801.11	
Santa Ana River Salt Marsh	+							X	X					X	X	X		X		X	801.11	
Tidal Prism of Santa Ana River (to within 1000' of Victoria Street) and Newport Slough	+							X	X	X					X	X		X			801.11	
Tidal Prism of San Gabriel River - River Mouth to Marina Drive	+		X					X	X	X					X	X		X	X	X	845.61	
Tidal Prisms of Flood Control Channels Discharging to Coastal or Bay Waters[1]	+							X	X	X					X			X			801.11	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

[1] No access per agency with jurisdiction (U.S. Navy)

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
LOWER SANTA ANA RIVER BASIN																				
Santa Ana River																				
Reach 1 – Tidal Prism to 17th Street in Santa Ana	+							X[2]	X		I				I				801.11	
Reach 2 – 17th Street in Santa Ana to Prado Dam	+	X			X			X	X		X				X	X			801.11	801.12
Aliso Creek	X				X			X	X		X				X	X			845.63	
Carbon Canyon Creek	X				X			X	X		X				X	X			845.63	
Santiago Creek Drainage																				
Santiago Creek																				
Reach 1 – below Irvine Lake	X				X			X[2]	X		X				X				801.12	801.11
Reach 2 – Irvine Lake (see Lakes, pg. 3-23																				
Reach 3 – Irvine Lake to Modjeska Canyon	I				I			I	I		I				I				801.12	
Reach 4 – Modjeska Canyon	X				X			X	X		X				X				801.12	
Silverado Creek	X				X			X	X		X				X				801.12	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
\+ Excepted from MUN (see text)

[2] Access prohibited in all or part by Orange County Resources Development and Management Division (RDMD)

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
LOWER SANTA ANA RIVER BASIN																				
Santiago Creek Drainage																				
Black Star	I				I			I	I		I				I				801.12	
Ladd Creek	I				I			I	I		I				I	I			801.12	
San Diego Creek Drainage																				
San Diego Creek																				
Reach 1 – below Jeffrey Road	+							X[2]	X		X				X				801.11	
Reach 2 – above Jeffrey Road to Headwaters	+				I			I	I		I				I				801.11	
Other Tributaries: Bonita Creek, Serrano Creek, Peters Canyon Wash, Hicks Canyon Wash, Bee Canyon Wash, Rattlesnake Canyon Wash, Sand Canyon Wash*, and other Tributaries to these Creeks	+				I			I	I		I				I				801.11	
San Gabriel River Drainage																				
Coyote Creek (within Santa Ana Regional boundary	X							X	X		X				X					

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

[2] Access prohibited in all or part by Orange County Resources Development and Management Division (RDMD)
* Sand Canyon Wash also has RARE Beneficial Use

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
UPPER SANTA ANA RIVER BASIN																				
Santa Ana River																				
Reach 3 – Prado Dam to Mission Blvd. in Riverside	+	X			X			X	X		X				X	X	X		801.21	801.21, 801.25
Reach 4 – Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino	+				X			X[3]	X		X				X		X		801.27	801.44
Reach 5 – San Jacinto Fault in Bernardino to Seven Oaks Dam[t]	X*	X			X			X[3]	X		X				X	X			801.52	801.57
Reach 6 – Seven Oaks Dam to Headwaters (see also Individual Tributary Streams)	X	X			X		X	X	X				X		X		X		801.72	
San Bernardino Mountain Streams																				
Mill Creek Drainage:																				
Reach 1 – Confluence with Santa Ana River to Bridge Crossing Route 38 at Upper Powerhouse	I	I			I			I	I		X		I		I	I			801.58	
Reach 2 – Bridge Crossing Route 38 at Upper Powerhouse Headwaters	X	X			X		X	X	X						X				801.58	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
\+ Excepted from MUN (see text)

* **MUN** applies upstream of Orange Avenue (Redlands); downstream, water is excepted from **MUN**
[t] Reach 5 uses are intermittent upstream of Waterman Avenue
[3] Access prohibited in some portions by San Bernardino County Flood Control

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																	Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Mountain Home Creek	X				X		X	X	X				X		X				801.58	
Mountain Home Creek, East Fork	X				X	X	X	X	X				X		X		X		801.70	
Monkey Face Creek	X				X			X	X				X		X				801.70	
Alger Creek	X				X			X	X				X		X				801.70	
Falls Creek	X				X		X	X	X				X		X				801.70	
Vivian Creek	X				X			X	X				X		X				801.70	
High Creek	X				X			X	X				X		X				801.70	
Other Tributaries: Lost, Oak Green, Skinner, Momyer, Glen Martin, Camp, Hatchery, Rattlesnake, Slide, Snow, Bridal Vail, and Oak Creeks and other Tributaries to these Creeks	I				I			I	I				I		I				801.71	
Bear Creek Drainage:																				
Bear Creek	X				X		X	X	X				X		X	X	X		801.71	
Siberia Creek	X				X			X	X				X		X		X		801.71	
Slide Creek	I				I			I	I				I		I				801.71	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
All other Tributaries to these Creeks	I				I			I	I				I		I				801.71	
Big Bear Lake (see Lakes, pg. 3-23)																				
Big Bear Lake Tributaries:																				
North Creek	X				X			X	X				X		X		X		801.71	
Metcalf Creek	X				X			X	X				X		X		X		801.71	
Grout Creek	X				X			X	X				X		X		X		801.71	
Rathbone (Rathbun) Creek	X				X			X	X				X		X				801.71	
Meadow Creek	X				X			X	X				X		X				801.71	
Summit Creek	I				I			I	I				I		I				801.71	
Other Tributaries to Big Bear Lake: Knickerbocker, Johnson, Minnnelusa, Polique, and Red Ant Creeks and other Tributaries to these Creeks	I				I			I	I				I		I				801.71	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Baldwin Lake (see Lakes, pg. 3-23)																				
Baldwin Lake Drainage:																				
Shay Creek	X				X			X	X				X		X	X			801.73	
Other Tributaries to Baldwin Lake: Sawmill, Green, and Caribou Canyons and other Tributaries to these Creeks	I				I			I	I				I		I				801.73	
Other Streams Draining to Santa Ana River (Mountain Reaches‡)																				
Cajon Creek	X				X			X	X				X		X	X			801.52	801.51
City Creek	X	X			X			X	X				X		X	X	X		801.57	
Devil Canyon Creek	X				X			X	X				X		X				801.57	
East Twin and Strawberry Creeks	X	X			X			X	X				X		X		X		801.57	
Waterman Canyon Creek	X				X			X	X				X		X				801.57	
Fish Creek	X				X			X	X				X		X		X		801.57	
Forsee Creek	X				X			X	X				X		X		X		801.72	
Plunge Creek	X	X			X			X	X				X		X	X			801.72	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

‡ The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Barton Creek	X	X			X			X	X				X		X				801.72	
Bailey Canyon Creek	I				I			I	I				I		I				801.72	
Kimbark Canyon, East Fork, Kimbark Canyon, Ames Canyon and West Fork Cable Creeks	X				X			X	X		X		X		X				801.52	
Valley Reaches‡ of Above Streams	I				I			I	I				I		I				801.52	
Other Tributaries (Mountain Reaches‡): Alder, Badger Canyon, Bledsoe Gulch, Borea Canyon, Breakneck, Cable Canyon, Cienega Seca, Cold, Converse, Coon, Crystal, Deer, Elder, Fredalba, Frog, Government, Hamilton, Heart Bar, Hemlock, Keller, Kilpecker, Little Mill, Little Sand Canyon, Lost, Meyer Canyon, Mile, Monore Canyon, Oak, Rattlesnake, Round Cienga, Sand, Schneider, Staircase, Warm Springs Canyon, and Wild Horse Creeks and other Tributaries to these Creeks	I				I			I	I				I		I				801.72	801.71, 801.57

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

‡ The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																	Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
San Gabriel Mountains Streams (Mountain Reaches‡)																				
San Antonio Creek	X	X	X	X	X		X	X	X				X		X				801.23	
Lytle Creek (South, Middle, and North Forks) and Coldwater Canyon Creek	X	X	X	X	X		X	X	X				X		X	X			801.41	801.42, 801.52, 801.59
Day Creek	X			X	X			X	X				X		X				801.21	
East Etiwanda Creek	X			X	X			X	X				X		X	X			801.21	
Valley Reaches ‡ of Above Steams	I				I			I	I		I				I				801.21	
Cucamonga Creek																				
Reach 1 – Confluence with Mill Creek to 23 rd St. in Upland	+				X			X[3]	X			X			X				801.21	
Reach 2 (Mountain Reach‡) - 23 rd St. In Upland to headwaters	X				X		X	X	X				X		X		X		801.24	
Mill Creek (Prado Area)	+							X	X		X				X	X			801.25	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

‡ The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

[3] Access prohibited in some portions by San Bernardino County Flood Control

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Other Tributaries (Mountain Reaches ‡): Cajon Canyon, San Sevaine, Deer, Duncan Canyon, Henderson Canyon, Bull, Fan, Demens, Thorpe, Angalls, Telegraph Canyon, Stoddard Canyon, Icehouse Canyon, Cascade Canyon, Cedar, Failing Rock, Kerkhoff, and Cherry Creeks and other Tributaries to these Creeks	I				I			I	I				I		I				801.21	801.23
San Timoteo Area Streams																				
San Timoteo Creek																				
Reach 1A – Santa Ana River Confluence to Barton Road	+	I						I[3]	I		I				I				801.52	
Reach 1B – Barton Road to Gage at San Timoteo Canyon Rd	+	I			I			I[3]	I		I				I				801.52	
Reach 2–Gage at San Timoteo to confluence with Yucaipa Creek	+				X			X[3]	X		X				X				801.61	
Reach 3 – Confluence with Yucaipa Creek to confluence with little San Gorgonio and Noble Creeks (Headwaters of San Timoteo Creek)	+				X			X	X		X				X	X			801.61	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

‡ The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

[3] Access prohibited in some portions by San Bernardino County Flood Control

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Oak Glen, Potato Canyon, and Birch Creeks	X				X			X	X		X				X				801.67	
Little San Gorgonio Creek	X				X			X	X				X		X				801.69	801.62, 801.63
Yucaipa Creek	I				I			I	I		I				I				801.67	801.61, 801.62, 801.64
Other Tributaries to these Creeks-Valley Reaches‡	I				I			I	I		I				I				801.62	801.52, 801.53
Other Tributaries to these Creek Creek-Mountain Reaches‡	I				I			I	I				I		I				801.69	801.67
Anza Park Drain	X							X	X		X				X		X		801.27	
Sunnyslope Channel	X							X	X		X				X		X		801.27	
Tequesquite Arroyo (Sycamore Creek)	+				X			X	X		X				X		X		801.27	
Prado Area Streams																				
Chino Creek																				
Reach 1A – Santa Ana River confluence to downstream of confluence with Mill Creek (Prado Area)	+							X	X		X				X	X			801.21	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

‡ The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																	Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Reach 1B – Confluence with Mill Creek (Prado Area) to beginning of concrete lined channel south of Los Serranos Rd.**	+							X	X		X				X	X			801.21	
Reach 2 – Beginning of concrete lined south of Los Serranos Rd. to confluence with San Antonio Creek	+				X			X[3]	X				X		X				801.21	
Temescal Creek																				
Reach 1 – Lincoln Ave. to Riverside Canal	+							X[4]	X		X				X				801.25	
Reach 2 – Riverside Canal to Lee Lake	+	I	I		I			I	I			I							801.32	801.25
Reach 3 – Lee Lake (see Lakes, Pg. 3-36)																				
Reach 4 – Lee Lake to Mid-Section line of Section 17 (downstream end of freeway cut)	+	I			I			I	I		I				I	X			801.34	
Reach 5 – Mid-section line of Section 17 (downstream end of Freeway cut) to Elsinore Groundwater Subbasin Boundary	+	X			X			X	X		X				X	X			801.35	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

** The confluence of Mill Creek is in Chino Creek, Reach 1B
[3] Access prohibited in some portions by San Bernardino County Flood Control District
[4] Access prohibited in some portions by Riverside County Flood Control District

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Reach 6 – Elsinore Groundwater Subbasin Boundary to Lake Elsinore Outlet	+				I			I	I		I				I				801.35	
Coldwater Canyon Creek	X	X			X			X	X		X				X				801.32	
Bedford Canyon Creek	+				I			I	I		I				I				801.32	
Dawson Canyon Creek	I				I			I	I		I				I				801.32	
Other Tributaries to these Creeks	I				I			I	I		I				I				801.32	
SAN JACINTO RIVER BASIN																				
San Jacinto River																				
Reach 1 – Lake Elsinore to Canyon Lake	I	I			I			I	I		I				I				801.32	802.31
Reach 2 – Canyon Lake (see Lakes, Pg. 3-24)																				
Reach 3 – Canyon Lake to Nuevo Road	+	I			I			I	I		I				I				802.11	
Reach 4 – Nuveo Road to North-South Mid-Section Line, T4S/R1W-S8	+	I			I			I	I		I				I				802.14	802.21
Reach 5 – North-South Mid-Section Line, T4S/R1 W-S8, to Confluence with Poppet Creek	+	I			I			I	I		I				I				802.21	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

Table 3-1 BENEFICIAL USES - Continued

INLAND SURFACE STREAMS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE*	SPWN	EST	Primary	Secondary
Reach 6 – Poppet Creek to Cranston Bridge	I	I			I			I	I		I				I				802.21	
Reach 7 – Cranston Bridge to Lake Hemet	X	X			X			X	X				X		X				801.21	
Bautista Creek – Headwaters to Debris Dam	X	X			X			X	X				X		X				802.21	802.23
Strawberry Creek and San Jacinto River, North Fork	X	X			X			X	X				X		X				801.21	
Fuller Mill Creek	X	X			X			X	X				X		X				802.22	
Stone Creek	X	X			X			X	X				X		X				802.21	
Salt Creek	+							I	I		I				I				802.12	
Other Tributaries: Logan, Black Mountain, Juaro Canyon, Indian, Hurkey, Poppet, and Protrero Creeks and other Tributaries to these Creeks	I	I			I			I	I		I				I				802.21	802.22

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

Table 3-1 BENEFICIAL USES - Continued

LAKES AND RESERVOIRS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
UPPER SANTA ANA RIVER BASIN																				
Baldwin Lake	+							I	I		I		I	I	I	I			801.73	
Big Bear Lake	X	X			X			X	X		X		X		X	X			801.71	
Erwin Lake	X							X	X				X	X	X	X			801.73	
Evans, Lake	+							X	X		X		X		X				801.27	
Jenks Lake	X	X			X			X	X				X		X				801.72	
Lee Lake	+	X	X		X			X	X		X				X				802.34	
Mathews, Lake	X	X	X	X	X			X[5]	X		X				X	X			802.33	
Mockingbird Reservoir	+	X						X[6]	X		X				X				802.26	
Norconian, Lake	+							X	X		X				X				802.25	
LOWER SANTA ANA RIVER BASIN																				
Anaheim Lake	+				X			X	X		X				X				801.11	
Irvine Lake (Santiago Reservoir)	X	X						X	X		X				X				801.12	
Laguna, Lambert, Peters Canyon, Rattlesnake, Sand Canyon, and Siphon Reservoirs	+	X						X[7]	X		X				X				801.11	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

[5] Access prohibited by the Metropolitan Water District.
[6] Access prohibited by the Gage Canal Company (owner-operator)
[7] Access prohibited by the Irvine Company and/or the Irvine Ranch Water District

Table 3-1 BENEFICIAL USES - Continued

LAKES AND RESERVOIRS	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE*	SPWN	EST	Primary	Secondary
SAN JACINTO RIVER BASIN																				
Canyon Lake (Railroad Canyon Reservoir)	X	X			X			X	X		X				X				802.11	802.12
Elsinore, Lake	+							X	X		X				X				802.31	
Fulmor, Lake	X	X						X	X		X		X		X				802.21	
Hemet, Lake	X	X			X		X	X	X		X		X		X		X		802.22	
Perris, Lake	X	X	X	X	X			X	X	X	X		X		X				802.11	

X Present or Potential Beneficial Use .
I Intermittent Beneficial Use
\+ Excepted from MUN (see text)

Table 3-1 BENEFICIAL USES - Continued

WETLANDS (INLAND)	BENEFICIAL USE																	Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
San Joaquin Freshwater Marsh**	+							X	X		X			X	X	X			801.11	801.14
Shay Meadows	I							I	I				I		I				801.73	
Stanfield Marsh**	X							X	X				X		X	X			801.71	
Prado Basin Management Zone@	+							X	X		X				X	X			802.21	
San Jacinto Wildlife Preserve**	+							X	X		X			X	X	X			802.21	802.14
Gen Helen	X							X	X		X				X				801.59	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

** This is a created wetland as defined in the wetland discussion
@ The Prado Basin Management Zone includes the Prado Flood Control Basin, a created wetland as defined in the Basin Plan (see Chapter 3, pages 3-4 through 3-7)

Table 3-1 BENEFICIAL USES - Continued

GROUNDWATER MANAGEMENT ZONES	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
UPPER SANTA ANA RIVER BASIN																				
Big Bear Valley	X			X															801.71	801.73
Beaumont	X	X	X	X															801.62	801.63, 801.69
Bunker Hill - A	X	X	X	X															801.52	801.52
Bunker Hill - B	X	X	X	X															802.52	801.53, 801.54, 801.57, 801.58
Colton	X	X	X	X															801.44	801.45
Chino North “maximum benefit”++	X	X	X	X															801.21	481.21, 481.23
Chino 1 – “antidegradation”++	X	X	X	X															801.21	481.21
Chino 2 – “antidegradation”++	X	X	X	X															801.21	
Chino 3 – “antidegradation”++	X	X	X	X															801.21	
Chino East @	X	X	X	X															801.21	801.27
Chino South @	X	X	X	X															801.21	801.25, 801.26
Cucamonga	X	X	X	X															801.24	801.21

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

++ Chino North “maximum benefit” management zone applies unless Regional Board determines that lowering of water quality is not of maximum benefit to the people of the state; in that case, the Chino 1, 2, and 3 “antidegradation” management zones would apply (see also discussion in Chapter 5).

@ Chino East and South are the designations in the Chino Basin Watermaster “maximum benefit” proposal (see Chapter 5) for the management zones identified by Wildermuth Environmental, Inc. (July 2000) as Chino 4 and 5, respectively.

Table 3-1 BENEFICIAL USES - Continued

GROUNDWATER MANAGEMENT ZONES	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Lytle	X	X	X	X															801.59	801.42
Rialto	X	X	X	X															801.44	801.21, 801.43
San Timoteo	X	X	X	X															801.62	801.61
Yucaipa	X	X	X	X															801.61	801.55, 801.63, 801.67
MIDDLE SANTA ANA RIVER BASIN																				
Arlington	X	X	X	X															801.26	
Bedford	X	X	X	X															801.32	481.31
Coldwater	X	X	X	X															801.31	
Elsinore	X	X		X															802.31	
Lee Lake	X	X	X	X															801.34	
Riverside - A	X	X	X	X															801.27	801.44
Riverside – B	X	X	X	X															801.27	801.44
Riverside - C	X	X	X	X															801.27	
Riverside - D	X	X	X	X															801.27	801.26
Riverside - E	X	X	X	X															801.27	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

Table 3-1 BENEFICIAL USES - Continued

GROUNDWATER MANAGEMENT ZONES	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
Riverside - F	X	X	X	X															801.27	
Temescal	X	X	X	X															801.25	
SAN JACINTO RIVER BASIN																				
Garner Valley	X	X																	802.22	
Idyllwild Area	X		X																802.22	802.21
Canyon	X	X	X	X															802.21	
Hemet - South	X	X	X	X															802.15	802.13, 802.21
Lakeview – Hemet North	X	X	X	X															802.14	802.15
Menifee	X	X		X															802.13	
Perris North	X	X	X	X															802.11	
Perris South	X	X																	802.11	802.12, 802.13
San Jacinto - Lower	X	X	X																802.21	802.11
San Jacinto - Upper	X	X	X	X															802.27	802.23

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

Table 3-1 BENEFICIAL USES - Continued

GROUNDWATER MANAGEMENT ZONES	BENEFICIAL USE																		Hydrologic Unit	
	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	EST	Primary	Secondary
LOWER SANTA ANA RIVER BASIN																				
La Habra	X	X																	845.62	
Santiago	X	X	X																801.12	801.11
Orange	X	X	X	X															801.11	801.13, 801.14 845.61, 845.63
Irvine	X	X	X	X															801.11	

X Present or Potential Beneficial Use
I Intermittent Beneficial Use
+ Excepted from MUN (see text)

CHAPTER 4

WATER QUALITY OBJECTIVES

INTRODUCTION

The Porter-Cologne Act defines water quality objectives as "…the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (§13050 (h)). Further, the Act directs (§13241) that:

"Each regional board shall establish such water quality objectives in water quality control plans as in its judgement will ensure the reasonable protection of beneficial uses as the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

(a) Past, present, and probable future beneficial uses of water.

(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

(d) Economic considerations.

(e) The need for developing housing within the region.

(f) The need to develop and use recycled water."

Two important additional factors which were also considered in setting the water quality objectives in this Plan are (1) historic and present water quality, and (2) the antidegradation policies cited in Chapter 2.

The water quality objectives in this plan supersede and replace those adopted in the 1983 Basin Plan. Perhaps the most significant difference between this and the prior Plan is the inclusion of new objectives for un-ionized ammonia and site-specific objectives for the middle Santa Ana River system for copper, cadmium, and lead.

Some of these water quality objectives refer to "controllable sources" or "controllable water quality factors." Controllable sources include both point and nonpoint source discharges, such as conventional discharges from pipes, as well as discharges from land areas or other diffuse sources. Controllable water quality factors are those characteristics of the discharge and/or the receiving water which can be controlled by

treatment or management methods. Examples of other activities which may not involve waste discharges, but which also constitute controllable water quality factors, include the percolation of storm water, transport/delivery of water via natural stream channels, and stream diversions.

The water quality objectives in this Plan are specified according to waterbody type: ocean waters; enclosed bays and estuaries; inland surface waters; and groundwaters.

The narrative water quality objectives below are arranged alphabetically. They vary in applicability and scope, reflecting the variety of beneficial uses of water that have been identified (Chapter 3). Where numerical objectives are specified, they generally represent the levels that will protect beneficial uses. However, in establishing waste discharge requirements for specific discharges, the Regional Board may find that more stringent levels are necessary to protect beneficial uses. In other cases, an objective may prohibit the discharge of specific substances, may tolerate natural or "background" levels of certain substances or characteristics but no increases over those values, or may express a limit in terms of not impacting other beneficial uses. An adverse effect or impact on a beneficial use occurs where there is an actual or threatened loss or impairment of that beneficial use.

OCEAN WATERS (Amended by Resolution No. 97-20, April 18, 1997)

Water quality objectives specified in the "Water Quality Control Plan for Ocean Waters of California" (Ocean Plan) and the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (Thermal Plan) are incorporated into this Basin Plan by reference. The provisions of the Ocean Plan and Thermal Plan apply to the ocean waters within this Region. **(End of Resolution No. 97-20)**

ENCLOSED BAYS AND ESTUARIES

"Enclosed bays" means indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. "Estuaries" means waters, including coastal lagoons, located at the mouths of steams which serve as areas of mixing for fresh and ocean waters. Enclosed bays and estuaries do not include ocean waters or inland surface waters (see definition in the Inland Surface Waters section).

The objectives which are included below apply to all enclosed bays and estuaries within the region. In addition to these parameter-specific objectives, the following narrative objective shall apply:

Enclosed bay and estuarine communities and populations, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of the discharge of waste. Degradation is damage to an aquatic community or population with the result that a balanced community no longer exists. A balance community is one that is (1) diverse, (2) has the ability to sustain itself through cyclic seasonal changes, (3) includes necessary food chain species, and (4) is not dominated by pollution-tolerant

species, unless that domination is caused by physical habitat limitations. A balanced community also (5) may include historically introduced non-native species, but (6) does not include species present because best available technology has not been implemented, or (7) because site-specific objectives have been adopted, or (8) because of thermal discharges.

Algae

Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally, but they are often the result of excess nutrients (***i.e.,*** nitrogen, phosphorus) from waste discharges or nonpoint sources. These blooms can lead to problems with tastes, odors, color, and increased turbidity and can depress the dissolved oxygen content of the water, leading to fish kills. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance.

Waste discharges shall not contribute to excessive algal growth in receiving waters.

Bacteria, Coliform

Fecal bacteria are part of the intestinal flora of warm-blooded animals. Their presence in bay and estuarine waters is an indicator of pollution. Total coliform is measured in terms of the number of coliform organisms per unit volume. Total coliform numbers can include non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacterial. Water quality objectives for numbers of total and fecal coliform vary with the uses of the water, as shown below.

Bays and Estuaries

REC-1 ***Fecal coliform: log mean less than 200 organisms/100 mL based on five or more samples/30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.***

SHEL ***Fecal coliform: median concentration not more than 14 MPN (most probable number)/100 ml and not more than 10% of samples exceed 43 mpn / 100 mL***

Chlorine, Residual

Wastewater disinfection with chlorine usually produces a chlorine residual. Chlorine and its reaction products are toxic to aquatic life.

To protect aquatic life, the chlorine residual in wastewater discharged to enclosed bays and estuaries shall not exceed 0.1 mg/L.

Color

Color in water may arise naturally, such as from minerals, plant matter or algae, or may be caused by industrial pollutants. Color is primarily an aesthetic consideration.

Waste discharges shall not result in coloration of the receiving waters which causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other bay and estuarine water resources used for human consumption shall not be impaired.

Floatables
Floatables are an aesthetic nuisance as well as a substrate for algae and insect vectors.

Waste discharges shall not contain floating materials, including solids, liquids, foam or scum, which cause a nuisance or adversely affect beneficial uses.

Oil and Grease
Oil and grease can be present in water as a result of the discharge of treated wastes and the accidental or intentional dumping of wastes into sinks and storm drains. Oils and related materials have a high surface tension and are not soluble in water, therefore forming a film on the water's surface. This film can result in nuisance conditions because of odors and visual impacts. Oil and grease can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation.

Waste discharges shall not result in deposition of oil, grease, wax or other materials in concentrations which result in a visible film or in coating objects in the water, or which cause a nuisance or adversely affect beneficial uses.

Oxygen, Dissolved
Adequate dissolved oxygen (D.O.) is vital for aquatic life. Depression of D.O. levels can lead to fish kills and odors resulting from anaerobic decomposition. Dissolved oxygen content in water is a function of water temperature and salinity.

The dissolved oxygen content of enclosed bays and estuaries shall not be depressed to levels that adversely affect beneficial uses as a result of controllable water quality factors.

pH
pH is a measure of the hydrogen ion concentration of water. pH values generally range from 0 (most acidic) to 14 (most alkaline). Many pollutants can alter the pH, raising or lowering it excessively. These extremes in pH can have adverse effects on aquatic biota and can corrode pipes and concrete. Even small changes in pH can harm aquatic biota.

The pH of bay or estuary waters shall not be raised above 8.6 or depressed below 7.0 as a result of controllable water quality factors; ambient pH levels shall not be changed more than 0.2 units.

Radioactivity

Radioactive materials shall not be present in the bay or estuarine waters of the region in concentrations which are deleterious to human, plant or animal life.

Solids, Suspended and Settleable

Settleable solids are deleterious to benthic organisms and may cause anaerobic conditions to form. Suspended solids can clog fish gills and interfere with respiration in aquatic fauna. They also screen out light, hindering photosynthesis and normal aquatic plant growth and development.

Enclosed bays and estuaries shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

Sulfides

Sulfides are generated by many industries and from the anaerobic decomposition of organic matter. In water, sulfides can react to form hydrogen sulfide (H_2S), commonly known for its "rotten egg" odor. Sulfides in ionic form are also toxic to fish.

The dissolved sulfide content of enclosed bays and estuaries shall not be increased as a result of controllable water quality factors.

Surfactants (surface-active agents)

This group of materials includes detergents, wetting agents, and emulsifiers.

Waste discharges shall not contain concentrations of surfactants which result in foam in the course of flow or the use of the receiving water, or which adversely affect aquatic life.

Taste and Odor

Undesirable tastes and odors in water may be a nuisance and may indicate the presence of a pollutant(s).

The enclosed bays and estuaries of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other enclosed bay and estuarine water resources used for human consumption shall not be impaired.

Temperature

Waste discharges can cause temperature changes in the receiving waters which adversely affect the aquatic biota. Discharges most likely to cause these temperature effects are cooling tower and heat exchanger blowdown.

All bay and estuary waters shall meet the objective specified in the Thermal Plan.

Toxic Substances

Toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to level which are harmful to human health.

The concentrations of toxic substances in the water column, sediments or biota shall not adversely affect beneficial uses.

Turbidity

Turbidity is a measure of light scattered due to particulates in water.

Increases in turbidity which result from controllable water quality factors shall comply with the following:

Natural Turbidity	***Maximum Increase***
0-50 NTU	***20%***
50-100 NTU	***10 NTU***
Greater than 100 NTU	***10%***

All enclosed bay and estuaries of the region shall be free of changes in turbidity which adversely affect beneficial uses.

INLAND SURFACE WATERS

Inland surface waters include streams, rivers, lakes, and wetlands in the Region. Ocean waters and enclosed bays and estuaries are not considered inland surface waters.

The narrative objectives which are included below apply to all inland surface waters within the region, including lakes, streams, and wetlands. In addition, specific numerical objectives are listed in Table 4-1. Where more than one objective is applicable, the stricter shall apply. In addition to these objectives, the following shall apply:

Inland surface water communities and populations, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of the discharge of waste. Degradation is damage to an aquatic community or population with the result that balanced community no longer exists. A balanced community is one that is (1) diverse, (2) has the ability to sustain itself through cyclic seasonal changes, (3) includes necessary food chain species, and (4) is not dominated by pollution-tolerant species, unless that domination is caused by physical habitat limitations. A balanced community also (5) may include historically introduced non-native species, but (6) does not include species present because best available technology has not been

implemented, or (7) because site-specific objectives have been adopted, or (8) because of thermal discharges.

Algae

Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally, but they are often the result of excess nutrients (***i.e.,*** nitrogen, phosphorous) from waste discharges or nonpoint sources. These blooms can lead to problems with tastes, odors, color, and increased turbidity and can depress the dissolved oxygen content of the water, leading to fish kills. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance.

Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters.

Ammonia, Un-ionized

Un-ionized ammonia (NH_3, or UIA) is toxic to fish and other aquatic organisms. In water, UIA exists in equilibrium with ammonium (NH_4+) and hydroxide (OH) ions. The proportions of each change as the temperature, pH, and salinity of the water change.

The 1983 Basin Plan specified an UIA objective of 0.8 mg/L for waterbodies designated **WARM**. The SWRCB directed the Regional Board to review the 0.8 mg/L objective because of concerns that it is not stringent enough to protect aquatic wildlife. The USEPA concurred that this review was necessary.

The Regional Board contracted with California State University, Fullerton to conduct a study of un-ionized ammonia in the Santa Ana River and to develop recommendations regarding the UIA objective. This study, which was conducted in 1985-87, was complemented by additional Regional Board staff analysis. The additional staff analysis focused on adjusting EPA's national criteria for **WARM** waters (published in 1984 and amended in 1992), using the recalculation procedure. With this procedure, cold and warmwater species not found in the Santa Ana Region's **WARM** designated waters were deleted from the database used to derive the national criteria, and new criteria were calculated.

Based on these analyses, this Plan specifies UIA objectives for **WARM** and **COLD** designated waterbodies in the Region. **Note:** site-specific objectives have been developed for the Santa Ana River and certain tributaries (see next page).

Acute (1-hour) UIA-N Objectives

For waterbodies designed **COLD**:

Objective = 0.822 [0.52/FT/FPH/2], where

$FT = 10^{(0.03(20-T))}$ $0 \leq T \leq 20°C$

$FT = 1$ $20 \leq T \leq 30°C$

$$FPH = \frac{1+10^{(7.4-pH)}}{1.25} \quad 6.5 \le pH \le 8$$

$$FPH = 1 \quad 8 \le pH \le 9$$

For waterbodies designated **WARM**:
Objective = 0.822[0.87/FT/FPH/2], where

$$FT = 10^{(0.03(20-T))} \quad 0 \le T \le 25°C$$

$$FT = 0.7079 \quad 25 \le T \le 30°C$$

$$FPH = \frac{1+10^{(7.4-pH)}}{1.25} \quad 6.5 \le pH \le 8$$

$$FPH = 1 \quad 8 \le pH \le 9$$

Chronic (4-day) UIA-N Objectives
For waterbodies designated **COLD**:
Objective = 0.822[0.52/FT/FPH/RATIO], where

$$FT = 10^{(0.03(20-T))} \quad 0 \le T \le 15°C$$

$$FT = 1.4125 \quad 15 \le T \le 30°C$$

$$FPH = \frac{1+10^{(7.4-pH)}}{1.25} \quad 6.5 \le pH \le 8$$

$$FPH = 1 \quad 8 \le pH \le 9$$

$$RATIO = \frac{24[10^{(7.7-pH)}]}{1+10^{(7.4-pH)}} \quad 6.5 \le pH \le 7.7$$

$$RATIO = 13.5 \quad 7.7 \le pH \le 9$$

For waterbodies designed **WARM**:
Objective = 0.822[0.87/FT/FPH/RATIO], where

$$FT = 10^{(0.03(20-T))} \quad 0 \le T \le 20°C$$

$$FT = 1 \quad 20 \le T \le 30°C$$

$$FPH = \frac{1+10^{(7.4-pH)}}{1.25} \quad 6.5 \le pH \le 8$$

$$FPH = 1 \quad 8 \le pH \le 9$$

$$RATIO = \frac{24[10^{(7.7-pH)}]}{1+10^{(7.4-pH)}} \quad 6.5 \le pH \le 7.7$$

$$RATIO = 13.5 \quad 7.7 \le pH \le 9$$

Calculated numerical UIA-N objectives as well as corresponding total ammonia nitrogen concentration for various pH and temperature conditions are shown in Tables 4-2 and 4-3. Table 4-4 lists the above equations in a form that can be entered into a computer or calculator program.

Site-specific Un-ionized Ammonia Objective for the Santa Ana River System

In addition to the un-ionized ammonia (UIA) objectives specified above, this Plan includes a chronic (4-day) site-specific UIA objective for the middle Santa Ana River, Chino Creek, Mill Creek (Prado Area), Temescal Creek, and San Timoteo Creek. This site-specific objective is based on carefully controlled chronic toxicity tests on Santa Ana River water conducted as part of the Santa Ana River Use-Attainability Analysis Study. The Santa Ana River water was spiked with UIA concentrations ranging from 0.0 (control) to 1.0 mg/L. The No Observed Effect Level (NOEL) was found to be at a UIA concentration of 0.24 mg/L (or 0.19 mg/L as UIA-nitrogen). Using a 50% safety factor, the UIA objective developed is 0.12 mg/L (or 0.098 mg/L UIA-nitrogen).

To prevent chronic toxicity to aquatic life in the Santa Ana River, Reaches 2, 3, and 4, Chino Creek, Mill Creek (Prado Area), Temescal Creek and San Timoteo Creek, discharges to these waterbodies shall not cause the concentration of un-ionized ammonia (as nitrogen) to exceed 0.098 mg/L) (NH_3-N) as a 4-day average.

Bacteria, Coliform

Fecal bacteria are part of the intestinal flora of warm-blooded animals. Their presence in surface waters is an indicator of pollution. Total coliform is measured in terms of the number of coliform organisms per unit volume. Total coliform numbers can include non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacteria. Water quality objectives for numbers of total and fecal coliform vary with the uses of the water, as shown below.

Lakes and Streams

MUN ***Total coliform: less than 100 organisms/100 mL***

REC-1 ***Fecal coliform: log mean less than 200 organisms/100 mL based on five or more samples/30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period***

REC-2 ***Fecal coliform: average less than 2000 organisms/100 mL and not more than 10% of samples exceed 4000 organisms/100 mL for any 30-day period***

Boron
Boron is not considered a problem in drinking water supplies until concentrations of 20-30 mg/L are reached. In irrigation, boron is an essential element. However, boron concentrations in excess of 0.75 mg/L may be deleterious to certain crops, particularly citrus. The maximum safe concentration of even the most tolerant plants is about 4.0mg/L of boron.

Boron concentrations shall not exceed 0.75 mg/L in inland surface waters of the region as a result of controllable water quality factors.

Chemical Oxygen Demand (COD)
COD is a measure of the total amount of oxidizable material present in a sample, including stable organic materials which are not measured by the BOD test.

Waste discharges shall not result in increases in COD levels in inland surface waters which exceed the values shown in Table 4-1 or which adversely affect beneficial uses.

Chloride
Excess chloride concentrations lead primarily to economic damage rather than public health hazards. Chlorides are considered to be among the most troublesome anions in water used for industrial or irrigation purposes since they significantly affect the corrosion rate of steel and aluminum and can be toxic to plants. A safe value for irrigation is considered to be less than 175 mg/L of chloride. Excess chlorides affect the taste of potable water, so drinking water standards are generally based on potability rather than on health. The secondary drinking water standard for chloride is 500 mg/L.

The chloride objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Chlorine, Residual
Wastewater disinfection with chlorine usually produces a chlorine residual. Chlorine and its reaction products are toxic to aquatic life.

To protect aquatic life, the chlorine residual in wastewater discharged to inland surface waters shall not exceed 0.1 mg/L.

Color
Color in water may arise naturally, such as from minerals, plant matter, or algae, or may be caused by industrial pollutants. Color is primarily an aesthetic consideration, although it can discolor clothes and food. The secondary drinking water standard for color is 15 color units.

Waste discharges shall not result in coloration of the receiving waters which causes a nuisance or adversely affect beneficial uses. The natural color of fish, shellfish or other inland surface water resources used for human consumption shall not be impaired.

Dissolved Solids, Total (Total Filtrable Residue)
The department of Health Services recommends that the concentration of total dissolved solids (TDS) in drinking water be limited to 1000 mg/L (secondary drinking water standard) due to taste considerations. For most irrigation uses, water should have a TDS concentration under 700mg/L. Quality-related consumer cost analyses have indicated that a benefit to consumers exist if water is supplied at or below 500mg/L TDS.

The dissolved mineral content of the waters of the region, as measured by the total dissolved solids test ("Standard Methods for the Examination of Water and Wastewater, 16th Ed.," 1985: 209B (180˚C), p. 95), shall not exceed the specific objectives listed in Table 4-1 as a result of controllable water quality factors.

Filtrable Residue, Total
See Dissolved Solids, Total

Floatables
Floatables are an aesthetic nuisance as well as a substrate for algae and insect vectors.

Waste discharges shall not contain floating materials, including solids, liquids, foam or scum, which cause a nuisance or adversely affect beneficial uses.

Fluoride
Fluoride in water supply used for industrial or irrigation purposes has certain detrimental effects. Fluoride in optimum concentrations in water supply (concentrations dependent upon the mean annual air temperature) is considered beneficial for preventing dental caries, but concentrations above approximately 1 mg/L, or its equivalent at a given temperature, are considered likely to increase the risk of occurrence of dental fluorosis.

Fluoride concentrations shall not exceed values specified in the table below in inland surface waters designated* MUN *as a result of controllable water quality factors.

Annual Average of Maximum Optimum Fluoride

Daily Air Temperature (˚C)	Concentration (mg/L)
12.0 and below	1.2
12.1 to 14.6	1.1
14.7 to 17.6	1.0
17.7 to 21.4	0.9
21.5 to 26.2	0.8
26.3 to 32.5	0.7

Hardness (as $CaCO_3$)
The major detrimental effect of hardness is economic. Any concentration (reported as mg/L $CaCO_3$) greater than 100mg/L results in the increased use of soap, scale buildup in utensils, in domestic uses, and in plumbing. Hardness in industrial cooling waters is generally objectionable above 50mg/L.

The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors. If no hardness objective is listed in Table 4-1, the hardness of receiving waters used for municipal supply (MUN) shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.

Inorganic Nitrogen, Total
see Nitrogen, Total Inorganic

Metals
Metals can be toxic to human and animal life.

In 1990, the Environmental Protection Agency (EPA) placed the Santa Ana River, reaches 2, 3, and 4, and Chino Creek on the §304(1) list of "Waters Not Meeting Applicable Water Quality Standards" based on its review of data on certain metals in POTW discharges to the River.

The Santa Ana River dischargers and the Regional Board disagreed with and objected to EPA's §304(1) designation. To demonstrate whether or not the §304(1) designation is correct and what effects, if any, heavy metal levels may have on aquatic life in the Region, the Santa Ana River Dischargers Association and the Santa Ana Watershed Project Authority agreed to conduct a Use-Attainability Analysis (UAA).

The purpose of a Use-Attainability Analysis is to evaluate the "physical, biological, chemical, and hydrological conditions of a river to determine what specific beneficial uses the waterbody can support." If local conditions preclude full attainment of an aquatic life beneficial use for reasons unrelated to water quality, federal and state authorities may allow variances from the generic water quality criteria.

The UAA began in February 1991 and concluded in March 1992. It provided detailed information on chemical, biological, and hydrologic conditions in the middle Santa Ana River aquatic system. Conclusions and recommendations were presented to the Board in June 1992. The information presented is reflected in the Santa Ana River discussion in Chapter 1 and in the new **LWRM** Beneficial Use designation (Chapter 3). Data provided by the UAA was also used to support the adoption of site-specific objectives for three metals, cadmium (Cd), copper (Cu), and lead (Pb) for the Santa Ana River (Reaches 2, 3, and 4) and the perennial portions of some tributaries (including Chino Creek, Cucamonga/Mill Creek, Temescal Creek, and creeks in the Riverside Narrows area).

In adopting these SSOs the Regional Board found (RWQCB Resolution No. 94-1) that:

a. The Site-Specific Water Quality Objectives (SSOs) will protect the beneficial uses of the Santa Ana River.

b. The SSOs are conservative.

c. The SSOs, which represent higher quality than presently exists, will not result in degradation of water quality.

d. Existing levels of cadmium, copper, and lead in the Santa Ana River do not contribute to toxicity in the Santa Ana River.

The toxicity of these metals varies with water hardness. No fixed hardness value is assumed; objectives are calculated using the hardness of the collected sample.

The following equations represent the SSOs which apply to these waterbodies. These SSOs are expressed as the dissolved form of the metals.

SSO ***for cadmium***:

$$\text{Cd SSO} = 0.85[e^{(0.7852*\ln(TH)-3.490)}]$$

SSO for Copper

$$\text{Cu SSO} = 0.85[e^{(0.8545*\ln(TH)-1.465)}]$$

SSO for lead

$$\text{Pb SSO} = 0.25\ [e^{(1.237*\ln(TH)-3.958)}]$$

where TH is the total hardness (as $CaCO_3$) in mg/L.

The SSOs for cadmium and copper are simply the hardness-dependent formulas for calculating the objective (national criteria), corrected by the dissolved-to-total (metal) ratio. The SSO for lead is the recalculated* hardness-dependant formula, corrected by the dissolved-to-total ratio.

*****Recalculation for lead was carried out by EPA-Region IX, using the lowest genus mean acute value (GMAV) as the final acute value (FAV) and an acute-to chronic ratio (ACR) of 51.29, resulting in a final chronic value (FCV) of 2.78 and the SSO formula already shown.

The Table below shows the site-specific objectives for cadmium, copper, and lead that would apply to a water sample with 200 mg/L total hardness (as $CaCO_3$).

Metal	Calculated WQO	Recalculated Value	EPA Correction Factor	SSO
Cd	2.0	NA	0.85	1.7
Cu	21.4	NA	0.85	18.2
Pb	7.7	16.2	0.25	4.1

Toxicity testing performed as part of the Santa Ana River Use-Attainability Analysis (UAA) has demonstrated that the levels of dissolved metal shown below are safe and non-toxic in Santa Ana River water.

Cadmium	4 µg/L
Copper	37 µg/L
Lead	28 µg/L

There is also evidence that levels as much as 100% higher than those shown above do not result in chronic toxicity.

Methylene Blue-Activated Substances (MBAS)
The MBAS test is sensitive to the presence of detergents (see surfactants). Positive results may indicate the presence of wastewater. The secondary drinking water standard for MBAS is 0.05 mg/L.

MBAS concentrations shall not exceed 0.05mg/L I inland surface waters designated MUN as a result of controllable water quality factors.

Nitrate
High nitrate concentrations in domestic water supplies can be toxic to human life. Infants are particularly susceptible and may develop methemoglobinemia (blue baby syndrome). The primary drinking water standard for nitrate (as NO_3) is 45 mg/L or 10 mg/L (as N) in inland surface waters designated MUN as a result of controllable water quality factors.

Nitrate-nitrogen concentrations shall not exceed 45 mg/L (as NO_3) or 10 mg/L (as N) in inland surface waters designated MUN as a result of controllable water quality factors.

Nitrogen, Total Inorganic
The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Oil and Grease

Oil and grease can be present in water as a result of the discharge of treated wastes and the accidental or intentional dumping of wastes into sinks and storm drains. Oils and related materials have a high surface tension and are not soluble in water, therefore forming a film on the water's surface. This film can result in nuisance conditions because of odors and visual impacts. Oil and grease can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation.

Waste discharges shall not result in deposition of oil, grease, wax, or other material in concentrations which result in a visible film or in coating objects in the water, or which cause a nuisance or adversely affect beneficial uses.

Oxygen, Dissolved

Adequate dissolved oxygen (D.O.) is vital for aquatic life. Depression of D.O. levels can lead to fish kills and odors resulting from anaerobic decomposition. Dissolved oxygen content in water is a function of water temperature and salinity.

The dissolved oxygen content of surface waters shall not be depressed below 5mg/L for waters designated WARM, or 6mg/L for waters designated COLD, as a result of controllable water quality factors. In addition, waste discharges shall not cause the median dissolved oxygen concentration to fall below 85% of saturation or the 95th percentile concentration or fall below 75% of saturation within a 30-day period.

pH

pH is a measure of the hydrogen ion concentration of water. pH values generally range from 0 (most acidic) to 14 (most alkaline). Many pollutants can alter the pH, raising or lowering it excessively. These extremes in pH can have adverse effects on aquatic biota and can corrode pipes and concrete. Even small changes in pH can harm aquatic biota.

The pH of inland surface waters shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors.

Radioactivity

Radioactivity materials shall not be present in the waters of the region in concentrations which are deleterious to human, plant or animal life. Waters designated MUN shall meet the limits specified in the California Code of Regulations, Title 22, and listed here:

Combined Radium-226 and Radium-228	***5***	***pCi/L***
Gross Alpha particle activity	***15***	***pCi/L***
Tritium	***20,000***	***pCi/L***
Strontium-90	***8***	***pCi/L***
Gross Beta particle activity	***50***	***pCi/L***
Uranium	***20***	***pCi/L***

Sodium

The presence of sodium in drinking water may be harmful to persons suffering from cardiac, renal, and circulatory diseases. It can contribute to taste effects, with the taste threshold depending on the specific sodium salt. Excess concentrations of sodium in irrigation water reduce soil permeability to water and air. The deterioration of soil quality because of the presence of sodium in irrigation water is cumulative and is accelerated by poor drainage.

The sodium objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Solids, Suspended and Settleable

Settleable solids are deleterious to benthic organisms and may cause anaerobic conditions to form. Suspended solids can clog fish gill and interfere with respiration in aquatic fauna. They also screen out light, hindering photosynthesis and normal aquatic plant growth and development.

Inland surface waters shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

Sulfate

Excessive sulfate, particularly magnesium sulfate ($MgSO_4$) in potable waters can lead to laxative effects, but this effect is temporary. There is some taste effect from magnesium sulfate in the range of 400-600 mg/L as $MgSO_4$. The secondary drinking water standard for sulfate is 500 mg/L. Sulfate concentrations in waters native to this region are normally low, less than 40 mg/L, but imported Colorado River water contains approximately 300 mg/L of sulfate.

The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Sulfides

Sulfides are generated by many industries and from the anaerobic decomposition of organic matter. In water, sulfides can react to form hydrogen sulfide (H_2S), commonly known for its “rotten egg” odor. Sulfides in ionic form are also toxic to fish.

The dissolved sulfide content of inland surface waters shall not be increased as a result of controllable water quality factors.

Surfactants (surface-active agents)
This group of materials includes detergents, wetting agents, and emulsifiers. See also Methylene Blue-Activated Substances (MBAS).

Waste discharges shall not contain concentrations of surfactants which result in foam in the course of flow or use of the receiving water, or which adversely affect aquatic life.

Taste and Odor
Undesirable tastes and odors in water may be a nuisance and may indicate the presence of a pollutant(s). The secondary drinking water standard for odor (threshold) is about 3 odor units.

The inland surface waters of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other regional inland surface water resources used for human consumption shall not be impaired.

Temperature
Waste discharges can cause temperature changes in the receiving waters which adversely affect the aquatic biota. Discharges most likely to cause these temperature effects are cooling tower and heat exchanger blowdown.

The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses. The temperature of waters designated COLD shall not be increased by more than 5˚F as a result of controllable water quality factors. The temperature of waters designated WARM shall not be raised above 90˚F June through October or above 78˚F during the rest of the year as a result of controllable water quality factors. Lake temperatures shall not be raised more than 4˚F above established normal values as a result of controllable water quality factors.

Total Dissolved Solids
See Dissolved Solids, Total

Total Filtrable Residue
See Dissolved Solids, Total

Total Inorganic Nitrogen
See Nitrogen, Total Inorganic

Toxic Substances
Toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health.

The concentrations of contaminants in waters which are existing or potential sources of drinking water shall not occur at levels that are harmful to human health.

The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses.

Turbidity
Turbidity is a measure of light scattered due to particulates in water. The secondary drinking water standard for turbidity is 5 NTU (nephelometric turbidity units).

Increases in turbidity which result from controllable water quality factors shall comply with the following:

Natural Turbidity	***Maximum Increase***
0-5 NTU	20%
50-100 NTU	10 NTU
Greater than 100 NTU	10%

All inland surface waters of the region shall be free of changes in turbidity which adversely affect beneficial uses.

GROUNDWATERS

The narrative objectives that are included below apply to all groundwaters, as noted. In addition, specific numerical objectives are listed in Table 4-1. With the exception of the "maximum benefit" objective identified in this Table (see further discussion below and in Chapter 5), where more than one objective is applicable, the stricter shall apply.

Arsenic
Arsenic concentrations shall not exceed 0.05 mg/L in groundwater designated MUN as a result of controllable water quality factors.

Bacteria, Coliform
Fecal bacteria are part of the intestinal flora of warm-blooded animals. The presence in groundwater is an indicator of pollution. Total coliform is measured in terms of the number of coliform organisms per unit volume. Total coliform numbers can include non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacteria. Water quality objectives for numbers of total fecal coliform vary with the uses of the water, as shown below.

Total coliform numbers shall not exceed 2.2 organism/100 mL median over any seven-day period in groundwaters designated MUN as a result of controllable water quality factors.

Barium

Barium concentrations shall not exceed 1.0mg/L in groundwaters designated MUN as a result of controllable water quality factors.

Boron

Boron is not considered a problem in drinking water supplies until concentrations of 20-30 mg/L are reached. In irrigation, boron is an essential element. However, boron concentrations in excess of 0.75 mg/L may be deleterious to certain crops, particularly citrus. The maximum safe concentration of even the most tolerant plants is about 4.0 mg/L of boron.

Boron concentrations shall not exceed 0.75 mg/L in groundwaters of the region as a result of controllable water quality factors.

Chloride

Excess chloride concentrations lead primarily to economic damage rather than public health hazards. Chlorides are considered to be among the most troublesome anion in water used for industrial or irrigation purposes since they significantly affect the corrosion rate of steel and aluminum and can be toxic to plants. A safe value for irrigation is considered to be less than 175 mg/L of chloride. Excess chlorides affect the taste of potable water, so drinking water standards are generally based on potability rather than on health. The secondary maximum contaminant level range - upper for chloride is 500 mg/L (CCR, Division 4, Chapter 15, Article 16, § 64449).

Chloride concentrations shall not exceed 500 mg/L in groundwaters of the region designated MUN as a result of controllable water quality factors.

Color

Color in water may arise naturally, such as from minerals, plant matter or algae, or may be caused by industrial pollutants. Color is primarily an aesthetic consideration, although it can discolor clothes and food. The secondary drinking water standard for color is 15 color units.

Waste discharges shall not result in coloration of the receiving waters which causes a nuisance or adversely affects beneficial uses.

Cyanide

Cyanide concentrations shall not exceed 0.2mg/L in groundwaters designated MUN as a result of controllable water quality factors.

Dissolved Solids, Total (Total Filtrable Residue)

The Department of Health Services recommends that the concentration of total dissolved solids (TDS) in drinking water be limited to 500 mg/L (secondary maximum contaminant level) (CCR, Division 4, Chapter 15, Article 16, § 64449), due to taste considerations. For most irrigation uses, water should have a TDS concentration under 700 mg/L. Quality-related consumer cost analyses have indicated that a benefit to consumers exists if water is supplied at or below 500 mg/L TDS[2].

The dissolved mineral content of the waters of the region, as measured by the total dissolved solids test ("Standard Methods for the Examination of Water and Wastewater, 20th Ed.," 1998: 2540C (180˚C), p.2-56), shall not exceed the specific objectives listed in Table 4-1 as a result of controllable water quality factors. (See also discussion of management zone TDS and nitrate nitrogen water quality objectives).

Filtrable Residue, Total
See Dissolved Solids, Total

Fluoride
Fluoride in water supply used for industrial or irrigation purposes has certain detrimental effects. Fluoride in optimum concentrations in water supply (concentration dependent upon the mean annual air temperature) is considered beneficial for preventing dental caries, but concentrations above approximately 1 mg/L, or its equivalent at a given temperature, are considered likely to increase the risk of occurrence of dental fluorosis.

Fluoride concentrations shall not exceed 1.0 mg/L in groundwaters designated MUN as a result of controllable water quality factors.

Hardness (as $CaCO_3$)
The major detrimental effect of hardness is economic. Any concentration (reported as mg/L $CaCO_3$) greater than 100mg/L results in the increased use of soap, scale buildup in utensils in domestic uses, and in plumbing. Hardness in industrial cooling waters is generally objectionable above 50 mg/L.

The hardness of receiving waters used for municipal supply (MUN) shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.

Metals
Metals can be toxic to human and animal life.

Metals concentrations shall not exceed the values listed below in groundwaters designated MUN as a result of controllable water quality factors.

[2] These TDS values are noted for information purposes only. For some management zones, the historic ambient quality, on which the TDS objectives are largely based (see also discussion of maximum benefit objectives for specific management zones), exceeds these recommended levels.

Metal	***Concentration (mg/L)***
Cadmium	0.01
Chromium	0.05
Cobalt	0.2
Copper	1.0
Iron	0.3
Lead	0.05
Manganese	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05

Methylene Blue-Activated Substances (MBAS)
The MBAS test is sensitive to the presence of detergents (see surfactants in inland surface waters discussion). Positive results may indicate the presence of wastewater. The secondary drinking water standard for MBAS is 0.05 mg/L.

MBAS concentrations shall not exceed 0.05 mg/L in groundwaters designated MUN as a result of controllable water quality factors.

Nitrate
High nitrate concentrations in domestic water supplies can be toxic to human life. Infants are particularly susceptible and may develop methemoglobinemia (blue baby syndrome). The primary drinking water standard for nitrate (as NO_3) is 45 mg/L or 10 mg/L (as N).

Nitrate-nitrogen concentrations listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors. (See also discussion of management zone TDS and nitrate nitrogen water quality objectives below).

Oil and Grease
Oil and grease can be present in water as a result of the discharge of treated wastes and the accidental or intentional dumping of wastes into sinks and storm drains. Oils and related materials have a high surface tension and are not soluble in water, therefore forming a film on the water's surface. This film can result in nuisance conditions because of odors and visual impacts.

Waste discharges shall not result in deposition of oil, grease, wax or other materials in concentrations which cause a nuisance or adversely affect beneficial uses.

pH
pH is a measure of the hydrogen ion concentration of water. pH values generally range from 0 (most acidic) to 14 (most alkaline). Many pollutants can alter the pH,

raising or lowering it excessively. These extremes in pH can corrode pipes and concrete.

The pH of groundwater shall not be raised above 9 or depressed below 6 as a result of controllable water quality factors.

Radioactivity

Radioactive materials shall not be present in the waters of the region in concentrations which are deleterious to human, plant or animal life. Groundwaters designated ***MUN*** *shall meet the limits specified in the California Code of Regulations, Title 22, and listed here:*

Combined Radium-226 and Radium-228	*5*	*pCi/L*
Gross Alpha particle activity	*15*	*pCi/L*
Tritium	*20,000*	*pCi/L*
Strontium-90	*8*	*pCi/L*
Gross Beta particle activity	*50*	*pCi/L*
Uranium	*20*	*pCi/L*

Sodium

The presence of sodium in drinking water may be harmful to persons suffering from cardiac, renal and circulatory diseases. It can contribute to taste effects, with the taste threshold depending on the specific sodium salt (US Geological Survey, Resources Agency of California – State Water Resources Control Board). Excess concentrations of sodium in irrigation water reduce soil permeability to water and air. The deterioration of soil quality because of the presence of sodium in irrigation water is cumulative and is accelerated by poor drainage (California State Water Resources Control Board).

The California Department of Health Services and the U.S. Environmental Protection Agency have not provided a limit on the concentration of sodium in drinking water. Sodium concentrations shall not exceed 180 mg/L in groundwaters designated MUN as a result of controllable water quality factors.

Groundwaters designated AGR shall not exceed a sodium absorption ration (SAR[3]) of 9 as a result of controllable water quality factors.

[3] Sodium absorption ratio (SAR)= $\dfrac{Na}{\left[\frac{1}{2}(Ca + Mg)\right]^{1/2}}$

where Sodium (Na), Calcium (Ca) and Magnesium (Mg) are concentrations in milliequivalents per liter

Sulfate

Excessive sulfate, particularly magnesium sulfate ($MgSO_4$) in potable waters can lead to laxative effects, but this effect is temporary. There is some taste effect from magnesium sulfate in the range of 400-600mg/L as MgSO4. The secondary drinking water standard for sulfate is 500mg/L (CCR, Division 4, Chapter 15, Article 16, §64449). Sulfate concentrations in waters native to this region are normally low, less than 40mg/L, but imported Colorado River water contains approximately 300mg/L of sulfate.

Sulfate concentrations shall not exceed 500 mg/L in groundwaters of the region designated MUN as a result of controllable water quality factors.

Taste and Odor

Undesirable tastes and odors in water may be a nuisance and may indicate the presence of a pollutant(s). The secondary drinking water standard for odor (threshold) is 3 odor units.

The groundwaters of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses.

Total Dissolved Solids

See Dissolved Solids, Total

Total Filtrable Residue

See Dissolved Solids, Total

Total Inorganic Nitrogen

See Nitrogen, Total Inorganic

Toxic Substances

All waters of the region shall be maintained free of substances in concentrations which are toxic, or that produce detrimental physiological responses in human, plant, animal or aquatic life.

Management Zone TDS and Nitrate-nitrogen Water Quality Objectives (Amended by Resolution No. R8-2004-0001, January 22, 2004)

The TDS and nitrate-nitrogen objectives specified in the 1975 and 1984 Basin Plans, and initially in this 1995 Basin Plan, were based on an evaluation of groundwater samples from the five year period 1968 through 1972. This period represented ambient quality at the time of preparation of the 1975 Basin Plan. As part of the 2004 update of the TDS/Nitrogen management plan in the Basin Plan, historical ambient quality was reviewed using additional data and rigorous statistical procedures. This update also included characterization of current water quality. A comprehensive description of the methodology employed is published in the “Final

Technical Memorandum for Phase 2A of the Nitrogen-TDS Study" (Wildermuth Environmental Inc., July 2000). This effort, coupled with "maximum benefit" demonstrations by certain agencies in the watershed (see further discussion below and in Chapter 5), culminated in the adoption of the TDS and nitrate-nitrogen objectives specified in Table 4-1.

For the most part, the TDS and nitrate-nitrogen water quality objectives for each management zone are based on historical concentrations of TDS and nitrate-nitrogen from 1954 through 1973 and are referred to herein as the "antidegradation" objectives. This period brackets 1968, when the State Board adopted the state's antidegradation policy in Resolution No. 68-16, "Policy with Respect to Maintaining High Quality Waters". This Resolution establishes a benchmark for assessing and considering authorization of degradation of water quality. The 20-year period was selected in order to ensure that at least 3 data points in each management zone would be available to calculate historical ambient quality. In general, the following steps were taken to calculate the TDS and nitrate objectives:

a. Annual average TDS and nitrate-nitrogen data from 1954 – 1973 for each well in a management zone were compiled;
b. For each well, the data were statistically analyzed. The mean plus "t" (Student's t) times the standard error of the mean was calculated;
c. A rectangular grid across all management zones was overlaid. Groundwater storage within each grid was computed; and,
d. The volume-weighted TDS and nitrate-nitrogen concentration for each management zone was computed. These concentrations are the calculated historical ambient quality for each zone. [4]

These volume-weighted TDS and nitrate-nitrogen concentrations for each management zone were typically identified as the appropriate objectives. However, it is important to note that if the calculated nitrate-nitrogen concentration exceeded 10 mg/L, the nitrate-nitrogen objective was set to 10 mg/L to be consistent with the primary drinking water standard, or to current ambient quality if less than 10 mg/L.

Finally, in some cases, certain agencies proposed alternative, less stringent TDS and nitrate-nitrogen objectives for specific management zones, based on additional consideration of antidegradation requirements and the factors specified in Water Code Section 13241 (see below and Chapter 5). Table 4-1 includes both the historical ambient quality TDS and nitrate-nitrogen objectives (the "antidegradation" objectives) and the objectives based on this additional consideration (the "maximum benefit"

[4] In limited cases, data for ammonia-nitrogen and nitrite-nitrogen as well as nitrate-nitrogen were available and included in the analysis. The ammonia-nitrogen and nitrite-nitrogen values were insignificant. The objectives are thus expressed as nitrate-nitrogen, even where ammonia-nitrogen and nitrite-nitrogen data were included in the analysis.

objectives) for specific management zones. Chapter 5 specifies detailed requirements noticed Public Hearing, the Regional Board finds that “maximum benefit” is not being demonstrated, then the “antidegradation” objectives apply for regulatory purposes.

THE SANTA ANA RIVER

Setting objectives for the flowing portions of the Santa Ana River is a significant feature of this Basin Plan. The River provides water for recreation and for aquatic and wildlife habitat. River flows are a significant source of groundwater recharges in lower basin, which provides domestic supplies for more than two million people. These flows account for about 70% of the total recharge.

The dividing line between reaches 2 and 3 of the River, and between the upper and lower Santa Ana Basins, is Prado Dam, a flood control facility built and operated by the U.S. Army Corps of Engineers. The dam includes a subsurface groundwater barrier, and as a result all ground and surface waters form the upper basin are forced to pass through the dam (or over the spillway). For this reason, it is an ideal place to measure flows and monitor water quality.

The Prado Settlement, a stipulated court judgement (Orange County Water District vs. City of Chino, ***et al***), which requires that a certain minimum amount of water be released each year from the upper basin, is overseen by the Santa Ana River Watermaster. The U.S. Geologic Survey (USGS) operates a permanent continuous monitoring station immediately below Prado Dam, and the data collected there are utilized by the Watermaster. Orange County Water District (OCWD) samples the river monthly at the USGS gage and determines the water quality. Compliance with the objective for reaches 2 and 3 is monitored by the Regional Board, using the data and information available from the USGS gage and these sources, plus the data from its own specific sampling programs. (see Chapter 6).

The quality of the Santa Ana River is a function of the quantity and quality of the various components of the flows. The two major components of total flow are storm flow and base flow. Storm flow is the water which results directly from rainfall (surface runoff) in the upper basin; it also includes the stormwater runoff form the San Jacinto Basin which may reach the River via Temescal Creek. Most storms occur during the winter rainy season (December through April). Base flow is composed of wastewater discharges, rising groundwater, and nonpoint source discharges. Wastewater discharges are the treated sewage effluents discharged by municipalities to the river and its tributaries. Rising groundwater occurs at a number of locations along the River, including the San Jacinto Fault, Riverside Narrows, and in or near the Prado flood Control Basin. Nonpoint source discharges include uncontrolled runoff from agricultural and urban areas which is not related to storm flows.

Nontributary flow is a third element of total flow. It is generally imported water released in the upper basin, for recharge in the lower basin (Santa Ana Forebay).

The Santa Ana River Watermaster calculates the amount and quality of total flow for each water year (October 1 to September 30). The Watermaster's Annual Report is used to determine compliance with the stipulated judgement referred to earlier, which set quality and quantity limits on the river. The Watermaster's report presents summary data compiled from the continuous monitoring of flow in cfs (cubic feet per second) and salinity as EC (electrical conductivity) at the USGS Prado Gaging Station. The Watermaster's annual determination of total flow quality will be used to determine compliance with the total flow objective in this Plan. In years of normal rainfall, most of the total flow of the river is percolated in the Santa Ana Forebay, and directly affects the quality of the groundwater. For that reason, compliance with the total dissolved solids (TDS) water quality objective for Reach 2 will be based on the five-year moving average of the annual TDS content of total flow. Use of this moving average allows the effects of wet and dry years to be smoothed out over the five-year period.

As was noted earlier, the three components of base flow in the river are wastewater, rising water, and nonpoint source discharges. These three components are present in varying amounts throughout the year, and the contributions and quality of each can be affected by the regulatory activities of the Regional Board. The quantity of storm flow is obviously highly variable; programs to control its quality are in their nascent stages. For these reasons, water quality objectives for controllable constituents are set based on the base flow of the river, rather than on total flow.

The regulatory activities of the Regional Board include setting waste discharge requirements on point source discharges. Waste discharges requirements are developed on the basis of the limited assimilative capacity of the river (see TDS and Nitrogen Wasteload Allocation, Chapter 5). Nonpoint source discharges, generally urban runoff (nuisance water) and agricultural tailwater, will be regulated by requiring compliance with Best Management Practices (BMPs), where appropriate. The rising water component of base flow will be affected by the extraction of brackish groundwater in several subbasins (a Basin Plan implementation action), by regulation of wastewater discharges, and other activities.

In order to determine whether the water quality and quantity objectives for base flow in Reach 3 are being met, the Regional Board will collect a series of grab and composite samples when the influence of storm flows and nontributary flows is at a minimum. This typically occurs during August and September. At this time of year, there is usually no water impounded behind Prado Dam. The volumes of storm flows, rising water and nonpoint source discharges tend to be low. The major component of base flow at this time is municipal wastewater. The results of this sampling will be compared with the continuous monitoring data collected by USGS and data from other sources. These data will be used to evaluate the efficacy of the Regional Board's regulatory approach, including the TDS and nitrogen wasteload allocations (see Chapter 5). Additional sampling in Reach 3 by the Board and other agencies will help evaluate the fate and effects of the various constituents of base flow, including the validity of the 50% nitrogen loss coefficient (discussed in Chapter 5).

Future river flows and quality (TDS and TIN) were projected by computer models. The results indicate that the objectives for TDS and total nitrogen will be met. The objectives for individual mineral constituents are expected to be met if the TDS objective is met.

Prado Basin Surface Water Management Zone

As discussed in Chapter 3 – Beneficial Uses, the Prado Basin Management Zone (PBMZ) is generally defined as a surface water feature within the Prado Basin. It is defined by the 566-foot elevation above mean sea level along the Santa Ana River and the four tributaries to the Santa Ana River in the Prado Basin (Chino Creek, Temescal Creek, Mill Creek and Cucamonga Creek). Nitrogen, TDS and other water quality objectives that have been established for these surface waters that flow within the proposed PBMZ are shown in Table 4-1. For the purpose of regulating discharges that would affect the PBMZ and downstream waters, these surface water objectives apply. This application of the existing surface water objectives assures continued water quality and beneficial use protection for waters within and downstream of the PBMZ.

"MAXIMUM BENEFIT" WATER QUALITY OBJECTIVES

As part of the 2004 update of the TDS/Nitrogen Management plan in the Basin Plan, several agencies proposed that alternative, less stringent TDS and/or nitrate-nitrogen water quality objectives be adopted for specific groundwater management zones and surface waters. These proposals were based on additional consideration of the factors specified in Water Code Section 13241 and the requirements of the State's antidegradation policy (State Board Resolution No. 68-16). Since the less stringent objectives would allow a lowering of water quality, the agencies were required to demonstrate that their proposed objectives would protect beneficial uses, and that water quality consistent with maximum benefit to the people of the state would be maintained (thus, the use of the term "maximum benefit" water quality objectives).

Appropriate beneficial use protection/maximum benefit demonstrations were made by the Chino Basin Watermaster/Inland Empire Utilities Agency, the Yucaipa Valley Water District and the City of Beaumont/San Timoteo Watershed Management Authority to justify alternative "maximum benefit" objectives for the Chino North, Cucamonga, Yucaipa, Beaumont and San Timoteo groundwater management zones. These "maximum benefit" proposals, which are described in detail in Chapter 5 – Implementation, entail commitments by the agencies to implement specific projects and programs. While these agencies' efforts to develop these proposals indicate their strong interest to proceed with these commitments, unforeseen circumstances may impede or preclude it. To address this possibility, this Plan includes both the "antidegradation" and "maximum benefit" objectives for the subject waters (See Table 4-1). Chapter 5 specifies the requirements for

implementation of these objectives. Provided that these agencies' commitments are met, then the agencies have demonstrated maximum benefit, and the "maximum benefit" objectives included in Table 4-1 for these waters apply for regulatory purposes. However, if the Regional Board finds that these commitments are not being met and that "maximum benefit" is thus not demonstrated, then the "antidegradation" objectives for these waters will apply. Chapter 5 also describes the mitigation requirements that will apply should discharges based on "maximum benefit" objectives occur unsupported by the demonstration of "maximum benefit".

COMPLIANCE WITH OBJECTIVES (Amended by Resolution No. 00-27, May 19, 2000)

"The Regional Board recognizes that immediate compliance with new, revised or newly interpreted water quality objectives adopted by the Regional Board or the State Water Resources Control Board, or with new, revised or newly interpreted water quality criteria promulgated by the U.S. Environmental Protection Agency, may not be feasible in all circumstances. Where the Regional Board determines that it is infeasible for a discharger to comply immediately with effluent limitations specified to implement such objectives or criteria, compliance shall be achieved in the shortest practicable period of time, not to exceed ten years after the adoption or interpretation of applicable objectives or criteria. This provision authorizes schedules of compliance for objectives and criteria that are adopted or revised or newly interpreted after the effective date of this amendment July 15, 2002.

REFERENCES

The "Federal Clean Water Act," 33 USC 466 ***et seq***.

California Water Code, Section 13000 "Water Quality," ***et seq***.

California State Water Resources Control Board, "Water Quality Criteria, Second Edition," 1963.

US EPA, "Ambient Water Quality Criteria for Ammonia," 1984.

US EPA Memorandum, "Revised Tables for Determining Average Freshwater Ammonia Concentrations," 1992.

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Santa Ana Watershed Project Authority, "Final Report, Santa Ana River Use-Attainability Analysis," June 1992.

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California Code of Regulations (CCR), Division 4, Chapter 15, Article 16, § 64449

Wildermuth Environmental, Inc., TIN/TDS – Phase 2A of the Santa Ana Watershed, Development of Groundwater Management Zones, Estimation of Historic and Current TDS and Nitrogen Concentrations in Groundwater, Final Technical Memorandum,” July 2000.

40 Code of Federal Regulations (CFR), Chapter 1, § 143,3

The Resources Agency of California, State Water Resources Control Board, Publication No. 3-1, “Water Quality Criteria”, pages 258-26, 1963

US Geological Survey, “Basic Ground-Water Hydrology”, Water Supply Paper 2220, pages 64-65, 1984

California State Water Resources Control Board, “Irrigation with Reclaimed Municipal Wastewater, A Guidance Manual”, Report No. 84-1, wr, July 1984.

REGION 8 INDEX

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481.23	Claremont Heights HSA Split
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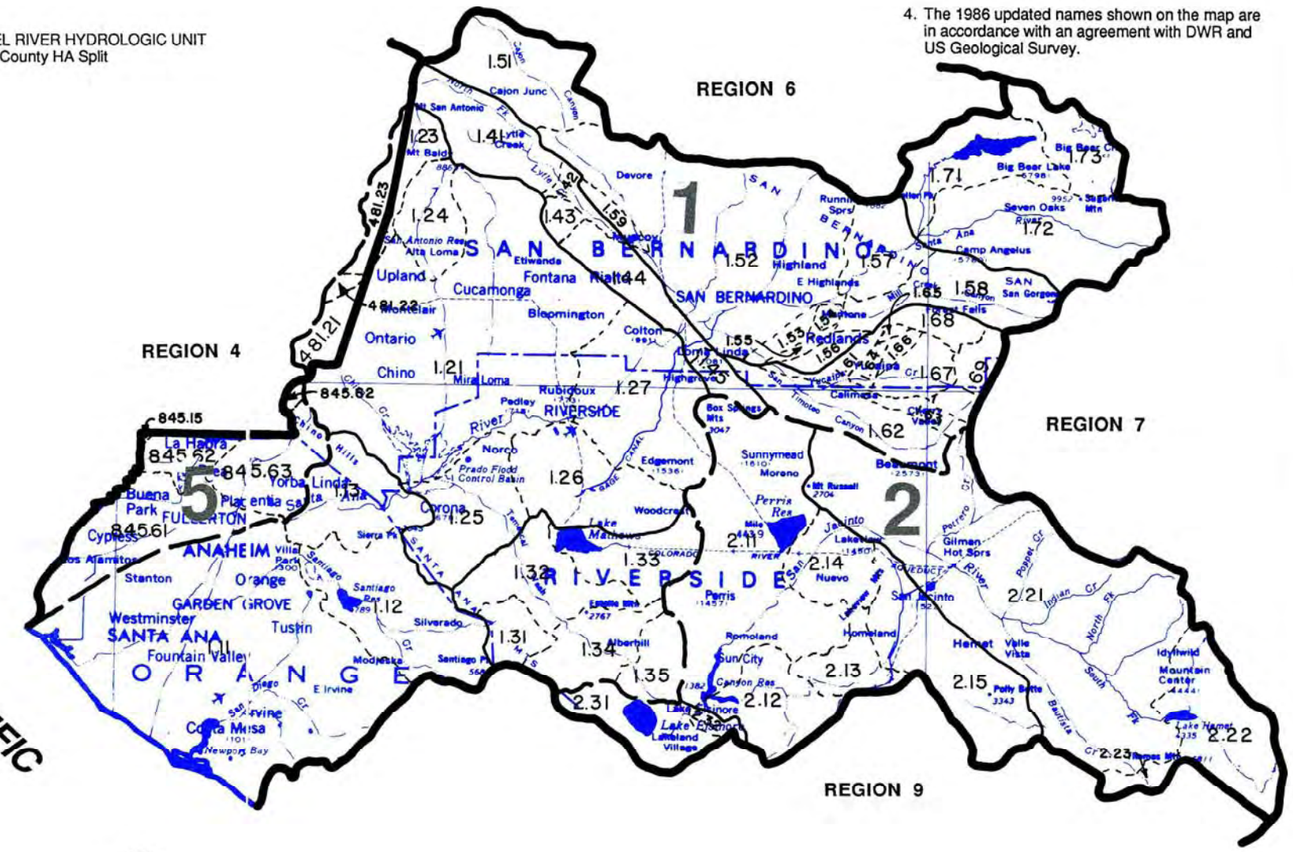
NOTE:

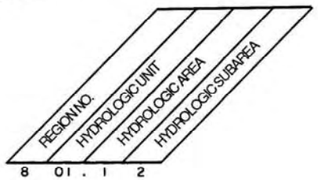
1. The names and areas shown on this map are the same as used by the Department of Water Resources (DWR) in their Bulletin 130 Series except as explained below.
2. The numbering system used on this map is an adaptation of the numbering system used in the 130 Series.
3. The boundary between Region 8 and Region 4 follows the boundary between Los Angeles County and Orange or San Bernardino Counties, not the Hydrologic Boundary. The San Bernardino County line splits Hydrologic Unit 1 (Santa Ana River HU) so that Sub-Areas 481.21, 481.22, and 481.23 are legally in Region 4 but drain into Region 8. The Orange County line splits Hydrologic Unit 5 (Los Angeles-San Gabriel River HU) so that Sub-Areas 845.15, 845.61, 845.62 and 845.63 are legally in Region 8 but drain into Region 4. Therefore, a 5 digit number on the map indicates that a regional boundary divides a hydrologic unit, area or subarea. In these cases the second digit is the number of the region from which the hydrologic area has been separated by the regional boundary. All other digits are as described in the legend.
4. The 1986 updated names shown on the map are in accordance with an agreement with DWR and US Geological Survey.



KEY TO REGION

LEGEND

- STREAM
- REGIONAL BOUNDARY
- HYDROLOGIC UNIT BOUNDARY (HU)
- HYDROLOGIC AREA BOUNDARY (HA)
- HYDROLOGIC SUBAREA BOUNDARY (SA)
- 5 HYDROLOGIC UNIT NUMBER



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April 1973
Revised: July 1976
Revised: August 1986

State Water Resources Control Board
Surveillance and Monitoring Section
T.E. Lavenda, P.E. T E Lavenda

State of California
REGIONAL WATER QUALITY CONTROL BOARD

Santa Ana Region (8)

SANTA ANA HYDROLOGIC BASIN PLANNING AREA (SA)

Scale in miles
8 0 8 16 24 32
Scale 1:500,000

Table 4-1 WATER QUALITY OBJECTIVES

OCEAN WATERS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**		
NEARSHORE ZONE*									
San Gabriel River to Poppy Street in Corona del Mar+	---	---	---	---	---	---	---	801.11	
Poppy Street to Southeast Regional Boundary+	---	---	---	---	---	---	---	801.11	
OFFSHORE ZONE									
Waters Between Nearshore Zone And Limit of State Waters+	---	---	---	---	---	---	---		

* Defined by Ocean Plan Chapter II A.1.: "Within a zone bounded by shoreline and a distance of 1000 feet from shoreline or the 30-foot depth Contour, whichever is further from shoreline…"

\+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

BAYS, ESTUARIES, AND TIDAL PRISMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solid	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**		
Anaheim Bay – Outer Bay+	---	---	---	---	---	---	---	801.11	
Anaheim Bay – Seal Beach National Wildlife Refuge+	---	---	---	---	---	---	---	801.11	
Sunset Bay – Huntington Harbour+	---	---	---	---	---	---	---	801.11	
Bolsa Bay+	---	---	---	---	---	---	---	801.11	
Bolsa Chica Ecological Reserve+	---	---	---	---	---	---	---	801.11	
Lower Newport Bay+	---	---	---	---	---	---	---	801.11	
Upper Newport Bay+	---	---	---	---	---	---	---	801.11	
Santa Ana River Salt Marsh+	---	---	---	---	---	---	---	801.11	
Tidal Prism of Santa Ana River (to within 1000' of Victoria Street) and Newport Slough+	---	---	---	---	---	---	---	801.11	
Tidal Prism of San Gabriel River – River Mouth to Marina Drive+	---	---	---	---	---	---	---	845.61	
Tidal Prisms of Flood Control Channels Discharging to Coastal or Bay Waters+	---	---	---	---	---	---	---	801.11	

\+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**		
LOWER SANTA ANA RIVER BASIN									
Santa Ana River									
Reach 1 – Tidal Prism to 17th Street in Santa Ana+	(Flood Flows Only)							801.11	
Reach 2 - 17th Street in Santa Ana to Prado Dam	650[1]	---	---	---	---	---	---	801.11	801.12
Aliso Creek+	---	---	---	---	---	---	---	845.63	
Carbon Canyon Creek+	---	---	---	---	---	---	---	845.63	
Santiago Creek Drainage									
Santiago Creek									
Reach 1 – below Irvine Lake	600	---	---	---	---	---	---	801.12	801.11
Reach 2 - Irvine Lake (see Lakes, Pg. 4-36)		---	---	---	---	---	---		
Reach 3 – Irvine Lake to Modjeska Canyon	350	260	20	12	2	80	---	801.12	
Reach 4 – in Modjeska Canyon	350	260	20	12	2	80	---	801.12	
Silverado Creek	650	450	30	20	1	275	---	801.12	
Black Star Creek+	---	---	---	---	---	---	---	801.12	
Ladd Creek+	---	---	---	---	---	---	---	801.12	

[1] Five-year moving average

\+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**		
San Diego Creek Drainage									
San Diego Creek									
Reach 1 – below Jeffrey Road	1500	---	---	---	13	---	90	801.11	
Reach 2 – above Jeffrey Road to Headwaters	720	---	---	---	5	---	---	801.11	
Other Tributaries: Bonita Creek, Serrano Creek, Peters Canyon Wash, Hicks Canyon Wash, Bee Canyon Wash, Borrego Canyon Wash, Agua Chinon Wash, Laguna Canyon Wash, Rattlesnake Canyon Wash, Sand Canyon Wash and other Tributaries to these Creeks+	---	---	---	---	---	---	---		
San Gabriel River Drainage									
Coyote Creek (within Santa Ana Regional Boundary)+	---	---	---	---	---	---	---		

\+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**		
UPPER SANTA ANA RIVER BASIN									
Santa Ana River									
Reach 3 – Prado Dam to Mission Blvd. in Riverside – Base Flow[2]	700	350	110	140	10[3]	150	30	801.21	801.27, 801.25
Reach 4 – Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino	550	---	---	---	10	---	30	801.27	801.44
Reach 5 – San Jacinto Fault in San Bernardino to Seven Oaks Dam	300	190	30	20	5	60	25	801.52	801.57
Reach 6 – Seven Oaks Dam to Headwaters (see also Individual Tributary Streams)	200	100	30	10	1	20	5	801.72	
San Bernardino Mountain Streams									
Mill Creek Drainage:									
Mill Creek									
Reach 1 – Confluence with Santa Ana River to Bridge Crossing Route 38 at Upper Powerhouse	200	100	30	10	1	20	5	801.58	
Reach 2 – Bridge Crossing Route 38 at Upper Powerhouse to Headwaters	110	100	25	5	1	15	5	801.58	

[2] Additional Objectives: Boron: 0.75 mg/l

[3] Total nitrogen, filtered sample

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Mountain Home Creek	200	100	30	10	1	20	5	801.58	
Mountain Home Creek, East Fork	200	---	---	---	---	---	---	801.70	
Monkey Face Creek	200	100	30	10	1	20	5	801.70	
Alger Creek	200	---	---	---	---	---	---	801.70	
Falls Creek	200	100	30	10	1	20	5	801.70	
Vivian Creek	200	---	---	---	---	---	---	801.70	
High Creek	200	---	---	---	---	---	---	801.70	
Other Tributaries: Lost, Oak Cove, Green, Skinner, Momyer, Glen Martin, Camp, Hatchery, Rattlesnake, Slide, Snow, Bridal Veil, and Oak Creeks, and other Tributaries to these Creeks	200	---	---	---	---	---	---	801.70	
Bear Creek Drainage:									
Bear Creek	175	115	10	10	1	4	5	801.71	
Siberia Creek	200	---	---	---	---	---	---	801.71	
Slide Creek	175	---	---	---	---	---	---	801.71	
All other Tributaries to these Creeks+	---	---	---	---	---	---	---	801.71	
Big Bear Lake (see Lakes, pg. 4-36)									

\+ Numeric objectives have not been established; narrative objectives apply. .

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Big Bear Lake Tributaries:									
North Creek	175	---	---	---	---	---	---	801.71	
Metcalf Creek	175	---	---	---	---	---	---	801.71	
Grout Creek	150	---	---	---	---	---	---	801.71	
Rathbone (Rathbun) Creek	300	---	---	---	---	---	---	801.71	
Meadow Creek+	---	---	---	---	---	---	---	801.71	
Summit Creek+	---	---	---	---	---	---	---	801.71	
Other Tributaries to Big Bear Lake: Knickerbocker, Johnson, Minnelusa, Polique, and Red Ant Creeks, and other Tributaries to these Creeks	175	---	---	---	---	---	---	801.71	
Baldwin Lake (see Lakes, pg. 4-36)									
Baldwin Lake Drainage:									
Shay Creek+	---	---	---	---	---	---	---	801.73	
Other Tributaries to Baldwin Lake: Sawmill, Green, and Caribou Canyons and other Tributaries to these Creeks+	---	---	---	---	---	---	---	801.73	

\+ Numeric objectives have not been established; narrative objectives apply. .

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Other Streams Draining to Santa Ana River (Mountain Reaches[1])									
Cajon Creek	200	100	30	10	1	20	5	801.51	
City Creek	200	115	30	10	1	20	5	801.57	
Devil Canyon Creek	275	125	35	20	1	2	5	801.57	
East Twin and Strawberry Creeks	475	---	---	---	---	---	---	801.57	
Waterman Canyon Creek	250	---	---	---	---	---	---	801.57	
Fish Creek	200	100	30	10	1	20	5	801.57	
Forsee Creek	200	100	30	10	1	20	5	801.72	
Plunge Creek	200	100	30	10	1	20	5	801.72	
Barton Creek	200	100	30	10	1	20	5	801.72	
Bailey Canyon Creek	200	---	---	---	---	---	---	801.72	
Kimbark Canyon, East Fork Kimbark Canyon, Ames Canyon And West Fork Cable Canyon Creeks	325	---	---	---	---	---	---	801.52	
Valley Reaches[‡] of Above Streams	(Water Quality Objectives Correspond to Underlying GW Basin Objectives)							801.52	

[‡] The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Other Tributaries (Mountain Reaches[1]): Alder, Badger Canyon, Bledsoe Gulch, Borea Canyon, Breakneck, Cable Canyon, Cienega Seca, Cold, Converse, Coon, Crystal, Deer, Elder, Fredalba, Frog, Government, Hamilton, Heart Bar, Hemlock, Keller, Kilpecker, Little Mill, Little Sand Canyon, Lost, Meyer Canyon, Mile, Monroe Canyon, Oak, Rattlesnake, Round Cienega, Sand, Schneider, Staircase, Warm Springs Canyon And Wild Horse Creeks, and other tributaries to those Creeks	200	100	30	10	1	20	5	801.72	801.71, 801.57
San Gabriel Mountain Streams (Mountain Reaches[‡])									
San Antonio Creek	225	150	20	6	4	25	5	801.23	
Lytle Creek (South, Middle, and North Forks) and Coldwater Canyon Creek	200	100	15	4	4	25	5	801.41	801.42, 801.52, 801.59
Day Creek	200	100	15	4	4	25	5	801.21	
East Etiwanda Creek	200	100	15	4	4	25	5	801.21	
Valley Reaches[‡] of Above Streams	(Water Quality Objectives Correspond to Underlying GW Basin Objectives)							801.21	

‡ The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Cucamonga Creek									
Reach 1 – Confluence with Mill Creek to 23rd St. in Upland+	---	---	---	---	---	---	---	801.21	
Reach 2 (Mountain Reach‡) – 23rd St. in Upland to headwaters	200	100	15	4	4	25	5	801.24	
Mill Creek+	---	---	---	---	---	---	---	801.25	
Other Tributaries (Mountain Reaches+): Cajon Canyon, San Sevaine, Deer, Duncan Canyon, Henderson Canyon, Bull, Fan, Demens, Thorpe, Angalls, Telegraph Canyon, Stoddard Canyon, Icehouse Canyon, Cascade Canyon, Cedar, Failing Rock, Kerkhoff and Cherry Creeks, and other Tributaries to these Creeks	200	---	---	---	---	---	---	801.21	801.23
San Timoteo Area Streams									
San Timoteo Creek **									
Reach 1A – Santa Ana River Confluence to Barton Road	---	---	---	---	---	---	---	801.52	801.53
Reach 1B – Barton Road to Gage at San Timoteo Canyon Rd. u/s of Yucaipa Valley WD discharge	---	---	---	---	---	---	---	801.52	801.53
Reach 2 – Gage at San Timoteo Canyon Road to Confluence with Yucaipa Creek	---	---	---	---	---	---	---	801.52	801.62

\+ Numeric objectives have not been established; narrative objectives apply

‡ The Division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

** Surface water objectives not established; underlying Management Zone objectives apply. Biological quality protected by narrative objectives

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Reach 3** – Confluence with Yucaipa Creek to confluence with Little San Gorgonio and Noble Creeks (Headwaters of San Timoteo Creek)	---	---	---	---	---	---	---	801.62	
Oak Glen, Potato Canyon and Birch Creeks	230	125	50	40	3	45	5	801.67	
Little San Gorgonio Creek	230	125	50	40	3	45	5	801.69	801.62, 801.63
Yucaipa Creek	290	175	60	60	6	45	15	801.67	801.61, 801.62 801.64
Other Tributaries to these Creeks – Valley Reaches +‡	---	---	---	---	---	---	---	801.62	801.52, 801.53
Other Tributaries to these Creeks – Mountain Reaches‡	290	---	---	---	---	---	---	801.69	801.67
Anza Park Drain+	---	---	---	---	---	---	---	801.27	
Sunneyslope Channel+	---	---	---	---	---	---	---	801.27	
Tequesquite Arroyo (Sycamore Creek)+	---	---	---	---	---	---	---	801.27	

\+ Numeric objectives have not been established; narrative objectives apply

** Surface water objectives not established; underlying Management Zone objectives apply. Biological quality protected by narrative objectives

‡ The Division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Prado Area Streams									
Chino Creek									
Reach 1A – Santa Ana River confluence to downstream of confluence with Mill Creek (Prado Area) – Base Flow*	700	350	110	140	10**	150	30	801.21	
Reach 1B – Confluence of Mill Creek (Prado Area) to beginning of concrete-lined channel south of Los Serranos Road	550	240	75	75	8	60	15	801.21	
Reach 2 – Beginning of concrete lined channel south of Los Serranos Road to confluence with San Antonio Creek	---	---	---	---	---	---	---	801.21	
Temescal Creek									
Reach 1 – Lincoln Avenue to Riverside Canal+	---	---	---	---	---	---	---	801.27	
Reach 2 – Riverside Canal to Lee Lake+	---	---	---	---	---	---	---	801.27	
Reach 3 – Lee Lake, (see Lakes, Pg. 4-36)									

* Additional objective: Boron 0.75 mg/l

** Total nitrogen, filtered sample

\+ Numeric objectives have not been established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Reach 4 – Lee Lake to Mid-section line of Section 17 (downstream end of freeway cut)+	---	---	---	---	---	---	---	801.34	
Reach 5 – Mid-section line of Section 17 (downstream end of freeway cut) to Elsinore Groundwater Subbasin Boundary+	---	---	---	---	---	---	---	801.35	
Reach 6 – Elsinore Groundwater Subbasin Boundary to Lake Elsinore Outlet+	---	---	---	---	---	---	---	801.27	
Coldwater Canyon Creek	250	---	---	---	---	---	---	801.32	
Bedford Canyon Creek+	---	---	---	---	---	---	---	801.32	
Dawson Canyon Creek+	---	---	---	---	---	---	---	801.32	
Other Tributaries to these Creeks	250	---	---	---	---	---	---	801.32	

\+ Numeric objectives have not been established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
San Jacinto River Basin									
San Jacinto River									
Reach 1 – Lake Elsinore to Canyon Lake	450	260	50	65	3	60	15	802.32	802.31
Reach 2 – Canyon Lake (see Lakes, Pg. 4-37)									
Reach 3 – Canyon Lake to Nuevo Road	820	400	---	250	6	---	15	802.11	
Reach 4 – Nuevo Road to North-South Mid-Section Line, T4S/R1W-38*	500	220	75	125	5	65	---	802.14	802.21
Reach 5 – North-South Mid-Section Line, T4S/R1 W-SB, to Confluence With Poppet Creek	300	140	30	25	3	40	12	802.21	
Reach 6 – Poppet Creek to Cranston Bridge	250	130	25	20	1	30	12	802.21	
Reach 7 – Cranston Bridge to Lake Hemet	150	100	10	15	1	20	5	802.21	
Bautista Creek – Headwaters to Debris Dam	250	130	25	20	1	30	5	802.21	802.23
Strawberry Creek and San Jacinto River, North Fork	150	100	10	15	1	20	5	802.21	

* Note the quality objective for Reach 4 is not intended to preclude transport of water supplies or delivery to Canyon Lake

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
Fuller Mill Creek	150	100	10	15	1	20	5	802.22	
Stone Creek	150	100	10	15	1	20	5	802.21	
Salt Creek+	---	---	---	---	---	---	---	802.12	
Other Tributaries: Logan, Black Mountain, Juaro Canyon, Indian, Hurkey, Poppet and Protrero Creeks, and other Tributaries to these Creeks	150	70	10	12	1	15	5	802.12	802.22

\+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

LAKES AND RESERVOIRS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
UPPER SANTA ANA RIVER BASIN									
Baldwin Lake*+	---	---	---	---	---	---	---	801.73	
Big Bear Lake**	175	125	20	10	0.15	10	---	801.71	
Erwin Lake+	---	---	---	---	---	---	---	801.73	
Evans Lake	490	---	---	---	---	---	---	801.27	
Jenks Lake	200	100	30	10	1	20	---	801.72	
Lee Lake+	---	---	---	---	---	---	---	801.34	
Mathews, Lake	700	325	100	90	---	290	---	801.33	
Mockingbird Reservoir	650	---	---	---	---	---	---	801.26	
Norconian, Lake	1050	---	---	---	---	---	---	801.25	
LOWER SANTA ANA RIVER BASIN									
Anaheim Lake	600	---	---	---	---	---	---	801.11	
Irvine Lake (Santiago Reservoir)	730	360	110	130	6	310	---	801.12	
Laguna, Lambert, Peters Canyon, Rattlesnake, Sand Canyon, and Siphon Reservoirs	720	---	---	---	---	---	---	801.11	

* Fills occasionally with storm flows; may evaporate completely

** Additional Objective: 0.15 mg/l Phosphorus

\+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

LAKES AND RESERVOIRS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
SAN JACINTO RIVER BASIN									
Canyon Lake (Railroad Canyon Reservoir)***	700	325	100	90	8	290	---	802.11	802.12
Elsinore, Lake****	2000	---	---	---	1.5	---	---	802.31	
Fulmor, Lake	150	70	10	12	1	15	---	802.21	
Hemet, Lake	135	---	25	20	1	10	---	802.22	
Perris, Lake	220	110	50	55	1	45	---	802.11	

*** Note: The quality objectives for Canyon Lake is not intended to preclude transport of water supplies or delivery to the Lake.

**** Lake volume and quality highly variable

Table 4-1 WATER QUALITY OBJECTIVES - Continued

WETLANDS (INLAND)	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Total Inorganic Nitrogen**	**Sulfate**	**Chemical Oxygen Demand**	Primary	Secondary
San Jacinto Freshwater Marsh** ##	2000	---	---	---	13	---	90	801.11	
Shay Meadows+	---	---	---	---		---	---	801.73	
Stanfield Marsh+**	---	---	---	---	---	---	---	801.71	
Prado Basin Management Zone @	---	---	---	---	---	---	---	801.21	
San Jacinto Wildlife Preserve+**	---	---	---	---	---	---	---	802.11	802.14
Glen Helen+	---	---	---	---	---	---	---	801.59	

Additional objective for San Joaquin Freshwater Marsh: COD 90 mg/l

** This is a created wetlands as defined in the wetlands discussion (see Chapter 3)

+ Numeric objectives have not been established; narrative objectives apply

@ includes the Prado Flood Control Basin, a created wetland as defined in the wetlands discussion (see Chapter 3). Chino Creek, Reach 1A, Chino Creek, 1B, Mill Creek (Prado Area) and Santa Ana River, Reach 3 TDS and TIN numeric objectives apply (see discussion).

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)						Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Nitrate as Nitrogen**	**Sulfate**	Primary	Secondary
UPPER SANTA ANA RIVER BASIN								
Big Bear Valley	300	225	20	10	5.0	20	801.73	
Beaumont “maximum benefit”++	330	---	---	---	5.0	---	801.62	801.63, 801.69
Beaumont “antidegradation”++	230	---	---	---	1.5	---	801.62	801.63, 801.69
Bunker Hill - A	310	---	---	---	2.7	---	801.51	801.52
Bunker Hill - B	330	---	---	---	7.3	---	801.52	801.53, 801.54, 801.57 801.58
Colton	410	---	---	---	2.7	---	801.44	801.45
Chino – North “maximum benefit”++	420	---	---	---	5.0	---	801.21	481.21, 481.23, 481.22 801.21, 801.23, 801.24
Chino 1 – “antidegradation”++	280	---	---	---	5.0	---	802.21	481.21
Chino 2 – “antidegradation”++	250	---	---	---	2.9	---	801.21	
Chino 3 – “antidegradation”++	260	---	---	---	3.5	---	801.21	
Chino – East @	730	---	---	---	10.0	---	801.21	801.27
Chino – South @	680	---	---	---	4.2	---	801.21	801.26
Cucamonga “maximum benefit”++	380	---	---	---	5.0	---	801.24	801.21

++ “Maximum benefit” objectives apply unless Regional Board determines that lowering of water quality is not of maximum benefit to the people of the state; in that case, “antidegradation” objectives apply (for Chino North, antidegradation objectives for Chino 1, 2, 3 would apply if maximum benefit is not demonstrated). (see discussion in Chapter 5).

@ Chino East and South are the designations in the Chino Basin Watermaster “maximum benefit” proposal (see Chapter 5) for the management Zones identified by Wildermuth Environmental, Inc., (July 2000) as Chino 4 and Chino 5, respectively.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)						Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Nitrate as Nitrogen**	**Sulfate**	Primary	Secondary
UPPER SANTA ANA RIVER BASIN								
Cucamonga "antidegradation"++	210	---	---	---	2.4	---	801.24	801.21
Lytle	260	---	---	---	1.5	---	801.42	801.42
Rialto	230	---	---	---	2.0	---	801.41	801.42
San Timoteo "maximum benefit"++	400	---	---	---	5.0	---	801.62	
San Timoteo "antidegradation"++	300	---	---		2.7	---	801.62	
Yucaipa "maximum benefit"++	370	---	---	---	5.0	---	801.61	801.55, 801.54, 801.56, 801.63, 801.65, 801.66 801.67
Yucaipa "antidegradation"++	320	---	---	---	4.2	---	801.61	801.55, 801.54, 801.56, 801.63, 801.65, 801.66 801.67
MIDDLE SANTA ANA RIVER BASIN								
Arlington	980	---	---	---	10	---	801.26	
Bedford**	---	---	---	---	---	---	801.32	
Coldwater	380	---	---	---	1.5	---	801.31	
Elsinore	480	---	---	---	1.0	---	802.31	
Lee Lake**	---	---	---	---	---	---	801.34	

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++ "Maximum benefit" objectives apply unless Regional Board determines that lowering of water quality is not of maximum benefit to the people of the state; in that case, "antidegradation" objectives apply (for Chino North, antidegradation objectives for Chino 1, 2, 3 would apply if maximum benefit is not demonstrated). (see discussion in Chapter 5).

** Numeric objectives not established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)						Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Nitrate as Nitrogen**	**Sulfate**	Primary	Secondary
Riverside - A	560	---	---	---	6.2	---	801.27	
Riverside - B	290	---	---	---	7.6	---	801.27	
Riverside - C	680	---	---	---	8.3	---	801.27	
Riverside - D	810	---	---	---	10.0	---	801.27	
Riverside - E	720	---	---	---	10.0	---	801.27	
Riverside - F	660	---	---	---	9.5	---	801.27	
Temescal	770	---	---	---	10.0	---	801.25	
SAN JACINTO RIVER BASIN								
Gardner Valley	300	100	65	30	2.0	40	802.22	
Idyllwild Area**	---	---	---	---	---	---	802.22	802.21
Canyon	230	---	---	---	2.5	---	802.21	
Hemet - South	730	---	---	---	4.1	---	802.15	802.21
Lakeview – Hemet North	520	---	---	---	1.8	---	802.14	802.15

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** Numeric objectives not established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)						Hydrologic Unit	
	Total Dissolved Solids	**Hardness**	**Sodium**	**Chloride**	**Nitrate as Nitrogen**	**Sulfate**	Primary	Secondary
Menifee	1020	---	---	---	2.8	---	802.13	
Perris North	570	---	---	---	5.2	---	802.11	
Perris South	1260	---	---	---	2.5	---	802.11	802.12, 802.13
San Jacinto - Lower	520	---	---	---	1.0	---	802.21	
San Jacinto - Upper	320	---	---	---	1.4	---	802.21	802.23
LOWER SANTA ANA RIVER BASIN								
La Habra**	---	---	---	---	---	---	845.62	
Santiago**	---	---	---	---	---	---	801.12	
Orange	580	---	---	---	3.4	---	801.11	801.13, 845.61, 801.14
Irvine	910	---	---	---	5.9	---	801.11	

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** Numeric objectives not established; narrative objectives apply

Table 4-2

4-Day Average Concentration for Ammonia
Salmonids or Other Sensitive Coldwater Species Present
(COLD)

Un-ionized Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	0.0004	0.0005	0.0007	0.0010	0.0010	0.0010	0.0010
	6.75	0.0006	0.0009	0.0013	0.0018	0.0018	0.0018	0.0018
	7.00	0.0011	0.0016	0.0022	0.0031	0.0031	0.0031	0.0031
	7.25	0.0020	0.0028	0.0040	0.0056	0.0056	0.0056	0.0056
	7.50	0.0035	0.0050	0.0070	0.0099	0.0099	0.0099	0.0099
	7.75	0.0069	0.0097	0.0137	0.0194	0.0194	0.0194	0.0194
	8.00	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
	8.25	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
	8.50	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
	8.75	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
	9.00	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224

Total Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	1.36	1.27	1.20	1.15	0.796	0.556	0.393
	6.75	1.36	1.27	1.20	1.15	0.796	0.556	0.393
	7.00	1.36	1.27	1.20	1.16	0.798	0.558	0.395
	7.25	1.36	1.27	1.20	1.16	0.800	0.560	0.397
	7.50	1.36	1.27	1.21	1.16	0.804	0.565	0.402
	7.75	1.49	1.40	1.33	1.28	0.890	0.627	0.448
	8.00	0.974	0.913	0.871	0.844	0.589	0.418	0.302
	8.25	0.551	0.519	0.497	0.484	0.341	0.245	0.179
	8.50	0.313	0.297	0.286	0.282	0.202	0.147	0.111
	8.75	0.180	0.172	0.168	0.169	0.123	0.093	0.072
	9.00	0.105	0.101	0.101	0.105	0.079	0.062	0.050

Table 4-3

4-Day Average Concentration for Ammonia
Salmonids or Other Sensitive Coldwater Species Absent [1]
(WARM)

Un-ionized Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	0.0006	0.0008	0.0012	0.0017	0.0024	0.0024	0.0024
	6.75	0.0010	0.0015	0.0021	0.0030	0.0042	0.0042	0.0042
	7.00	0.0019	0.0026	0.0037	0.0053	0.0074	0.0074	0.0074
	7.25	0.0033	0.0047	0.0066	0.0094	0.0132	0.0132	0.0132
	7.50	0.0059	0.0083	0.0118	0.0166	0.0235	0.0235	0.0235
	7.75	0.0115	0.0162	0.0229	0.0324	0.0458	0.0458	0.0458
	8.00	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
	8.25	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
	8.50	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
	8.75	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
	9.00	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530

Total Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	2.27	2.12	2.01	1.93	1.88	1.31	0.928
	6.75	2.27	2.12	2.01	1.93	1.88	1.31	0.930
	7.00	2.27	2.12	2.01	1.93	1.89	1.32	0.933
	7.25	2.27	2.12	2.01	1.94	1.89	1.32	0.939
	7.50	2.27	2.13	2.02	1.95	1.90	1.33	0.949
	7.75	2.49	2.34	2.22	2.14	2.10	1.48	1.06
	8.00	1.63	1.53	1.46	1.41	1.39	0.987	0.173
	8.25	0.922	0.868	0.831	0.811	0.806	0.578	0.424
	8.50	0.524	0.496	0.479	0.472	0.476	0.348	0.262
	8.75	0.301	0.287	0.281	0.282	0.291	0.219	0.170
	9.00	0.175	0.170	0.170	0.175	0.187	0.146	0.119

1 The values may be conservative, however. If a more refined criterion is desired, EPA recommends a site-specific Criteria modification.

Table 4-4

Equations Used to Calculate UIA-N and Total Ammonia -N Water Quality Objectives for COLD and WARM Waterbodies

COLD-Chronic UIA-N	0≤T≤15	15≤T≤30
6.5≤pH≤7.7	$\frac{0.0223}{10^{(8.3-.03T-pH)}}$	$\frac{0.0158}{10^{(7.7-pH)}}$
7.7≤pH≤8	$\frac{0.0396}{10^{(0.6-0.03T)}+10^{(8.0-0.03T-pH)}}$	$\frac{0.0280}{1+10^{(7.4-pH)}}$
8≤pH≤9	$\frac{0.0317}{10^{(0.6-0.03T)}}$	0.0224

WARM-Chronic UIA-N	0≤T≤15	15≤T≤30
6.5≤pH≤7.7	$\frac{0.0372}{10^{(8.3-.03T-pH)}}$	$\frac{0.0372}{10^{(7.7-pH)}}$
7.7≤pH≤8	$\frac{0.0662}{10^{(0.6-0.03T)}+10^{(8.0-0.03T-pH)}}$	$\frac{0.0662}{1+10^{(7.4-pH)}}$
8≤pH≤9	$\frac{0.0530}{10^{(0.6-0.03T)}}$	0.0530

Total Ammonia-N Objectives

$$NH_3\text{-}N = UIA\text{-}N * [1+10^{(0.09018+\frac{2729.92}{T+273.15}-pH)}]$$

Note: For all equations, T is the temperature in °C

CHAPTER 5

IMPLEMENTATION

SELECTED CHAPTER CONTENTS

INTRODUCTION

This chapter describes the implementation plan, the actions that are necessary to achieve the water quality objectives specified in Chapter 4 and thereby protect the beneficial uses of the region's surface and groundwaters (Chapter 3). These actions will require the coordinated efforts of the Regional Board and numerous water supply and wastewater management agencies, as well as city and county governments and other planning entities within the Region.

The Implementation chapter of the 1983 Basin Plan focused largely on the mineral imbalance problem in the region and the management of total dissolved solids (TDS) through waste discharges requirements, wastewater reclamation requirements, improvements in water supply quality, recharge projects, and other measures. Since the adoption of the 1983 Basin Plan, the Regional Board's knowledge of the water quality problems in the Santa Ana Region has increased considerably, and the number and variety of water quality programs undertaken to address those problems have increased accordingly. Several new programs are being implemented statewide by each regional board, including broad new responsibilities related to landfill operations and closure, oversight of leaking underground storage tank cleanup activities, and control of nonpoint sources such as urban runoff and stormwater from industrial facilities and construction sites. These new programs are part of the Board's implementation plan and are described in this chapter.

IMPLEMENTATION THROUGH WASTE DISCHARGE REQUIREMENTS

The Regional Board's principal means of achieving the water quality objectives and protecting the beneficial uses specified in this plan is the development, adoption, issuance and enforcement of waste discharge requirements. By regulating the quality of wastewaters discharged, and in other ways controlling the discharge of wastes which may impact surface and groundwater quality, the Regional Board works to protect the Region's water resources.

The Regional Board's regulatory tools include National Pollutant Discharge Elimination System permits, Waste Discharge Requirements, Water Reclamation Requirements, Water Quality Certification and Waste Discharge Prohibition.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to "navigable waters" of the United States, which includes any discharge to surface waters – lakes, rivers, streams, bays, the ocean, dry streambeds, wetlands and storm sewers that are tributary to any surface water body. NPDES permits are issued under the federal Clean Water Act, Title IV "Permits and Licenses," Section 402 (33 USC 466 *et seq*.). The Regional Board issues these permits in lieu of direct issuance by the US EPA, subject to review and approval by the US EPA Regional Administrator (EPA Region IX). The terms of these NPDES permits implement pertinent provisions of the federal Clean Water Act and the Act's implementing regulations including pretreatment, sludge management, effluent limitations for specific industries and antidegradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the Regional Board are also Waste Discharge Requirements issued under the authority of the California Water Code.

In addition to regulating discharges of wastewater to surface waters, NPDES permits also require municipal sewage treatment facilities to implement and monitor industrial pretreatment programs if their design capacity is greater than five million gallons per day (MGD). Smaller municipal treatment systems may also be required to conduct pretreatment programs if there are significant industrial contributions to their systems. The pretreatment programs must comply with the federal regulations specified in 40 CFR 403.

At this time, there are approximately 2,000 NPDES permits in effect in the Santa Ana Region. As shown in Table 5-1, these NPDES permits regulate discharge from publicly owned treatment works (POTWs, or sewage treatment plants), industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Santa Ana Region has caused a significant increase in NPDES permit applications for new waste discharges. Because of staff resource limitations, the Board generally focuses its permitting efforts on the issuance of permits for these new discharges. NPDES permit updates are done to the extent feasible, particularly for the more significant discharges. In some cases, if the discharge does not change substantially over the permitting period, administrative extensions of the existing permits are issued by the Regional Board's Executive Officer.

To expedite the permit issuance process, the Regional Board has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. These general permits address discharges from groundwater cleanup projects (Order No. 91-63) and dewatering activities (Order No. 93-49). Proponents of groundwater cleanup or dewatering projects are required to file individual permit applications, which are reviewed

by Regional Board staff to determine whether the requirements of the general permits apply and are sufficient to assure water quality protection. If so, the applicants are authorized by the Regional Board's Executive Officer to discharge in conformance with the general permit. A general permit for boatyard operations is being drafted. Additional general permits will be developed and adopted as appropriate to streamline the permitting process.

Similarly, the State Board has issued general permits for stormwater runoff from industrial facilities and construction sites statewide (see discussion on stormwater runoff). Stormwater discharges from industrial and construction activities in the Santa Ana Region can be covered under these general permits, which are administered jointly by the State Board and Regional Boards.

(Amended by Resolution No. 00-27, May 19, 2000)
Where the Regional Board determines that it is infeasible to achieve immediate compliance with an effluent limitation specified to implement a new, revised or newly interpreted water quality objective, whether numeric or narrative, adopted by the Regional Board or State Water Resources Control Board, or with a new, revised or newly interpreted water quality criterion promulgated by the U.S. Environmental Protection Agency, the Regional Board may establish a schedule of compliance in a discharger's waste discharge requirements (NPDES permit). The schedule of compliance shall include a time schedule for completing specific actions that demonstrate reasonable progress toward attainment of the effluent limitation and, thereby, the objective or criterion. The schedule shall contain a final compliance date, based on the shortest practicable time (determined by the Regional Board at a public hearing) required to achieve compliance. In no event shall an NPDES permit include a schedule of compliance that allows more than ten years from the date of adoption or interpretation of the applicable objective or criterion. Schedules of compliance are authorized by this provision only for those effluent limitations that implement objectives and criteria adopted, revised or newly interpreted after the effective date of this provision, July 15, 2002.

To document the need for and justify the duration of any such compliance schedule, a discharger must submit the following information, at a minimum: (1) the results of a diligent effort to quantify pollutant levels in the discharge and the sources of the pollutant(s) in the waste stream; (2) documentation of source control efforts currently underway or completed, including compliance with any Pollution Prevention programs that have been established; (3) a proposed schedule for additional source control measures or waste treatment; (4) the discharge quality that can reasonably be achieved until final compliance is attained; and (5) a demonstration that the proposed schedule is as short as possible, taking into account economic, technical and other relevant factors. The need for additional information and analyses will be determined by the Regional Board on a case-by-case basis. **(End of Resolution No. 00-27)**

Table 5-1

Representative NPDES Permitted Facilities in the Santa Ana Region
(as of November 3, 1993)[1]

Facility Type	Number Requested
Boatyards	10
Dewatering Operations	31
Groundwater Cleanup Projects	150
Stormwater Discharges 39 individually regulated by RWQCB; 1800 regulated by SWRCB's general permits	1839
Publicly Owned Treatment Works	
TOTAL	**2054**

[1] The list of facilities is regulated under NPDES permits is updated periodically and is available at the Regional Board office.

Table 5-2

Representative WDR Permitted Facilities in the Santa Ana Region
(as of November 3, 1993) [2]

Facility Type	Number Regulated
Brine Evaporation	24
Composing	19
Groundwater Cleanup	32
Dairies	468
Landfills	43
Mobile Home Parks (community septic systems)	22
Publicly Owned Treatment Works	37
TOTAL	**645**

[2] The list of facilities regulated under WDR permits is updated periodically and is available at the Regional Board office.

Where the terms of these general permits are not sufficient to protect water quality, the Board issues individual permits for these discharges.

Waste Discharge Requirements

Waste Discharge Requirements (WDRs) are issued by the Regional Board under the provisions of the California Water Code, Division 7 "Water Quality," Article 4 "Waste Discharge Requirements." These requirements regulate the discharge of wastes which are not made to surface waters but which may impact the region's water quality by affecting underlying groundwater basins. Such WDRs are issued for POTWs' wastewater reclamation operations, discharges of wastes from industries, subsurface waste discharges such as septic systems, sanitary landfills, dairies and a variety of other activities which can affect water quality. There are approximately 550 WDRs in place, as indicated in Table 5-2.

Table 5-2 shows that most WDRs have been issued to dairies. To streamline the permit process, the Regional Board has developed a general permit for dairies and other animal confinement facilities (Order No. 94-7). To implement the federal stormwater requirements, this permit will be issued as an NPDES permit.

Waivers

The California Water Code allows Regional Boards to waive waste discharge requirements (WDRs) for a specific discharge or types of discharges where it is not against the public interest (Section 13269). These waivers are conditional and may be terminated at any time.

On May 11, 1984, the Regional Board adopted Resolution No. 84-48, which waives WDRs for certain types of discharges. Resolution No. 84-48 was amended by Resolution No. 91-75 in 1991. Resolution No. 84-48 and Resolution No 91-75 are incorporated into the Basin Plan by reference and are included in Appendix IV. Only discharges which comply with the conditions contained in Resolution No. 84-48 as amended by Resolution No. 91-75, qualify for this waiver. Even though a discharge may qualify for a waiver, dischargers are still required to file Reports of Waste Discharge (ROWD), together with the appropriate filing fees. Regional Board staff determines if the effort expended in reviewing the ROWD justifies retaining any portion of the fee. If not, the fee is fully refunded.

Water Reclamation Requirements

Reclaimed water is water that, as a result of treatment, is suitable for a direct beneficial use or a controlled use that would otherwise not occur and is therefore considered a valuable resource. The State Board adopted the Reclamation Policy to encourage development of water reclamation facilities to increase the availability of reclaimed water to help meet the growing water requirements of the State (Chapter 2). The State Board is authorized to provide loans for the development of water reclamation facilities, or for studies and investigations in connection with water reclamation.

Section 13521 of the California Water Code requires the State Department of Health Services to establish statewide reclamation criteria for each type of use of reclaimed water, where such use involves the protection of public health. These regulations, contained in Title 22 of the California Code of Regulations, are the basic regulations governing the use of reclaimed water in California. The existing Title 22 regulations were adopted in 1978; proposed new regulations are currently under review.

The Regional Board implements the provisions of Title 22 by issuing Water Reclamation Requirements (WRRs) to the producer, the user of reclaimed water, or both. WRRs are issued for a variety of uses, including, but not limited to, landscape irrigation, fodder crop irrigation, duck ponds, freeway landscape irrigation, groundwater recharge, injection for seawater intrusion barrier, use in toilet flushing, and other non-domestic uses in high rises or nonresidential buildings.

The Santa Ana Regional Board currently has 76 WRRs issued to producers and/or users of reclaimed water. Some of the producers have received or applied for Master Reclamation Requirements (MRR) which would allow the producer to distribute their reclaimed water to various users without additional user reclamation requirements for the Regional Board. With the water shortage in southern California, there is an increase in the demand for reclaimed water. With sophisticated treatment technologies, reclaimed water could be used for almost anything, except domestic supply.

The detailed requirements, conditions, prohibitions, and other specifications included within NPDES, WDR, and WRR permits are developed on the basis of existing state and federal law, Sate Board Water Quality Control Plans and Policies (*e.g.*, the Ocean Plan), and the contents of this Basin Plan. The foremost consideration is the protection of water quality. The quality of the discharge specified through the limitations in the permit is calculated to allow the water quality objectives of the receiving water to be met or maintained, and in some cases, the water quality is improved.

When the limits included in the NPDES, WDR or WRR permits cannot be met because treatment facilities are inadequate or the water supply is inferior, these permits may include a time schedule for compliance and interim discharger a period of time to make the necessary changes and/or improvements.

Waste Discharge Prohibitions

The Regional Board also implements this Basin Plan through the adoption of waste discharge prohibitions as necessary. Section 13243 of the California Water Code states that a Regional Board may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted. The Regional Board implements this section of the Water Code by adopting waste discharge requirements issued to individual discharges and in the Basin Plan itself.

A. General Prohibitions

1. Unless regulated by appropriate waste discharge requirements, the discharge to surface or groundwaters of waste which contains the following substances is prohibited.

    - Toxic substances or materials;
    - Pesticides;
    - PCB's (polychlorinated biphenyls);
    - Mercury or mercury compounds;
    - Radioactive substances or material in excess of levels allowed by the California Code of Regulations.

   This list is not necessarily all-inclusive. The Regional Board may modify or update this list as appropriate.

B. Prohibitions Applying to Inland Surface Waters

1. The discharge of untreated sewage to any surface water stream, natural or man-made, or to any drainage system intended to convey stormwater runoff to surface water streams is prohibited.

2. The discharge of treated sewage to streams, lakes or reservoirs, or to tributaries thereto, which are designated **MUN** and which are used as a domestic water supply is prohibited unless approved by the California Department of Health Services. The discharge of treated sewage to waterbodies which are excepted from **MUN** (see Table 3-1) but which are tributary to waters designated **MUN** and are used as a domestic water supply is prohibited unless the discharge of treated sewage to the drinking water supply is precluded or approved by the California Department of Health Services.

C. Prohibitions Applying to Oceans, Bays, and Estuary Waters

   The prohibitions included in the California Ocean Plan, Thermal Plan, and the Policy for Enclosed Bays and Estuaries are hereby incorporated into this plan by reference.

D. Prohibitions Applying to Groundwaters

1. The discharge of the following materials to the ground, other than into impervious facilities, is prohibited:

    a. Acids or caustics, whether neutralized or not, and

    b. Excessively saline wastes (electrical conductivity greater than 2000 µmhos/cm)

2., Prohibitions Applying to Subsurface Leaching Percolation Systems

In 1973, the Regional Board adopted prohibitions on the use of subsurface disposal systems in the following areas:

a. Grand Terrace (CSA 70, Improvement Zone H);

b. Yucaipa-Calimesa (Yucaipa Valley County Water District);

c. Lytle Creek above 2600 foot elevation;

d. Mill Creek above 2600 foot elevation; and

e. Bear Valley (includes Baldwin Lake Drainage Area);

In 1982, the Regional Board adopted prohibition on the use of subsurface disposal systems for the Homeland-Green Acres area and Romoland areas (exact boundaries for these prohibition areas are shown on maps on file at the Regional Board office).

The Board adopted specified dates for final compliance with these prohibitions. In some cases, these dated have been revised via Basin Plan amendments. The compliance dates are as follows:

a. Grand Terrace: February 1, 1988

b. Yucaipa-Calimesa – February 1, 1988

c. Lytle Creek – July 1, 1978

d. Mill Creek - July 1, 1978

e. Bear Valley – July 1, 1980

f. Homeland-Green Acres – July 1, 1990

g. Romoland – July 1, 1990

Exemptions from these prohibitions may be granted if certain criteria are satisfied (exemption criteria are described in Appendix V).

Quail Valley On-site Septic Tank-Subsurface Disposal System Prohibition
(Amended by Resolution No. R8-2006-0024, October 3, 2006)

On October 3, 2006, the Board adopted a Basin Plan amendment prohibiting the use of septic tank-subsurface disposal systems in the Quail Valley area of Riverside County in accordance with the following:

Effective Date: August 20, 2007

(1) The discharge of waste from new on-site septic tank-subsurface disposal systems in the Quail Valley area of Riverside County is prohibited, if a sewer system is available to serve the lot. Except as provided in (2) below, the discharge of waste from existing on-site septic tank-subsurface disposal systems in the Quail Valley area of Riverside County is prohibited, if a sewer system is available to serve the lot.

(2) All existing septic tank-subsurface disposal systems shall connect to the sewer designed to serve the lot within one year of sewer installation. New septic tank-subsurface disposal systems shall not be permitted in Quail Valley if a sewer system is available to serve the lot.

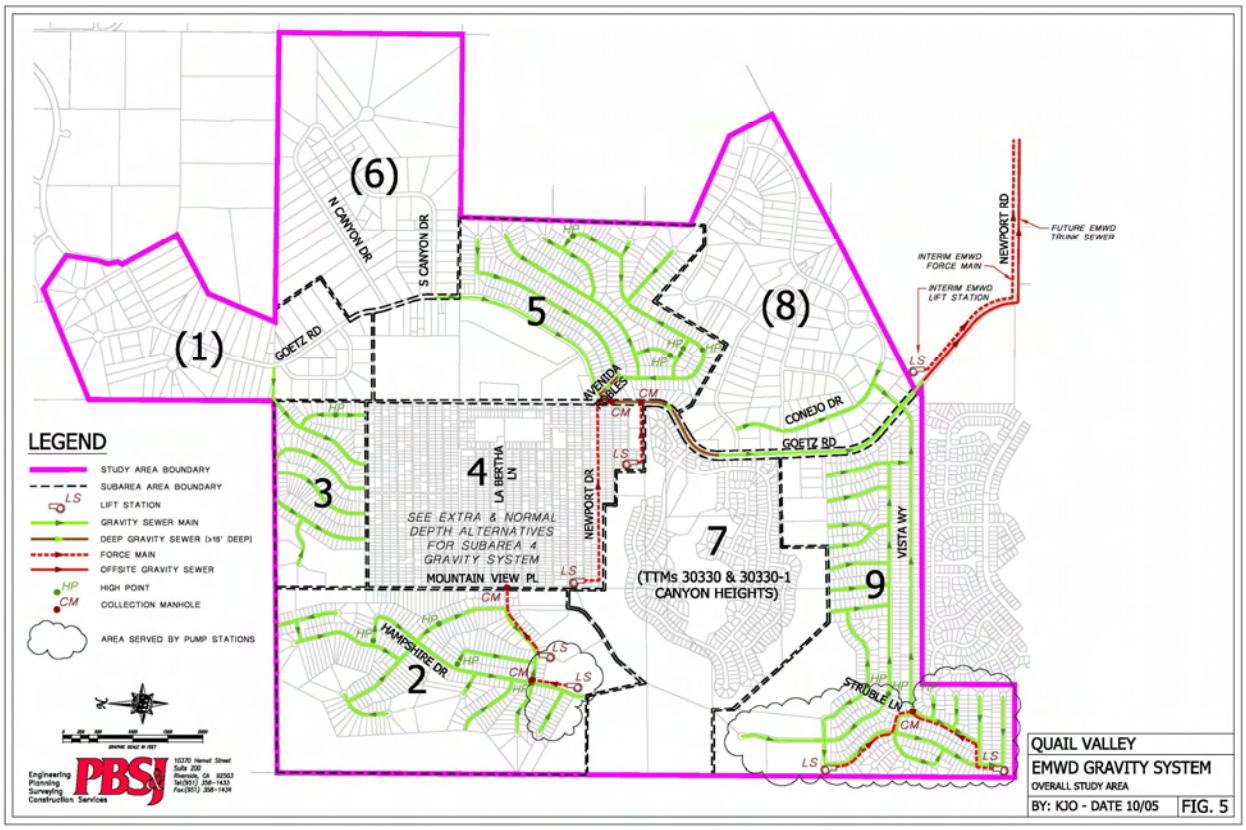
(3) This prohibition applies to all areas within Quail Valley as depicted on a detailed map maintained in the Regional Board office (Quail Valley Septic Tank Prohibition Boundary Map). A copy of the boundary map is attached as Attachment "A".

(4) Upon the effective date of this prohibition, new septic systems in Quail Valley (see Attachment "A") shall not be permitted, except as follows:

(a) For areas in Quail Valley other than areas 4 and 9, new systems may be permitted, provided the Regional Board finds that the sewering agency proposes, and is on schedule, to provide sewer service for areas 4 and 9 within five years of the effective date of this amendment, and if the lot proposed for a septic system meets all Board and Riverside County requirements.

(b) If the Board finds that the sewering agency cannot meet the schedule identified in 1(4)(a), above, but that design of the project proceeds nonetheless, then, upon completion of the sewer system design, new systems may be permitted in areas other than 4 and 9, if all Board and Riverside County requirements are met.

ATTACHMENT "A": MAP OF QUAIL VALLEY PROHIBITION AREA
FIGURE 5-1a



Water Quality Certification (Section 401)

In addition to the issuance of NPDES permits or waste discharge requirements, the Regional Board acts to protect the quality of surface waters through water quality certification as specified in Section 401 of the Clean Water Act (33 USC 466 *et seq.*). Section 401 requires that any person applying for a federal permit or license for an activity which may result in a discharge of pollutants into waters of the nation must obtain a state water quality certification verifying that the activity complies with the state's water quality standards.

No license or permit can be granted until certification required by Section 401 has been obtained or waived. Further, no license or permit can be granted if certification has been denied by the state. Similarly, coastal states must concur that the activity meets the requirements of the Coastal Zone Management Program of the state or waive their right to concur by not taking action by a specified time.

The following permits or licenses require 401 Certification:

- NPDES permits issued by US EPA under Section 402 of the CWA (33 USC 466 *et seq.*);
- CWA Section 404 (33 USC 466 *et seq.*) permits issued by the U.S. Army Corps of Engineers;
- Permits issued under Sections 9 and 10 of the Rivers and Harbors Act (33 USC 466 *et seq.*) (for activities which may affect navigation);
- Licenses for hydroelectric power plants issued by the Federal Energy Regulatory Commission under the Federal Power Act; and
- Licenses issued by the Nuclear Regulatory Commission.

To date, the Regional Board's water quality certification activities have focused on applications for permits for the discharge of dredged or fill material to surface waters. These permits are issued by the U.S. Army Corps of Engineers (Section 404 permits) subject to any conditions imposed by the Regional Board.

The Section 404 program is administered at the federal level by the U.S. Army Corps of Engineers and the US EPA. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service have important advisory roles. The U.S. Army Corps of Engineers has the primary responsibility for the permit program and is authorized, after notice and opportunity for a public hearing, to issue permits of the discharge of dredged or fill material. US EPA developed the regulations under which permits may be granted. States may assume the responsibility for implementation of the 404 permit program, however, California has not done so.

The Regional Board evaluates the projects for which 404 permits are requested and determines whether to deny water quality certification, issue a certification with conditions, or waive the certification. A certification is usually denied if the activity violates any water

quality standard; if the activity may violate standards, a conditional certification is given; when the activity does not violate any standard, a 401 waiver may be given.

Presently, the executive Director of the State Board issues all water quality certifications in accordance with recommendations from the Regional Board.

MONITORING AND ENFORCEMENT

Waste discharge requirements issued by the Regional Board include requirements for monitoring of discharges. In some cases, the receiving waters must be monitored by the dischargers. The results of the "self monitoring" programs are reported to the Board and are used to determine compliance with the waste discharge requirements (see Chapter 6).

The California Water Code provides the Regional Board with a number of enforcement remedies for violations of requirements. Enforcement actions include Time Schedules, Cease and Desist Orders, Cleanup and Abatement Orders, and the issuance of Administrative Civil Liability Complaints.

Time Schedules

When a discharge is taking place or threatening to occur that will cause a violation of a Regional Board requirement, a discharger may be required to submit a detailed compliance plan and schedule (California Water Code Section 13300). These schedules may also be required when the waste collection treatment or disposal facility of a discharger are approaching capacity. Time Schedules are adopted by the Regional Board after a public hearing or by the Executive Officer pursuant to his or her authority.

Cease and Desist Order

If discharge prohibitions or requirements of the State Board or Regional Board are violated or threatened to be violated, the Regional Board may adopt a Cease and Desist order (California Water Code Section 13301) requiring the discharger to comply in accordance with a time schedule, or if the violation is threatened, to take appropriate remedial or preventive action. Cease and Desist orders may restrict or prohibit the volume, type or concentration of waste added to community sewer systems, if existing or threatened violations of waste discharge requirements occur. Cease and Desist Orders may specify interim time schedules as well as limitations that must be complied with until full compliance is achieved. Cease and Desist orders are adopted by the Regional Board after a public hearing.

Cleanup and Abatement Order

The Board may order *any* person who has discharged, is discharging or is threatening to discharge wastes that will result in a violation of waste discharge requirements or other order or prohibition of the State Board or Regional Board, to cleanup and abate the effects

of the discharge or to take appropriate remedial action (California Water Code 13304). The Regional Board has delegated issuance of these orders to its Executive Officer; Cleanup and Abatement orders do not require Board action, but are often brought before the Regional Board for consideration.

Administrative Civil Liability

The Regional Board may also issue Administrative Civil Liability complaints (ACLs) to those who intentionally or negligently violate enforcement orders of the Board, or who intentionally or negligently discharge wastes in violation of any order, prohibition or requirement of the Board where the discharge causes conditions of pollution or nuisance (California Water Code Sections 13350). ACLs may also be issued in cases where a person fails to submit reports requested by the Board (California Water Code Sections 13261 and13268) or when a person discharges waste without first having filed the appropriate Report of Waste Discharge (ROWD) (California Water Code Section113265). ACLs may be issued pursuant to California Water Code Section 13385 for violations of any Regional Board prohibition or requirement implementing specified sections of the Clean Water Act, or any requirement in an approved pretreatment program, without showing intent or negligence. Issuance of ACLs is delegated to the Board's Executive Officer, but, all administrative civil liability settlements must be affirmed by the Board. Amounts of administrative civil liability that the Board can impose range up to $10,000 per day of violation. The Water Code also provides that a superior court may impose civil liability assessments in substantially higher amounts. The Regional Board may conduct a hearing if a discharger contests the imposition of the Administrative Civil Liability.

The Water Code provides that a Regional Board may request the State Attorney General to petition a superior court to enforce orders and complaints issued by the Board. The Regional Board may also request that the Attorney General seek injunctive relief in specific situations, such as violations of Cease and Desist orders or discharges which cause or threaten to cause a nuisance or pollution that could result in a public health emergency (California Water Code Sections 13331 and 13340).

TOTAL DISSOLVED SOLIDS AND NITROGEN MANAGEMENT (Amended by Resolution No. R8-2004-0001, December 22, 2004)

1. Background

The 1975 and 1983 Basin Plans for the Santa Ana River Basin reported that the most serious problem in the basin was the build up of dissolve minerals, or salts, in the ground and surface waters. Sampling and computer modeling of groundwaters showed that the levels of dissolved minerals, generally expressed as total dissolved solids (TDS) or total filterable residue (TFR), were exceeding water quality objectives or would do so in the future unless appropriate controls were implemented. Nitrogen levels in the Santa Ana River, largely in the form of nitrate, were likewise projected to exceed objectives. As was discussed in Chapter 4, high levels of TDS and nitrate adversely affect the beneficial uses

of ground and surface waters. The mineralization of the Region's waters, and its impact on beneficial uses, remains a significant problem.

Each use of water adds an increment of dissolved minerals. Significant increments of salts are added by municipal and industrial use, and the reuse and recycling of the wastewater generated as it moves from the hydrologically higher areas of the Region to the ocean. Wastewater and recycled water percolated into groundwater management zones is typically pumped and reused a number of times before reaching the ocean, resulting in increased salt concentrations. The concentration of dissolved minerals can also be increased by evaporation or evapotranspiration. One of the principal causes of the mineralization problem in the Region is historic irrigated agriculture, particularly citrus, which in the past required large applications of water to land, causing large losses by evaporation and evapotranspiration. TDS and nitrate concentrations are increased both by this reduction in the total volume of return water and by the direct application of these salts in fertilizers. Dairy operations, which began in the Region in the 1950's and continue today, also contribute large amounts of salts to the basin.

The implementation chapters of the 1975 and 1983 Basin Plans focused on recommended plans to address the mineralization problem. The 1975 Plan initiated a total watershed approach to salt source control. Both Plans called for controls on salt loadings from all water uses including residential, commercial, industrial and agricultural (including dairies). The plans included: measures to improve water supply quality, including the import of high quality water from the State Water Project; waste discharge regulatory strategies (e.g., wasteload allocations, allowable mineral increments for uses of water); and recharge projects and other remedial programs to correct problems in specific areas. These Plans also carefully limited reclamation activities and the recycling of wastewaters into the local groundwater basins.

These salt management plans were developed using a complex set of groundwater computer models and programs, known collectively as the Basin Planning Procedure (BPP).

The modeling work focused on the upper Santa Ana Basin and, to a lesser extent, on the San Jacinto Basin, where the BPP was less developed and refined. The constituent modeled in those Plans was TDS.

For the salt management plan specified initially in the 1995 Basin Plan, when the Plan was adopted and approved in 1994 and 1995, modeling was conducted with the BPP for both the upper Santa Ana and San Jacinto Basins. However, most of the attention was again directed to the upper Santa Ana Basin, for which significant improvements to the BPP were made under a joint effort by the Santa Ana Watershed Project Authority, the Santa Ana River Dischargers Association, the Metropolitan Water District of Southern California, and the Regional Board. The most significant change to the BPP was the addition of a nitrogen modeling component so that projections of the nitrogen (nitrate) quality of groundwaters could be made, in addition to TDS. This enabled the development of a management plan for nitrogen, as well as TDS.

The BPP has not been used to model groundwater quality conditions in the lower Santa Ana Basin. For that Basin, the Regional Board's TDS and nitrogen management plans have relied, in large part, on the control of the quality of the Santa Ana River flows, which are a major source of recharge in the Basin. As discussed in Chapter 4, most of the baseflow (80-90%) is composed of treated sewage effluent; it also includes nonpoint source inputs and rising groundwater. Baseflow generally provides 70% or more of the water recharged in the Orange County Management Zone. In rare wet years, baseflow accounts for a smaller, but still significant, percentage (40%) of the recharge on an annual basis. Therefore, to protect Orange County groundwater, it is essential to control the quality of baseflow. To do so, baseflow TDS and nitrogen objectives are specified in this Plan for Reach 3 of the River. Wasteload allocations have been established and periodically revised to meet those and other Santa Ana River objectives.

For the 1983 Basin Plan, QUAL-II, a surface water model developed initially by the US EPA, was calibrated for the Santa Ana River and used to make detailed projections of River quality (TDS and nitrogen) and flow. The model was used to develop wasteload allocations for TDS and nitrogen discharges to the River that were approved as part of that Plan. (Wasteload allocations are discussed in detail in Section III of this Chapter). An updated version of the model, QUAL-2e, was used to revise these wasteload allocations, which were included as part of the initial salt management plan in the 1995 Basin Plan. The models were used to integrate the quantity and quality of inputs to the River from various sources, including the headwaters, municipal wastewater treatment plant discharges, and rising groundwater, based on the water supply and wastewater management plans used in the BPP. Data on rising groundwater quality and quantity were provided to the QUAL-II/2e models by the BPP. As with the BPP, the QUAL-II/2e model projections were used to identify water quality problems and to assess the effectiveness of changes in TDS and nitrogen management strategies.

II. Update of the Total Dissolved Solids/Nitrogen Management Plan

The studies conducted to update the TDS/Nitrogen Management Plans in the 1983 and 1995 Basin Plans were not designed to validate or revise the TDS or nitrate-nitrogen objectives for groundwater. Rather, the focus of the studies was to determine how best to meet those established objectives. During public hearings to consider adoption of the 1995 Basin Plan, a number of water supply and wastewater agencies in the region commented that the TDS and nitrate-nitrogen objectives for groundwater should be reviewed, considering the estimated cost of complying with them (several billion dollars). In response, the Regional Board identified the review of these objectives as a high Basin Plan triennial review priority, and stakeholders throughout the Region agreed to provide sufficient resources to perform the necessary studies. In December 1995, these agencies, under the auspices of the Santa Ana Watershed Project Authority (SAWPA), formed the Nitrogen/Total Dissolved Solids (TDS) Task Force (Task Force) to undertake a watershed-wide study (Nitrogen/TDS Study) to review the groundwater objectives and the TDS/Nitrogen Management Plan in the Basin Plan as a whole. SAWPA managed the study, and Risk Sciences and Wildermuth Environmental, Inc., served as project consultants. Major tasks included review of the groundwater

subbasin boundaries, development of recommendations for revised boundaries, development of appropriate TDS and nitrate-nitrogen objectives for the subbasins (management zones), and update of the TDS and TIN wasteload allocations to ensure compliance with both the established objectives for the Santa Ana River and tributaries and the recommended groundwater objectives. A complete list of all tasks completed in Phases 1A & 1B and 2A & 2B is included in the Appendix. The Task Force effort resulted in substantive proposed changes to the Basin Plan, including new groundwater management zones (Chapter 3) and new nitrate-nitrogen and TDS objectives for the management zones (Chapter 4). These changes necessitated the update and revision of the TDS/Nitrogen Management Plan, which is described below.

The Task Force studies, including the technical methods employed, are documented in a series of reports (Ref. 1-5). The Task Force studies differed from prior efforts to review the TDS and nitrogen management plans in that the BPP was not utilized. A revised model approach, not involving use of the QUAL-2e model, was used to update the wasteload allocations for the Santa Ana River. The Task Force concluded that the BPP no longer remained a viable tool for water quality planning purposes, and also concluded that the development of a new model was beyond the scope and financial capabilities of the Task Force. The efficacy of modeling to formulate and update salt management plans in this Region has been well demonstrated; in the future, priority should be given to the development of a new model that would assist with future Basin Plan reviews.

III. TDS/Nitrogen Management Plan

TDS and nitrogen management in this Region involves both regulatory actions by the Regional Board and actions by other agencies to control and remediate salt problems. Regulatory actions include the adoption of appropriate TDS and nitrogen limitations in requirements issued for waste disposal and municipal wastewater recycling, and the adoption of waste discharge prohibitions. These regulatory steps are described earlier in this Chapter. Actions by other agencies include projects to improve water supply quality and the construction of groundwater desalters and brine lines to remove highly saline wastes from the watershed. The following sections discuss these programs in greater detail.

A. Water Supply Quality

Water supply quality has a direct affect on the quality of discharges from municipal wastewater treatment plants, discrete industrial discharges, returns to groundwater from homes using septic tank systems, returns from irrigation of landscaping in sewered and unsewered areas, and returns to groundwater from commercial irrigated agriculture. Water supply quality is an important determinant of the extent to which wastewater can be reused and recycled without resulting in adverse impacts on affected receiving waters. This is particularly true for TDS, since it is a conservative constituent, less likely than nitrogen to undergo transformation and loss as wastewater is discharged or recycled, and typically more difficult than nitrogen to treat and remove.

Water supplies cannot be directly regulated by the Regional Board; however, limitations in waste discharge requirements, including NPDES permits, may necessitate efforts to improve source water quality. These efforts may include drilling new wells, implementing alternative blending strategies, importing higher quality water when it is available, and constructing desalters to create or augment water supplies.

Imported water supplies are an important part of salt management strategies in the region from both a quantity and quality standpoint. Imported water is needed by many agencies to supplement local sources and satisfy ever-increasing demands. The import of high quality State Water Project water, with a long-term TDS average less than 300 mg/L, is particularly essential. The use of State Water Project water allows maximum reuse of water supplies without aggravating the mineralization problem. It is also used for recharge and replenishment to improve the quality of local water supply sources, which might otherwise be unusable. Thus, the use of high quality State Water Project water in the Region has water supply benefits that extend far beyond the actual quantity imported.

In some cases, the TDS quality of water supplies in a wastewater treatment service area may make it infeasible for the discharger to comply with TDS limits specified in waste discharge requirements. In other cases, the discharger may add chemicals that enable compliance with certain discharge limitations, but also result in TDS concentrations in excess of waste discharge requirements. The Board recognizes these problems and incorporates provisions in waste discharge requirements to address them. These and other aspects of the Board's regulatory program are described next.

B. TDS and Nitrogen Regulation

As required by the Water Code (Section 13263), the Regional Board must assure that its regulatory actions implement the Basin Plan. Waste discharge requirements must specify limitations that, when met, will assure that water quality objectives will be achieved. Where the quality of the water receiving the discharge is better than the established objectives, the Board must assure that the discharge is consistent with the state's antidegradation policy (SWRCB Resolution No. 68-16). The Regional Board must also separately consider beneficial uses, and where necessary to protect those uses, specify limitations more stringent than those required to meet established water quality objectives. Of course, these obligations apply not only to TDS and nitrogen but also to other constituents that may adversely affect water quality and/or beneficial uses.

As indicated previously, the Regional Board's regulatory program includes the adoption of waste discharge prohibitions. The Board has established prohibitions on discharges of excessively saline wastes and, in certain areas, on discharges from subsurface disposal systems (see "Waste Discharge Prohibitions," above). The Board has also adopted other requirements pertaining to the use of subsurface disposal system use, both to assure public health protection and to address TDS and nitrogen-related concerns. These include the Regional Board's "Guidelines for Sewage Disposal from Land Developments" [Ref. 6], which are hereby incorporated by reference, and the

minimum lot size requirements for septic system use (see Nonpoint Source section of this Chapter).

However, the principal TDS and nitrogen regulatory tool employed by the Regional Board is the issuance of appropriate discharge requirements, in conformance with the legal requirements identified above. Several important aspects of this permitting program warrant additional discussion:

1. Salt assimilative capacity
2. Mineral increments
3. Nitrogen loss coefficients
4. TDS and nitrogen wasteload allocations
5. Wastewater reclamation
6. Special considerations – subsurface disposal systems

1. Salt Assimilative Capacity

Some waters in the Region have assimilative capacity for additions of TDS and/or nitrogen; that is, wastewaters with higher TDS/nitrogen concentrations than the receiving waters are diluted sufficiently by natural processes, including rainfall or recharge, such that the TDS and nitrogen objectives of the receiving waters are met. The amount of assimilative capacity, if any, varies depending on the individual characteristics of the waterbody in question.

The adoption of new groundwater management zone boundaries (Chapter 3) and new TDS and nitrate-nitrogen objectives for these management zones (Chapter 4), pursuant to the work of the Nitrogen/TDS Task Force, necessitated the re-evaluation of the assimilative capacity findings initially incorporated in the 1995 Basin Plan. To conduct this assessment, the Nitrogen-TDS study consultant calculated current ambient TDS and nitrate-nitrogen water quality using the same methods and protocols as were used in the calculation of historical ambient quality (see Chapter 4). The analysis focused on representing current water quality as a 20-year average for the period from 1978 through 1997. [Ref. 1]. For each management zone, current TDS and nitrate-nitrogen water quality were compared to water quality objectives (historical water quality)[1]. Assimilative capacity was also assessed relative to the “maximum benefit” objectives established for certain management zones. If the current quality of a management zone is the same as or poorer than the specified water quality objectives, then that management zone does not have assimilative capacity. If the current quality is better than the specified water quality objectives, then that management zone has assimilative capacity. The difference between the objectives and current quality is the amount of assimilative capacity available.

[1] As noted in Chapter 4, ammonia-nitrogen and nitrite-nitrogen data were also included in the analysis, where available. This occurred for a very limited number of cases and ammonia-nitrogen and nitrite-nitrogen concentrations were insignificant.

Tables 5-3 and 5-4 show the water quality objectives and the current ambient quality for TDS and nitrate-nitrogen, respectively, for each management zone. These tables also list the TDS and nitrate-nitrogen assimilative capacity of the management zones, if any. Of the thirty-seven (37) management zones, twenty-seven (27) lack assimilative capacity for TDS, and thirty (30) lack assimilative capacity for nitrate-nitrogen (this assumes the "maximum benefit" objectives are in effect). There are five (5) management zones for which there were insufficient data to calculate TDS and/or nitrate-nitrogen water quality objectives and, therefore, assimilative capacity. For regulatory purposes, these 5 management zones are assumed to have no assimilative capacity. Dischargers to these management zones may demonstrate that assimilative capacity for TDS and/or nitrate-nitrogen is available. If the Regional Board approves this demonstration, then the discharger would be regulated accordingly.

As indicated in Table 5-3, it will be assumed for most regulatory purposes that there is no assimilative capacity for TDS in the Orange County groundwater management zone. The 20 mg/L of management zone-wide TDS assimilative capacity calculated for this zone will be allocated to discharges resulting from groundwater remediation and other legacy contaminant removal projects implemented within the Orange County Management Zone.

Tables 5-3 and 5-4 show the assimilative capacity available in management zones for which "maximum benefit" objectives have been specified. As described in Chapter 4 and later in this Chapter, the application of these objectives is contingent on the implementation of certain projects and programs by specific dischargers as part of their maximum benefit demonstrations. Assimilative capacity created by these projects/programs will be allocated to the party(-ies) responsible for implementing them.

Chapter 3 delineates the Prado Basin Management Zone, and Chapter 4 identifies the applicable TDS and nitrogen objectives for this Zone (the objectives for the surface waters that flow in this Zone). No assimilative capacity exists in this zone.

These assimilative capacity findings are significant from a regulatory perspective. If there is assimilative capacity in the receiving waters for TDS, nitrogen or other constituents, a waste discharge may be of poorer quality than the objectives for those constituents for the receiving waters, as long as the discharge does not cause violation of the objectives and provided that antidegradation requirements are met. However, if there is no assimilative capacity in the receiving waters, such as the management zones identified in Tables 5-3 and 5-4, the numerical limits in the discharge requirements cannot exceed the receiving water objectives or the degradation process would be accelerated.[2] This rule was expressed clearly by the State Water Resources

[2] A discharger may conduct analyses to demonstrate that discharges at levels higher than the objectives would not cause or contribute to the violation of the established objectives. See, for example, the discussion of wasteload allocations for discharges to the Santa Ana River and its tributaries (Section III. B. 4.) If the Regional Board approves this demonstration, then the discharger would be regulated accordingly.

Control Board in a decision regarding the appropriate TDS discharge limitations for the Rancho Caballero Mobilehome park located in the Santa Ana Region (Order No. 73-4, the so called “Rancho Caballero decision”) [Ref. 7]. However, this rule is not meant to restrict overlying agricultural irrigation, or similar activities, such as landscape irrigation. Even in management zones without assimilative capacity, groundwater may be pumped, used for agricultural purposes in the area and returned to the management zone from which it originated.

In regulating waste discharges to waters with assimilative capacity, the Regional Board will proceed as follows. (see also Section III.B.6., Special Considerations – Subsurface Disposal Systems).

If a discharger proposes to discharge wastes that are at or below (i.e., better than) the current ambient TDS and/or nitrogen water quality, then the discharge will not be expected to result in the lowering of water quality, and no antidegradation analysis will be required. TDS and nitrogen objectives are expected to be met. Such discharges clearly implement the Basin Plan and the Board can permit them to proceed. Of course, other pertinent requirements, such as those of the California Environmental Quality Act (CEQA) must also be satisfied. For groundwater management zones, current ambient quality is as defined in Table 5-3 and Table 5-4, or as these Tables may be revised (through the Basin Plan amendment process) pursuant to the detailed monitoring program to be conducted by dischargers in the watershed (see Section V., Salt Management Plan – Monitoring Program Requirements).

If a discharger proposes to discharge wastes that exceed the current ambient TDS and/or nitrogen quality, then the Board will require the discharger to conduct an appropriate antidegradation analysis. The purpose of this analysis will be to demonstrate whether and to what extent the proposed discharge would result in a lowering of ambient water quality in affected receiving waters. That is, to what extent, if any, would the discharge use available assimilative capacity. If the discharger demonstrates that no lowering of water quality would occur, then antidegradation requirements are met, water quality objectives will be achieved, and the Regional Board can permit such discharges to proceed. If the analysis indicates that a lowering of current ambient water quality would occur, other than on a minor or temporally or spatially limited basis, then the discharger must demonstrate that: (1) beneficial uses would continue to be protected and the established water quality objectives would be met; and (2) that the resultant water quality would be consistent with maximum benefit to the people of California; and, (3) that best practicable treatment or control has been implemented. Best practical treatment or control means levels that can be achieved using best efforts and reasonable control methods. For affected receiving waters, the discharger must estimate the amount of assimilative capacity that would be used by the discharger. The Regional Board would employ its discretion in determining the amount of assimilative capacity that would be allocated to the discharger. Rather than allocating assimilative capacity, the Regional Board may require the discharger to mitigate or offset discharges that would result in the lowering of water quality.

Again, discharges to waters without assimilative capacity for TDS and/or nitrogen must be held to the objectives of the affected receiving waters (with the caveat identified in footnote 3 previous page). In some cases, compliance with management zone TDS objectives for discharges to waters without assimilative capacity may be difficult to achieve. Poor quality water supplies or the need to add certain salts during the treatment process to achieve compliance with other discharge limitations (e.g., addition of ferric chloride) could render compliance with strict TDS limits very difficult. The Regional Board addresses such situations by providing dischargers with the opportunity to participate in TDS offset programs, such as the use of desalters, in lieu of compliance with numerical TDS limits. These offset provisions are incorporated into waste discharge requirements. Provided that the discharger takes all reasonable steps to improve the quality of the waters influent to the treatment facility (such as through source control or improved water supplies), and provided that chemical additions are minimized, the discharger can proceed with an acceptable program to offset the effects of TDS discharges in excess of the permit limits.

Similarly, compliance with the nitrate-nitrogen objectives for groundwaters specified in this Plan would be difficult in many cases. Offset provision may apply to nitrogen discharges as well.

An alternative that dischargers might pursue in these circumstances is revision of the TDS or nitrogen objectives, through the Basin Plan amendment process. Consideration of less stringent objectives would necessitate comprehensive antidegradation review, including the demonstrations that beneficial uses would be protected and that water quality consistent with maximum benefit to the people of the State would be maintained. As discussed in Chapter 4 and later in this Chapter, a number of dischargers have pursued this “maximum benefit objective” approach, leading to the inclusion of “maximum benefit” objectives and implementation strategies in this Basin Plan. Discharges to areas where the “maximum benefit” objectives apply will be regulated in conformance with these implementation strategies. Any assimilative capacity created by the maximum benefit programs will be allocated to the parties responsible for implementing them.

Table 5-3
Total Dissolved Solids (TDS) Assimilative Capacity Findings

Management Zone	Water Quality Objective (mg/L)	Current Ambient (mg/L)	Assimilative Capacity (mg/L)
UPPER SANTA ANA RIVER BASIN			
Beaumont – "max benefit" [3]	330	290	40
Beaumont – "antideg"	230	290	None
Bunker Hill A	310	350	None
Bunker Hill B	330	260	70
Colton	410	430	None
Chino North – "max benefit"	420	300	120
Chino 1 – "antideg"	280	310	None
Chino 2 – "antideg"	250	300	None
Chino 3 – "antideg"	260	280	None
Chino South	680	720	None
Chino East	730	760	None
Cucamonga – "max benefit" [3]	380	260	120
Cucamonga – "anti-deg"	210	260	None
Lytle	260	240	20
Rialto	230	230	None
San Timoteo – "max benefit" [3]	400	300	100
San Timoteo – "anti-deg"	300	300	None
Yucaipa – "max benefit" [3]	370	330	40
Yucaipa – "antideg"	320	330	None
MIDDLE SANTA ANA RIVER BASIN			
Arlington	980	--[1]	None
Bedford	--[1]	--[1]	None
Coldwater	380	380	None
Elsinore	480	480	None
Lee Lake	--[1]	--[1]	None
Riverside A	560	440	120
Riverside B	290	320	None
Riverside C	680	760	None
Riverside D	810	--[1]	None
Riverside E	720	720	None
Riverside F	660	580	80
Temescal	770	780	None
Warm Springs	--[1]	--[1]	None
SAN JACINTO RIVER BASINS			
Canyon	230	220	10
Hemet South	730	1030	None
Lakeview – Hemet North	520	830	None
Menifee	1020	3360	None
Perris North	570	750	None
Perris South	1260	3190	None
San Jacinto Lower	520	730	None
San Jacinto Upper	320	370	None
LOWER SANTA ANA RIVER BASINS			
Irvine	910	910	None
La Habra	--[1]	--[1]	None
Orange County[2]	580	560	None[2]
Santiago	--[1]	--[1]	None

[1] Not enough data to estimate TDS concentrations; management zone is presumed to have no assimilative capacity. If assimilative capacity is demonstrated by an existing or proposed discharger, that discharge would be regulated accordingly.

[2] For the purposes of regulating discharges other than those associated with projects implemented within the Orange County Management Zone to facilitate remediation projects and/or to address legacy contamination, no assimilative capacity is assumed to exist

.[3] Assimilative capacity created by "maximum benefit" objectives is allocated solely to agency(ies) responsible for "maximum benefit" implementation (see Section VI.).

Table 5-4
Nitrate Nitrogen (NO_3-N) Assimilative Capacity Findings

Management Zone	Water Quality Objective (mg/L)	Current Ambient (mg/L)	Assimilative Capacity (mg/L)
UPPER SANTA ANA RIVER BASINS			
Beaumont – "max benefit" [3]	5.0	2.6	2.4
Beaumont – "antideg"	1.5	2.6	None
Bunker Hill A	2.7	4.5	None
Bunker Hill B	7.3	5.5	1.8
Colton	2.7	2.9	None
Chino North – "max benefit" [3]	5.0	7.4	None
Chino 1 – "antideg"	5.0	8.4	None
Chino 2 – "antideg"	2.9	7.2	None
Chino 3 – "antideg"	3.5	6.3	None
Chino South	4.2	8.8	None
Chino East	10	29.1	None
Cucamonga – "max benefit" [3]	5.0	4.4	0.6
Cucamonga – "anti-deg"	2.4	4.4	None
Lytle	1.5	2.8	None
Rialto	2.0	2.7	None
San Timoteo – "max benefit" [3]	5.0	2.9	2.1
San Timoteo – "anti-deg"	2.7	2.9	None
Yucaipa – "max benefit" [3]	5.0	5.2	None
Yucaipa – "antideg"	4.2	5.2	None
MIDDLE SANTA ANA RIVER BASINS			
Arlington	10.0	--[1]	None
Bedford	--[1]	--[1]	None
Coldwater	1.5	2.6	None
Elsinore	1.0	2.6	None
Lee Lake	--[1]	--[1]	None
Riverside A	6.2	4.4	1.8
Riverside B	7.6	8.0	None
Riverside C	8.3	15.5	None
Riverside D	10.0	--[1]	None
Riverside E	10.0	14.8	None
Riverside F	9.5	9.5	None
Temescal	10.0	13.2	None
Warm Springs	--[1]	--[1]	None
SAN JACINTO RIVER BASINS			
Canyon	2.5	1.6	0.9
Hemet South	4.1	5.2	None
Lakeview – Hemet North	1.8	2.7	None
Menifee	2.8	5.4	None
Perris North	5.2	4.7	0.5
Perris South	2.5	4.9	None
San Jacinto Lower	1.0	1.9	None
San Jacinto Upper	1.4	1.9	None
LOWER SANTA ANA RIVER BASINS			
Irvine	5.9	7.4	None
La Habra	--[1]	--[1]	None
Orange County	3.4	3.4	None
Santiago	--[1]	--[1]	None

[1] Not enough data to estimate nitrate nitrogen concentrations
[2] Assimilative capacity created by "maximum benefit" objectives is allocated solely to agency(ies) responsible for "maximum benefit" implementation (see Section VI.).

2. Mineral Increments

The fundamental philosophy of TDS management plans in Santa Ana Region Basin Plans to date has been to allow a reasonable use of the water, to treat the wastewater generated appropriately, and to allow it to flow downstream (or to lower groundwater basins) for reuse. "Reasonable use" is defined in terms of appropriate mineral increments that can be applied to water supply quality in setting discharge limitations.

The Department of Water Resources has recommended values for the maximum use incremental additions of specific ions that should be allowed through use, based on detailed study of water supplies and wastewater quality in the Region [Ref. 8]. Their recommendations are as follows:

Sodium	70 mg/L
Sulfate	40 mg/L
Chloride	65 mg/L
TDS	250 mg/L
Total Hardness	30 mg/L

These mineral increments were incorporated into the 1983 Basin Plan. They will be incorporated into waste discharge requirements when appropriate and necessary.

3. Nitrogen Loss Coefficients

The Regional Board's regulatory program has long recognized that some nitrogen transformation and loss can occur when wastewater is discharged to surface waters or reused for landscape irrigation. For example, the Total Inorganic Nitrogen (TIN) wasteload allocation adopted for the Santa Ana River in 1991 included unidentified nitrogen losses in the surface flows in Reach 3 of the River. Waste discharge requirements have allowed for nitrogen losses due to plant uptake when recycled water is used for irrigation.

In contrast, nitrogen has been considered a conservative constituent in the subsurface, not subject to significant transformation or loss, and no such losses have been identified or assumed for regulatory purposes.

One of the tasks included in the Nitrogen/TDS Task Force studies leading to the 2004 update of the N/TDS Management Plan was the consideration of subsurface transformation and loss. One objective of this task was to determine whether dischargers might be required to incur costs for additional treatment to meet the new groundwater management zone nitrate-nitrogen objectives (Chapter 4), or whether natural, subsurface nitrogen losses could achieve any requisite reductions. The second objective was to develop a nitrogen loss coefficient that could be used with certainty to develop appropriate limits for nitrogen discharges throughout the Region.

To meet these objectives, the Nitrogen/TDS study consultant, Wildermuth

Environmental, Inc. (WEI), evaluated specific recharge operations (e.g., the Orange County Water District recharge ponds overlying the Orange County Forebay), wastewater treatment wetlands (e.g., the Hidden Valley Wildlife Area, operated by the City of Riverside) and Santa Ana River recharge losses (for the Santa Ana River, water quality in reaches where recharge is occurring ("losing" reaches) was compared with local well data). In each case, WEI evaluated long-term (1954 to 1997) nitrogen surface water quality data and compared those values to long-term nitrogen data for adjacent wells.

Based on this evaluation, a range of nitrogen loss coefficients was identified. [Ref. 1] In light of this variability, the N/TDS Task Force recommended that a conservative approach to be taken in establishing a loss coefficient. The Task Force recommended that a region-wide default nitrogen loss of 25% be applied to all discharges that affect groundwater in the Region. The Task Force also recommended that confirmatory, follow-up monitoring be required when a discharger requested and was granted the application of a nitrogen loss coefficient greater than 25%, based on site-specific data submitted by that discharger.

The City of Riverside also presented data to the Task Force regarding nitrogen transformation and losses associated with wetlands. These data support a nitrogen loss coefficient of 50%, rather than 25%, for the lower portions of Reach 3 of the Santa Ana River that overlie the Chino South groundwater management zone. [Ref. 9]. In fact, the data indicate that nitrogen losses from wetlands in this part of Reach 3 can be greater than 90%. However, given the limited database, the Task Force again recommended a conservative approach, i.e., 50% in this area, with confirmatory monitoring.

The 25% and, where appropriate, 50% nitrogen loss coefficients will be used in developing nitrogen discharge limits. These coefficients will be applied to discharges that affect groundwater management zones with and without assimilative capacity.

For discharges to groundwater management zones with assimilative capacity, the TIN discharge limitation would be calculated as follows:

$$\text{TIN Discharge Limit (mg/)} = \frac{\text{management zone nitrate-nitrogen current ambient water quality}}{(1 - \text{nitrogen loss coefficient})}$$

The Regional Board will employ its discretion in specifying a higher TIN limit that would allocate some of the available assimilative capacity.

For discharges to groundwater management zones without assimilative capacity, the TIN discharge limitation would be calculated as follows:

$$\text{TIN Discharge Limit (mg/)} = \text{management zone nitrate-nitrogen water} \frac{\text{ambient water quality}}{(1 - \text{nitrogen loss coefficient})}$$

These coefficients do not apply to discharges specifically addressed by the TIN wasteload allocation, described in the next section, since surface and subsurface nitrogen losses were accounted for in developing this allocation.

4. TDS and Nitrogen Wasteload Allocations for the Santa Ana River

Wasteload allocations for regulating discharges of TDS and total inorganic nitrogen (TIN) to the Santa Ana River, and thence to groundwater management zones recharged by the River, are an important component of salt management for the Santa Ana Basin. As described earlier, the Santa Ana River is a significant source of recharge to groundwater management zones underlying the River and, downstream, to the Orange County groundwater basin. The quality of the River thus has a significant effect on the quality of the Region's groundwater, which is used by more than 5 million people. Control of River quality is appropriately one of the Regional Board's highest priorities.

Sampling and modeling analyses conducted in the 1980's and early 1990's indicated that the TDS and total nitrogen water quality objectives for the Santa Ana River were being violated or were in danger of being violated. Under the Clean Water Act (Section 303(d)(1)(c); 33 USC 466 *et seq.*), violations of water quality objectives for surface waters must be addressed by the calculation of the maximum wasteloads that can be discharged to achieve and maintain compliance. Accordingly, TDS and nitrogen wasteload allocations were developed and included in the 1983 Basin Plan. The nitrogen wasteload allocation was updated in 1991; an updated TDS wasteload allocated was included in the 1995 Basin Plan when it was adopted and approved in 1994/1995.

The wasteload allocations distribute a share of the total TDS and TIN wasteloads to each of the discharges to the River or its tributaries. The allocations are implemented principally through TDS and nitrogen limits in waste discharge requirements issued to municipal wastewater treatment facilities (Publicly Owned Treatment Works or POTWs) that discharge to the River, either directly or indirectly[3]. Nonpoint source inputs of TDS and nitrogen to the River are also considered in the development of these wasteload allocations. Controls on these inputs are more difficult to identify and achieve and may be addressed through the areawide stormwater permits issued to the counties by the Regional Board or through other programs. For example, the Orange County Water District has constructed and operates more than 400 acres of wetlands ponds in the

[3] With some exceptions that may result from groundwater pumping practices, the ground and surface waters in the upper Santa Ana Basin (upstream of Prado Dam) eventually enter the Santa Ana River and flow through Prado Dam. Discharges to these waters will therefore eventually affect the quality of the River and must be regulated so as to protect both the immediate receiving waters and other affected waters, including the River.

Prado Basin Management Zone to remove nitrogen in flows diverted from, and then returned to, the Santa Ana River.

Because of the implementation of these wasteload allocations, the Orange County Water District wetlands and other measures, the TDS and TIN water quality objectives for the Santa Ana River at Prado Dam are no longer being violated, as shown by annual sampling of the River at the Dam by Regional Board staff [Ref. 10A]. However, as part of the Nitrogen/TDS Task Force studies to update the TDS/nitrogen management plan for the Santa Ana Basin, a review of the TDS and TIN wasteload allocations initially contained in this Basin Plan was conducted. In part, this review was necessary in light of the new groundwater management zones and TDS and nitrate-nitrogen objectives for those zones recommended by the N/TDS Task Force (and now incorporated in Chapters 3 and 4). The wasteload allocations were evaluated and revised to ensure that the POTW discharges would assure compliance with established surface water objectives and would not cause or contribute to violation of the groundwater management zone objectives. The Task Force members also recognized that this evaluation was necessary to determine the economic implications of assuring conformance with the new management zone objectives. Economics is one of the factors that must be considered when establishing new objectives (Water Code Section 13241).

WEI performed the wasteload allocation analysis for both TDS and TIN [Ref. 3, 5], In contrast to previous wasteload allocation work, the QUAL-2e model was not used for this analysis. Further, the Basin Planning Procedure (BPP) was not used to provide relevant groundwater data. Instead, WEI developed a projection tool using a surface water flow/quality model and a continuous-flow stirred-tank reactor (CFSTR) model for TDS and TIN. The surface water Waste Load Allocation Model (WLAM) is organized into two major components – RUNOFF (RU) and ROUTER (RO). RU computes runoff from the land surface and RO routes the runoff estimated with RU through the drainage system in the upper Santa Ana watershed. Both the RU and RO models contain hydrologic, hydraulic and water quality components.

To ensure that all hydrologic regimes were taken into account, hydrologic and land use data from 1950 through 1999 were used in the analysis. The analysis took into account the TDS and nitrogen quality of wastewater discharges, precipitation and overland runoff, instream flows and groundwater. Off-stream and in-stream percolation rates, rising groundwater quantity and quality, and the 25% and 50% nitrogen loss coefficients described in the preceding section were also factored into the analysis. The purpose of the modeling exercise was to estimate discharge, TDS and TIN concentrations in the Santa Ana River and tributaries and in stream bed recharge. These data were then compared to relevant surface and groundwater quality objectives to determine whether changes in TDS and TIN regulation were necessary.

Discharges from POTWs to the Santa Ana River or its tributaries were the focus of the analysis. POTW discharges to percolation ponds were not considered. The wasteload allocation analysis assumed, correctly, that these direct groundwater discharges will be

regulated pursuant to the management zone objectives, findings of assimilative capacity and nitrogen loss coefficients identified in Chapter 4 and earlier in this Chapter.

The surface waters evaluated included the Santa Ana River, Reaches 3 and 4, ChinoCreek, Cucamonga/Mill Creek and San Timoteo Creek. Management zones that are directly under the influence of these surface waters and that receive wastewater discharges were evaluated. These included the San Timoteo, Riverside A, Chino South, and Orange County Management Zones[4]. In addition, wastewater discharges to the Prado Basin Management Zone were also evaluated.

WEI performed three model evaluations in order to assess wasteload allocation scenarios through the year 2010. These included a "baseline plan" and two alternative plans ("2010-A" and "2010-B"). The baseline plan generally assumed the TDS and TIN limits and design flows for POTWs specified in waste discharge requirements as of 2001. These limits implemented the wasteload allocations specified in the 1995 Basin Plan when it was approved in 1995. A TDS limit of 550 mg/L was assumed for the Rapid Infiltration and Extraction Facility (RIX) and the analysis assumed a 540 mg/L TDS for the City of Beaumont. The baseline plan also assumed reclamation activities at the level specified in the 1995 Basin Plan, when it was approved. The purpose of the baseline plan assessment was to provide an accurate basis of comparison for the results of evaluation of the two alternative plans. For alternative 2010-A, it was generally assumed that year 2001 discharge effluent limits for TDS and TIN applied to POTW discharges, but projected year 2010 surface water discharge amounts were applied. TDS limits of 550 mg/L and 540 mg/L were again assumed for RIX and the City of Beaumont discharges. The same limited reclamation and reuse included in the baseline plan was assumed (see Table 5-7 in Section III.B.5.). For alternative 2010-B, POTW discharges were also generally limited to the 2001 TDS and TIN effluent limits (RIX was again held to 550 mg/L and Beaumont to 540 mg/L). However, in this case, large increases in wastewater recycling and reuse were assumed (Table 5-7), resulting in the reduced surface water discharges projected for 2010.

Analysis of the model results demonstrated that the TDS and nitrogen objectives of affected surface waters would be met and that water quality consistent with the groundwater management zone objectives would be achieved under both alternatives. It is likely that water supply and wastewater agencies will implement reclamation projects with volumes that are in the range of the two alternatives. The wasteload allocations would be protective throughout the range of surface water discharges identified. The year 2010 flow values are not intended as limits on POTW flows; rather, these flows were derived from population assumptions and agency estimates and are

[4] The City of Beaumont discharges to Coopers Creek in a subunit of the Beaumont Management Zone. However, for analytical and regulatory purposes, it is considered a discharge to the San Timoteo Management Zone since it enters that Management Zone essentially immediately. Recharge of wastewater discharges by YVWD and Beaumont in downgradient management zones that may be affected by surface water discharges (e.g., Bunker Hill B, Colton), is not expected to be significant. Therefore, these management zones were not evaluated as part of the wasteload allocation analysis.

used in the models for quality projections. Surface water discharges significantly different than those projected will necessitate additional model analyses to confirm the propriety of the allocations.

The wasteload allocations for TDS and TIN are specified in Table 5-5. Allocations based on the 2010-A and 2010-B alternatives are shown for both TDS and TIN to reflect the expected differences in surface water discharge flows that would result from variations in the amount of wastewater recycling actually accomplished in the Region. As shown in this Table, irrespective of these differences, the TDS and TIN allocations remain the same.

It is essential to point out that the wasteload allocations in Table 5-5 will be not be used to specify TDS and TIN effluent limitations for wastewater recycling (reuse for irrigation) and recharge by the listed POTWs, but will be applied only to the surface water discharges by these POTWs to the Santa Ana River and its tributaries. TDS and TIN limitations for wastewater recycling and recharge by these POTWs will be based on the water quality objectives for affected groundwater management zones or, where appropriate, surface waters. These limitations are likely to be different than the wasteload allocations specified in Table 5-5.

For most dischargers, the allocations specified in Table 5-5 are the same as those specified in the prior 1995 Basin Plan TDS and TIN wasteload allocations. However, for certain dischargers, two sets of TDS and TIN wasteload allocations are shown in Table 5-5. One set is based on the assumption that the “maximum benefit” objectives defined in Chapter 4 for the applicable groundwater management zones are in effect. The other set of wasteload allocations applies if maximum benefit is not demonstrated and the antidegradation objectives for these management zones are therefore in effect. Maximum benefit implementation is described in Section VI. of this Chapter.

In addition, in contrast to the prior wasteload allocations, a single wasteload allocation for TDS and TIN that would be applied on a flow-weighted average basis to all of the treatment plants operated by the Inland Empire Utilities Agency as a whole is specified. These allocations are based on the water quality objectives for Chino Creek, Reach 1B (550 mg/L TDS and 8 mg/L TIN), to which the IEUA discharges occur, directly or indirectly. As described in Section VI, IEUA proposes to implement a “maximum benefit” program to support the implementation of the “maximum benefit” TDS and nitrate-nitrogen objectives for the Chino North and Cucamonga Management Zones. Separate “maximum benefit” and “antidegradation” wasteload allocations are not necessary for IEUA, as they are for YVWD and Beaumont. This is because the IEUA wasteload allocations are based solely on the Chino Creek objectives and are not contingent on “maximum benefit” objectives or implementation. The IEUA surface water discharges do not affect the groundwater management zones for which “maximum benefit” objectives are to be implemented.

Finally, the TDS wasteload allocation for the RIX facility is less stringent (550 mg/L) than the prior wasteload allocation. The new allocation will assure beneficial use protection and

will not result in a significant lowering of water quality. As such, it is consistent with antidegradation requirements. Given this, the less stringent effluent limitation can be specified pursuant to the exception to the prohibition against backsliding established in the Clean Water Act, Section 303(d)(4)(a).

In most cases, the surface water discharges identified in Table 5-5 will affect or have the potential to affect groundwater management zones without assimilative capacity for TDS and/or nitrogen. As discussed earlier in this section, the lack of assimilative capacity normally dictates the application of the water quality objectives of the affected receiving waters as the appropriate waste discharge limitations. However, as shown in Table 5-5, the TIN and, in some cases, TDS wasteload allocations for these discharges exceed the objectives for these management zones. This is because the wasteload allocation analysis conducted by WEI demonstrated that POTW discharges at these higher-than-objective levels will not result in violations of the TDS and nitrate-nitrogen objectives of the affected management zones, or surface waters. Accordingly, these wasteload allocations will be used for surface water discharge regulatory purposes, rather than the underlying groundwater management zone objectives. If the extensive monitoring program to be conducted by the dischargers (see Salt Management Plan – Monitoring Program Requirements, below) indicates that this strategy is not effective, then this regulatory approach will be revisited and revised accordingly.

Table 5-5

Alternative Wasteload Allocations through 2010
based on "Maximum Benefit" or "Antidegradation" Water Quality[1]

Publicly Owned Treatment Works (POTW)	Alternative 2010A – Reclamation in 1995 Basin Plan			Alternative 2010B – Reclamation Plans Advocated by POTWs/others		
	Surface Water Discharge (MGD)	TDS (mg/L)	TIN (mg/L)	Surface Water Discharge (MGD)	TDS (mg/L)	TIN (mg/L)
Beaumont – "max benefit" [2]	2.3	490	6.0	1.0	490	6.0
Beaumont – "antideg" [2, 3]	2.3	320[3]	4.1[3]	1.0	320[3]	4.1[3]
YVWD – Wochholz – "max benefit"	5.7	540	6.0	0.0	540	6.0
YVWD – Wochholz – "antideg" [3]	5.7	320[3]	4.1[3]	0.0	320[3]	4.1[3]
Rialto	12.0	490	10.0	10.0	490	10.0
RIX	49.4	550	10.0	28.2	550	10.0
Riverside Regional WQCP	35.0	650	13.0	26.1	650	13.0
Western Riverside Co. WWTP	4.4	625	10.0	3.3	625	10.0
EMWD[4]	43	650	10.0	6.0	650	10.0
EVMWD – Lake Elsinore Regional	7.2	700	13.0	2.0	700	13.0
Lee Lake WRF	1.6	650	13.0	1.6	650	13.0
Corona WWTP # 1	3.6	700	10.0	2.0	700	10.0
Corona WWTP # 2	0.2	700	10.0	0.5	700	10.0
Corona WWTP # 3	2.0	700	10.0	0.5	700	10.0
IEUA Facilities [5]	80.0	550	8.0	37.4	550	8.0

1. "Antidegradation" wasteload allocation is the default allocation if the Regional Board determines that "maximum benefit" commitments are not being met.
2. Beaumont discharges to Coopers Creek, a tributary of San Timoteo Creek, Reach 4, it is a *de facto* discharge to San Timoteo Creek/San Timoteo Management Zone.
3. "Antidegradation" wasteload allocations for City of Beaumont and YVWD based on additional model analysis performed by WEI (WEI, October 2002).
4. EMWD discharges are expected to occur only during periods of wet weather.
5. IEUA facilities include the RP#1, Carbon Canyon WRP, RP#4 and RP#5; These facilities are to be regulated as a bubble (see text).

Ammonia

Total inorganic nitrogen is used for regulatory purposes in wasteload allocations and surface water discharge limits. It is the sum of nitrate, nitrite and ammonia. Ammonia dissociates under certain conditions to the toxic un-ionized form. Thus, nitrogen discharges to the Santa Ana River and other surface waters pose a threat to aquatic life and instream beneficial uses, as well as to the beneficial uses of affected groundwater.

Un-ionized ammonia objectives are specified in Chapter 4 of this Basin Plan for warmwater aquatic habitats, such as the Santa Ana River system. Table 5-6 specifies the ammonia limits necessary to achieve these objectives. These limits were derived using QUAL2E, the Colorado Ammonia Model, water quality data on the River and effluent quality.

The un-ionized ammonia objectives have not been approved by the United States Environmental Protection Agency (USEPA), which recommends that the objectives be reviewed and revised based on the Agency's revised national ammonia criteria. A review of the un-ionized ammonia objectives is included in the Regional Board's 2002 Triennial Review Priority List. Any revised objectives and revised ammonia effluent limits needed to achieve the revised objectives will be incorporated in future amendments to this Plan once the requisite review is completed.

Table 5-6
Effluent Limits for Total Ammonia Nitrogen[1]

Discharge Location	Effluent Limit - Total Ammonia Nitrogen[2] (mg/L)	
	Year 1995	Year 2000
San Timoteo Wash	5.0	4.5
Santa Ana River - Reach 4	5.0	4.5
Santa Ana River - Reach 3	5.0	5.0
Chino Creek	5.0	4.5
Mill Creek (Prado Area)	5.0	4.5
Temescal Creek	5.0	4.5
Other **WARM** designated waterbodies	Determined on a case-by-case basis	

[1] Total Ammonia Nitrogen Wasteload Allocation is specified in order to meet the site-specific Santa Ana River un-ionized ammonia objective (See Chapter 4).

[2] Total Ammonia Nitrogen = Un-ionized Ammonia Nitrogen (NH_3-N) Ammonium Nitrogen (NH_4^+-N).

5. Wastewater Reclamation

Reclamation of wastewater for reuse (recycled water) is an important feature of wastewater and water management for the Santa Ana Region. The California Legislature has declared the primary interest of the people of California in the development of facilities to recycle wastewater to supplement existing water supplies and to meet future water demands (Water Code Section 13510-13512). State policy (State Board Resolution No. 77-1) affirms this commitment to encourage recycled water use. However, because reclamation projects tend to add to the salt balance problem in the Region, they must be carefully planned and implemented. The significant benefits that result from such projects, include:

- The total water supply can be effectively increased, reducing the need for imports;
- Wastewater treatment costs can be reduced in some cases. Meeting the level of treatment required for discharge to surface waters may be more expensive than treating the effluent for use in irrigation;
- Stream flows can be established or enhanced, providing aquatic riparian habitat and allowing recreation and other beneficial uses of the stream;
- Downstream delivery commitments can often be met by discharges of appropriately treated wastewater.

Concerns related to wastewater reclamation projects include:

1. Mineral Quality Effects

The mineral quality of the receiving water (surface or groundwater) can be adversely affected. Each cycle of water use increases the salinity of the water. The amount of the increase depends on the type of use; normal domestic use generally adds 200-300mg/L of TDS to the initial concentration. Agricultural use generally doubles the salinity, while industrial uses most often degrade water quality to a level where it may be unsuitable for discharge. Therefore, it is important that the type of reclaimed wastewater use and the likely effects on water quality be evaluated carefully prior to initiating such reuse. Certain waters in the upper Santa Ana Basin do not have assimilative capacity to accept the additional salinity that would be expected to result from reclamation.

2. Public Health Effects

Municipal wastewaters contain significant concentrations of bacteria, viruses, and organics. These wastewaters must be treated extensively to remove pathogens before they can be reclaimed. Stable organics in reclaimed water are also cause for considerable concern. Chlorination of treated wastewater effluents can

produce chlorinated hydrocarbons, some of which are carcinogenic. For this reason, the California State Department of Health Services is concerned with proposals that would return a high proportion of treated wastewater effluent into domestic water supply aquifers. Adequate treatment and dilution of the wastewater is essential. The Department is developing guidelines for the purposed use of reclaimed wastewater for groundwater recharge.

Because of the high percentage of wastewater in river baseflow, the Santa Ana River Water Quality and Health (SARWQH) Study was initiated by OCWD in 1994 to evaluate the use of the Santa Ana River to recharge the Orange County groundwater basin. The goal of the SARWQH Study was to characterize the quality of the Santa Ana River water and the quality of the groundwater basin it recharges. The study included an examination of hydrogeology, microbiology, water chemistry, toxicology and public health. The results of the study indicate that current recharge practices using Santa Ana River water are protective of public health.

3. Land Use Considerations

One of the major problems facing the future of wastewater reclamation is a decrease in the total amount of agricultural land in the basin. As the population of the basin increases, commercial and residential developments eliminate agricultural land and the need for irrigation waters. Some reclaimed wastewater may be used for irrigating landscaping in the new developments, but the volume utilized will almost certainly be reduced.

4. The Prado Settlement

On October 18, 1963, the Orange County Water District filed a class action lawsuit against the water users in the upper Santa Ana Basin, seeking an adjudication of water rights against substantially all the water users in the area tributary to Prado Dam in the Santa Ana River watershed. As a result of the 1969 settlement of this case, the wastewater dischargers in the upper basin are required to provide 42,000 acre-feet at Prado Dam. This can consist of treated wastewater effluent or imported water as well as certain natural flows (*e.g.,* rising water); stormflows are not included. The amount of flow delivered is subject to adjustment based upon the TDS content of the water. Reclamation uses within the upper basin are thus limited to a degree by the need to ensure compliance with this settlement.

Wastewater is presently being reclaimed in the Santa Ana Watershed in a number of different ways:

1. Irrigation of Agricultural Land and Landscaping

Most of the direct reclamation of wastewater in the Region occurs as part of commercial agricultural and landscape irrigation, although this will change as recharge projects using recycled water are implemented (see below). This use is conducted under water reclamation requirements issued by the Regional Board, typically as part of Waste Discharge Requirements and NPDES permits. In the San Jacinto Watershed, most of the wastewater is reclaimed for agricultural uses.

2. Discharge to the Santa Ana River

Although it is not widely considered as such, discharges of treated wastewater to Reaches 3, 4 and 5 of the Santa Ana River constitute the largest single reclamation activity in the Region. These discharges make up as much as 95 percent of the river's dry weather flow and enhance the in-stream beneficial uses of the river throughout its 26-mile length (San Bernardino to Prado Dam). Essentially all of this water is recharged into the groundwater basin in Orange County

3. Groundwater Recharge by Percolation

This type of reclamation is common throughout the Region. Most wastewater treatment plants that do not discharge directly to the River discharge their effluent to percolation ponds. All of the treated wastewater in the upper Santa Ana Basin that is not directly reclaimed for commercial agricultural and landscape irrigation purposes, or discharged directly to the Santa Ana River, is returned to local or downstream groundwater management zones by percolation. In Orange County, reclaimed water is used for greenbelt and landscape irrigation, and injected into coastal aquifers to control sea water intrusion.

Significant additional reclamation activities are planned in the Region, as reflected in Table 5-7. The Chino Basin Watermaster, Inland Empire Utilities Agency, Yucaipa Valley Water District, the City of Beaumont and the San Timoteo Watershed Management Authority propose to implement extensive groundwater recharge projects using recycled water. To accommodate these projects and other water and wastewater management strategies, these agencies have made the requisite demonstrations necessary to support the "maximum benefit" TDS and nitrate-nitrogen water quality objectives specified in this Plan for certain groundwater management zones (see Chapter 4). The recharge projects will provide reliable sources of additional water supply needed to support expected development within the agencies' areas of jurisdiction. These agencies' "maximum benefit" programs are described in detail in Section VI. of this Chapter.

In Orange County, significant reclamation activities include the implementation of the Groundwater Replenishment System, a joint effort of the Orange County Water District and Orange County Sanitation District. Treated wastewater provided by the Sanitation District will receive extensive advanced treatment, including microfiltration, reverse osmosis, and disinfection using ultraviolet light and hydrogen peroxide. In the first phase of the project, approximately 70,000 acre-feet per year of highly treated recycled water will be produced and distributed to groundwater recharge facilities and to injection wells used to maintain a seawater intrusion barrier. The System will enhance both the quality and quantity of groundwater resources, the major source of water supply in the area. It will reduce the need for imported water and prevent, or at least delay, the need for an additional ocean outfall for disposal of the wastewater treated by the Sanitation District. Implementation of the GWR System will be phased**.** Operation of Phase 1 will begin in 2007. Future phases to expand the capacity of the GWR System are possible.

4. Dual Water Supply Systems

Given increasing demands for water supply but diminishing resources, there is great interest in using reclaimed water in office buildings and the like for flushing toilets and urinals. Clearly, the addition of this water supply source must be carefully planned and overseen to prevent public health problems. No dual systems have been implemented as yet in the upper basin; in Orange County, the Irvine Ranch Water District has implemented dual systems (a reclaimed water system in addition to a potable supply) in a number of office buildings in its service area, with the approval of the Department of Health Services and the Regional Board.

The Salt Management Plan draws a balance between the benefits and problems of reclamation by including carefully planned reclamation activities in the watershed. The Recommended Plan provides for reclamation within the upper basin, as shown in Table 5-7. All recycled water recharge projects will be regulated pursuant to the process identified in the discussion regarding assimilative capacity, and in accordance with the “maximum benefit” implementation strategies identified later in this Chapter (see section VI., Maximum Benefit Implementation Plans for Salt Management).

Recycled water used for landscape irrigation deserves special regulatory consideration. As discussed in the section on nitrogen loss coefficients, the Regional Board does not regulate nitrogen in recycled water used for landscape irrigation, recognizing the nitrogen losses that will occur as the result of plant uptake. The Nitrogen /TDS Task Force sponsored update of the TDS/Nitrogen Management Plan demonstrated that it is appropriate also to apply a 25 percent nitrogen loss coefficient to recycled water discharges applied to land to account for subsurface transformation and loss. Nitrogen losses due to plant uptake and subsurface transformation justify the Board’s regulatory approach. With respect to TDS, the

water quality effects of recycled water used for landscape irrigation will be evaluated on a case-by-case basis and regulated accordingly.

6. Special Considerations – Subsurface Disposal Systems

In addition to establishing prohibitions and minimum lot size requirements for the use of subsurface disposal systems for sanitary wastes, the Regional Board issues waste discharge requirements where necessary to assure the protection of water quality and public health. In most cases, these requirements have been issued for commercial and industrial facilities, including mobile home parks, RV parks and truck washing operations, where the volume of waste is high and/or there is the potential for the discharge of wastes other than domestic sewage. Waste discharge requirements for individual residential systems and low volume (less than 500 gallons per day) domestic waste discharges from industrial and commercial facilities have been largely waived, pursuant to the waiver provisions of the Water Code (see discussion of waivers in the "Implementation through Waste Discharge Requirements" section, above). These waivers are conditional and may be revoked by the Regional Board at any time.

The Board has included TDS limitations in these waste discharge requirements in order to assure that the discharges are consistent with the TDS objectives of the affected receiving waters. These limits are expressed as both a maximum value that is based on the TDS objective of the receiving water, and a value that allows a reasonable use increment of 250 mg/L TDS above water supply quality. The more restrictive of the two TDS limits controls the allowed quality of the discharges.

TDS and nitrogen contributions from domestic waste discharges to existing commercial, industrial and residential subsurface disposal systems are reflected in the determinations of current ambient ground water quality and assimilative capacity (see preceding section – B.1.) on salt assimilative capacity). These determinations were made as part of the N/TDS Task Force sponsored update of the TDS/nitrogen management plan in this Basin Plan. These contributions are expected to decline over time as these discharges are eliminated through the expansion of regional sewer systems.

Compliance with TDS limits by these facilities is particularly problematic, since these facilities typically have little or no control over the TDS quality of water supplied to them, unlike POTWs. Further, sewering of the discharges is often not an option, at least at the present time, although this is changing as rapid new development in many parts of the region continues to drive the expansion of sewer facilities. As systems expand, many of these discharges will be eliminated as they are connected to the sewers. Finally, the offset provisions that are applied to POTWs are unnecessary for existing residential commercial and industrial domestic waste discharges, given that they are addressed as part of the Regional Board's minimum

lot size program for subsurface disposal systems and through the updated TDS and nitrogen management plan in this Basin Plan as part of the overlying land-use considerations and ambient water quality determinations.

Taking these factors into consideration, the waste discharge requirements that have been issued and will be updated periodically for domestic waste discharges from these existing residential, commercial and industrial facilities will include TDS requirements that specify a maximum mineral increment of 250 mg/L TDS to the water supply quality. This will assure reasonable use and prevent the disposal of highly saline wastes. Existing facilities are defined as those for which waste discharge requirements have been issued, or that have been built as of December 23, 2004.

Table 5-7
Wastewater Reclamation

Subbasin (Management Zone) Receiving Reclaimed Water	Source	Amount AF/Y 2010-A[1]	Amount AF/Y 2010-B[2]
Beaumont MZ	Beaumont, City of	250	1,500
Yucaipa MZ	Yucaipa Valley Water District	--	6,400
Bunker Hill B MZ	San Bernardino, City of and Colton, City of	117	26,200
Colton MZ	Rialto, City of	200	
Chino North MZ	IEUA RP-1	1,200	48,000
Chino North MZ	IEUA RP-2A	2,470	
Chino North MZ	IEUA RP-4	3,300	
Chino North MZ	California Institute for Men	650	650
Chino North MZ	Upland Golf Course	31	31
Temescal MZ	Corona, City of	1,000	3,100
	TOTAL	**9,218**	**86,000**

[1] wastewater reclamation assumed in 2010-A is the same as that assumed in the 1995 Basin Plan when approved in 1994/1995 (also known as Table 5-7)

[2] wastewater reclamation assumed in 2010-B as identified by POTWs (see Ref. 3, 5).

V. Other Projects and Programs

In addition to the regulatory efforts of the Regional Board described in the preceding section, water and wastewater purveyors and other parties in the watershed have implemented, and propose to implement, facilities and programs designed to address salt problems in the groundwater of the Region. These include the construction of brine lines and groundwater desalters, implementation of programs to enhance the recharge of high quality stormwater and imported water, where available, and re-injection of recycled water to maintain salt water intrusion barriers in coastal areas. These projects and programs are motivated by the need to protect and augment water supplies, as well as to facilitate compliance with waste discharge requirements.

A. Brine Lines

There are two brine line systems in the Region, the Santa Ana Regional Interceptor (SARI) and the older Chino Basin Non-Reclaimable Line (NRL). These lines are used to transport brine wastes out of the basin for treatment and disposal to the ocean. They are a significant part of industrial waste management and essential for operation of desalters in the upper watersheds. The SARI Line was constructed and is owned by SAWPA. It is approximately 93 miles of 16 inch to 84 inch pipeline connected to the Orange County Sanitation District treatment facilities. SAWPA owns capacity rights in SARI downstream of Prado Dam. The line extends from the Orange County Line near Prado Dam northeast to the San Bernardino area. Recently, the SARI Line has been extended to serve the San Jacinto Watershed. SARI Reach 5 extends up the Temescal Canyon from the City of Corona to the Eastern Municipal Water District (EMWD) brine line terminus in the Lake Elsinore area. EMWD's Menifee Desalter and other high salinity discharges from EMWD and Western Municipal Water District now have access to the brine line.

The Chino Basin Non-Reclaimable Line (NRL) is connected to the Los Angeles County Sanitation District sewer system in the Pomona area. The NRL, which is owned and operated by Inland Empire Utilities Agency, exports non-reclaimable industrial wastes and brine from the Chino Basin. It extends eastward from the Los Angeles County Line to the City of Fontana. It was originally built to serve industries including the Kaiser Steel Company and Southern California Edison Power Plants.

B. Groundwater Desalters

The studies leading to the development of the TDS/Nitrogen management plan included in this Basin Plan when it was approved in 1995 demonstrated that it was not realistic to achieve compliance with all the nitrogen and TDS objectives for the groundwater subbasins then identified within the Region. Long-term historic land use practices, particularly agriculture, have left an enormous legacy of salts that are now

in the unsaturated soils overlying the groundwater subbasins (now, newly defined groundwater management zones). A significant amount of these salts will, over time, degrade groundwater quality. The programs of groundwater extraction, treatment, an replenlishment needed to completely address these historic salt loads were shown to far exceed the resources available to implement them.

While the boundaries of the groundwater management zones have been revised and new TDS and nitrate-nitrogen water quality objectives established, the salt legacy problem remains. The construction and operation of groundwater desalters to extract and treat poor quality groundwater continues to be an essential component of salt management in the Region. Such projects will be increasingly important to protect local water supplies and to provide supplemental, reliable sources of potable supplies.

A number of groundwater desalters have already been constructed, and more are planned. These facilities are described below.

1. Upper Santa Ana Basin

In the Upper Santa Ana Basin, the Santa Ana Watershed Project Authority constructed and operates the Arlington desalter. This desalter, with a capacity of about 7 MGD, treats water extracted from the Arlington Management Zone, which was heavily impacted by historic agricultural activities.

In the Chino Basin, the Chino Desalter Authority operates the Chino 1 desalter, which is planned for expansion from 8 MGD to 13 MGD capacity. Additional desalters and desalter capacity will be constructed as part of a “maximum benefit” proposal by the Chino Basin Watermaster and the Inland Empire Utilities Agency (see Section VI., Maximum Benefit Implementation Plans for Salt Management).

The City of Corona began operation of the Temescal desalter in late 2001. The desalter has a capacity of 10 MGD. The City is currently expanding the desalter by 5 MGD. It is expected to be operational in the early 2004. The product water is used to supplement current municipal supplies. The improved TDS quality of these supplies is an important part of the City’s efforts to assure compliance with waste discharge requirements.

In the San Timoteo Watershed areas, desalters will be implemented as necessary for the Yucaipa and Beaumont areas, as discussed in detail in Section VI., Maximum Benefit San Timoteo Watershed Salt Management Plan.

2. San Jacinto Watershed

EMWD operates the Menifee desalter, which has a capacity of about 3 MGD. Product water is added to the EMWD municipal supply system, and the waste brine is discharged to a non-reclaimable waste disposal system that is ultimately connected to the SAWPA SARI system. The desalter extracts groundwater from the Perris South and Menifee Management Zones, both of which are adversely affected by historic salt loads contributed largely by agricultural activities.

EMWD plans to construct a desalter with capacity of about 4.5 MGD to treat poor quality water extracted from the Perris South and Lakeview/Hemet North Management Zones. The purpose of this facility is to stop subsurface migration of poor quality groundwater from the Perris South Management Zone into the Lakeview/Hemet North Management Zone.

3. Orange County

The Tustin Nitrate Removal project, which began operation in 1996, added approximately 3,000 acre-feet of water annually to Tustin's domestic water supply. Treatment systems employing reverse osmosis and ion exchange are operating at two wells that had been shut down because of excessive nitrate concentrations. The Orange County Water District and Irvine Ranch Water District (IRWD) are moving forward with the Irvine Desalter, a dual-purpose regional groundwater remediation and water supply project located in the City of Irvine and its sphere of influence. The project consists of an extensive seven-well groundwater extraction and collection system, a treatment system, a five-mile brine disposal pipeline, a finished water delivery system, and ancillary facilities. While providing approximately 6,700 acre-feet per year to IRWD for potable supply, the desalter will extract and treat brackish groundwater and capture an overlapping regional plume of TCE-contaminated groundwater demonstrated to have originated from the U.S. Marine Corps Air Station-El Toro.

C. Recharge of Stormwater and/or Imported Water

The Orange County Water District, San Bernardino Valley Water Conservation District and other agencies in the Region operate extensive facilities designed to enhance the capture and recharge of high quality stormwater. More such facilities are planned as part of "maximum benefit" proposals by the Chino Basin Watermaster/Inland Empire Utilities Agency, Yucaipa Valley Water District, San Timoteo Watershed Management Authority and the City of Beaumont (Section VI., Maximum Benefit Implementation Plans for Salt Management). These proposals also include efforts to import and recharge high quality State Water Project water, when it is available. These activities increase both the quantity and quality of available groundwater resources.

D. Sea Water Intrusion Barriers

The Orange County Water District operates advanced facilities designed to provide significantly enhanced tertiary treatment of secondary treated municipal wastewater from the Orange County Sanitation District's (Sanitation District) Fountain Valley Reclamation Plant No. 1. The recycled water is injected into a series of wells located along Ellis Avenue in the City of Fountain Valley to maintain the Talbert Gap Seawater Intrusion Barrier. The treatment facility, currently known as Water Factory 21, will be supplanted by the Groundwater Replenishment System (GWRS) being constructed jointly by Orange County Water District and the Sanitation District (see preceding section on wastewater reclamation).

V. Salt Management Plan -- Monitoring Program Requirements

California Water Code Section 13242 specifies that Basin Plan implementation plans must contain a description of the monitoring and surveillance programs to be undertaken to determine compliance with water quality objectives. The adoption of new groundwater TDS and nitrate-nitrogen water quality objectives (Chapter 4) in response to the studies sponsored by the N/TDS Task Force triggered the need to develop and implement a new, watershed-wide nitrogen/TDS monitoring program. The Task Force provided additional impetus for this comprehensive monitoring program. The Task Force recommended that future review and update of the salt management plan, including findings of assimilative capacity, appropriate changes to the wasteload allocations, etc., should be based on real-time data obtained through a rigorous monitoring program, rather than on model projections. As discussed earlier (see Section II., Update of the Total Dissolved Solids/Nitrogen Management Plan), the Task Force concluded that the development of new, workable modeling tools to assist in this review was beyond the scope and financial capability of the Task Force.

The monitoring program must consist of both surface water and groundwater components. Some of these are already being implemented, including the annual sampling of the Santa Ana River, Reach 3 at Prado Dam by Regional Board staff (see Chapter 4 and below). Certain agencies have committed to conduct monitoring of specific water bodies as part of their "maximum benefit" proposals (see Section VI., Maximum Benefit Implementation Plans for Salt Management, below). The N/TDS Task Force members, and other parties as appropriate, will be required to propose a comprehensive monitoring program that would integrate these existing commitments with other monitoring recommendations. These parties will be required to implement this program upon approval by the Regional Board.

A. Surface Water Monitoring Program Requirements for TDS and Nitrogen

Implementation of a surface water monitoring program is needed to determine compliance with the nitrogen and TDS objectives of the Santa Ana River, and

thereby, the effectiveness of the wasteload allocations. It is also needed to provide data required to evaluate the effects of surface water discharges on affected groundwater management zones. In particular, data are needed to confirm the validity of the 50% nitrogen loss coefficient that will be applied in regulating discharges to that part of Reach 3 of the River that overlies the Chino South groundwater management zone (see Section III.B.3., Nitrogen loss coefficients).

As discussed in Chapter 4, the Basin Plan specifies baseflow TDS and total nitrogen objectives for Reach 3 of the River. For Reach 2, a TDS objective based on a five-year moving average of the annual TDS concentration is specified. Use of this moving average allows the effects of wet and dry years to be integrated over the five-year period and reflects the actual long-term quality of water recharged by Orange County Water District downstream of Prado Dam.

The Basin Plan specifies a monitoring program to determine compliance with the Reach 3 baseflow objectives at Prado Dam (see Chapter 4). As noted above, Regional Board staff conducts this program on an annual basis. Measurement of baseflow quality, rather than the quality of flows in Reach 2, has long been used to indicate the effects of recharge of Santa Ana River flows on Orange County groundwater. The efficacy of this approach was evaluated as part of the 2004 update of the TDS/nitrogen management plan in the Basin Plan. Insufficient data were available to draw a direct correlation between the long-term TDS and nitrogen quality of River flows at Prado Dam and that of affected Orange County groundwater. However, the conclusion drawn was that reliance on the Reach 3 baseflow objectives to protect Orange County groundwater, and the existing monitoring program designed to measure compliance, is adequate.

In addition to this baseflow sampling program and the surface water monitoring commitments associated with certain agencies' "maximum benefit" programs, the comprehensive monitoring program to be proposed and implemented by the Task Force members, and other agencies as appropriate, must include an evaluation of compliance with the TDS and nitrogen objectives for Reaches 2, 4 and 5 of the Santa Ana River. Compliance with the Reach 2 TDS objective can be determined by evaluation of data collected by the Santa Ana River Watermaster, Orange County Water District, the United States Geological Survey, and others.

Surface water monitoring program requirements for TDS and nitrogen are as follows:

1. No later than March 23, 2005, Orange County Water District, Inland Empire Utilities Agency, Chino Basin Watermaster, City of Riverside, City of Corona, Elsinore Valley Municipal Water District, Eastern Municipal Water District, City of Colton, City of San Bernardino Municipal Water Department, Jurupa Community Services District, Western Riverside County Regional Wastewater Authority, Lee Lake Water District, Yucaipa Valley Water District, City of Beaumont, the San Timoteo Watershed Management Authority and the City of Rialto shall submit to the Regional Board for approval, a proposed surface water TDS and nitrogen

monitoring program that will provide an evaluation of compliance with the TDS and nitrogen objectives for Reaches 2, 4 and 5 of the Santa Ana River.

In lieu of this coordinated monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group monitoring plan. Any such individual or group monitoring plan shall also be submitted no later than March 23, 2005.

2. By April 15th of each year, the Orange County Water District, Inland Empire Utilities Agency, City of Riverside, City of Corona, Elsinore Valley Municipal Water District, Eastern Municipal Water District, Lee Lake Water District, City of Colton, City of San Bernardino Municipal Water Department, Jurupa Community Services District, Western Riverside County Wastewater Agency, Yucaipa Valley Water District, City of Beaumont, the San Timoteo Watershed Management Authority and the City of Rialto, shall submit an annual report of Santa Ana River, Reach 2 , 4 and 5 water quality. Data evaluated shall include that collected by the Santa Ana River Watermaster, Orange County Water District, and the US Geologic Survey, at a minimum.

   In lieu of this coordinated annual report, one or more of the parties identified in the preceding paragraph may submit an individual or group annual report. Any such individual or group report shall also be submitted by April 15th of each year.

Additional surface water monitoring programs may be specified by the Regional Board depending upon watershed conditions, waste discharge specifications and/or any special studies related to TDS and nitrogen.

B. Groundwater Monitoring Program for TDS and Nitrogen

Implementation of a watershed-wide TDS/nitrogen groundwater monitoring program is necessary to assess current water quality, to determine whether TDS and nitrate-nitrogen water quality objectives for management zones are being met or exceeded, and to update assimilative capacity findings. Groundwater monitoring is also needed to fill data gaps for those management zones with insufficient data to calculate TDS and nitrate-nitrogen historical quality and current quality. Finally, groundwater monitoring is needed to assess the effects of POTW discharges to surface waters on affected groundwater. In particular, monitoring is needed to confirm the 50% nitrogen loss coefficient for discharges to that part of the Santa Ana River, Reach 3 that affect the Chino South Management Zone.

Groundwater monitoring requirements for TDS and nitrogen are as follows:

1. No later than June 23, 2005, Orange County Water District, Irvine Ranch Water District, Inland Empire Utilities Agency, Chino Basin Watermaster, City of Riverside, City of Corona, Elsinore Valley Municipal Water District, Eastern Municipal Water District, City of Colton, City of San Bernardino Municipal Water Department, City of

Redlands, Jurupa Community Services District, Western Riverside County Regional Wastewater Authority , Lee Lake Water District, Yucaipa Valley Water District, City of Beaumont, the San Timoteo Watershed Management Authority and the City of Rialto shall submit to the Regional Board for approval, a proposed watershed-wide TDS and nitrogen monitoring program that will provide data necessary to review and update the TDS/nitrogen management plan. Data to be collected and analyzed shall address, at a minimum: (1) determination of current ambient quality in groundwater management zones; (2) determination of compliance with TDS and nitrate-nitrogen objectives for the management zones; (3) evaluation of assimilative capacity findings for groundwater management zones; and (4) assessment of the effects of recharge of surface water POTW discharges on the quality of affected groundwater management zones. The determination of current ambient quality shall be accomplished using methodology consistent with that employed by the Nitrogen/TDS Task Force (20-year running averages) to develop the TDS and nitrogen water quality objectives included in this Basin Plan. [Ref. 1] The determination of current ambient groundwater quality throughout the watershed must be reported by July 1, 2005, and, at a minimum, every three years thereafter.

In lieu of this coordinated monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group monitoring plan. Any such individual or group monitoring plan shall also be due no later than June 23, 2005.

Details to be included in the proposed monitoring program shall include, but not be limited to, the following:

- Monitoring program goals
- responsible agencies
- groundwater water sampling locations
- surface water sampling locations (if appropriate)
- water quality parameters
- sampling frequency
- quality assurance/quality control
- database management
- data analysis and reporting

Within 30 days of Regional Board approval of the proposed monitoring plan, the monitoring plan must be implemented.

2. No later than June 23, 2005, the City of Colton, City of San Bernardino Municipal Water Department, City of Riverside, Jurupa Community Services District and the City of Rialto, shall submit to the Regional Board for approval, a monitoring program that will be utilized to confirm the 50% Santa Ana River, Reach 3 nitrogen loss coefficient.

In lieu of this coordinated monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group monitoring plan. Any such individual or group monitoring plan shall also be due no later than June 23, 2005.

Within 30 days of Regional Board approval of the monitoring plan, the monitoring program must be implemented.

Additional groundwater monitoring programs may be specified by the Regional Board depending upon watershed conditions, waste discharge specifications and/or any special studies related to TDS and nitrogen.

VI. Maximum Benefit Implementation Plans for Salt Management

As discussed in Chapter 4, with some limited exceptions, TDS and nitrate-nitrogen objectives for groundwater management zones in the Santa Ana Region were established to ensure that historical quality is maintained, pursuant to the State's antidegradation policy (State Board Resolution No. 68-16). However, alternative, less stringent "maximum benefit" objectives are also specified in Chapter 4 for certain groundwater management zones. These "maximum benefit" objectives, which would allow the lowering of water quality, were established based on demonstrations by the agencies recommending them that antidegradation requirements were satisfied. First, these agencies demonstrated that beneficial uses would continue to be protected. Second, these agencies showed that water quality consistent with maximum benefit to the people of the state would be maintained. Other factors, such as economics, the need to use recycled water, and the need to develop housing in the area were also taken into account in establishing the objectives (see Chapter 4).

The demonstrations of "maximum benefit" by these agencies are contingent on the implementation of specific projects and programs by the agencies. As discussed in Chapter 4, if these projects and programs are not implemented to the Regional Board's satisfaction, then the alternative "antidegradation" objectives apply to these waters for regulatory purposes.

This section identifies the specific commitments by the Chino Basin Watermaster and Inland Empire Utilities Agency, the Yucaipa Valley Water District, the City of Beaumont and the San Timoteo Water Management Authority to implement projects and programs to support the "maximum benefit" objectives established for groundwater management zones affected by their wastewater and water management practices.

A. Salt Management – Chino Basin and Cucamonga Basin

As shown in Chapter 4, both "antidegradation" and "maximum benefit" objectives for TDS and nitrate-nitrogen are specified in this Plan for certain parts of the Chino Basin and the Cucamonga groundwater Management Zone. The application of the "maximum benefit" objectives relies on the implementation by the Chino Basin Watermaster and the Inland Empire Utilities Agency of a specific program of projects

and requirements [Ref. 10B], which are an integral part of the Chino Basin Optimum Basin Management Program (OBMP) [Ref. 10C]. The OBMP was developed by the Watermaster under the supervision of the San Bernardino County Superior Court. The OBMP is a comprehensive, long-range water management plan for the Chino Basin as a whole, including the Chino North (or Chino 1, 2, and 3) and Cucamonga Management Zones. The OBMP includes the use of recycled water for basin recharge, initially in the Chino North Management Zone. Recycled water recharge in the Cucamonga Management Zone may be pursued in the future. The OBMP also includes the capture of increased quantities of high quality storm water runoff, recharge of imported water when its TDS concentrations are low, improvement of water supply by desalting poor quality groundwater, and enhanced wastewater pollutant source control programs. The OBMP maps a strategy that will provide for enhanced yield for the Chino Basin and seeks to provide reliable water supplies for development expected to occur within the Basin. The OBMP also includes the implementation of management activities that would result in the hydraulic isolation of Chino Basin groundwater from the Orange County Management Zone, thus insuring the protection of downstream beneficial uses and water quality.

Table 5-8a identifies the projects and requirements that must be implemented to demonstrate that water quality consistent with maximum benefit to the people of the state will be maintained. An implementation schedule is also specified. The Regional Board will revise IEUA's waste discharge requirements, issue appropriate permits to the Chino Basin Watermaster, and utilize the authority provided by Section 13267 of the Water Code as necessary to require that these commitments be met. It is assumed that maximum benefit is demonstrated, and that the "maximum benefit" TDS and nitrate-nitrogen objectives apply to the Chino North and Cucamonga Management Zones as long as the schedule is being met. If the Regional Board determines that the maximum benefit program is not being implemented effectively in accordance with the schedule shown in Table 5-8a, then maximum benefit is not demonstrated, and the "antidegradation" TDS and nitrate-nitrogen objectives for the Chino 1, 2, and 3 and Cucamonga Management Zones apply. In this situation, the Regional Board will require mitigation for TDS and nitrate-nitrogen discharges to these management zones that took place in excess of limits based on the "antidegradation" objectives.

Table 5-8a

Chino Basin Maximum Benefit Commitments

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
1. Surface Water Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005
b. Implement Monitoring Program	b. Within 30 days from date of Regional Board approval of monitoring plan
c. Quarterly data report submittal	c. April 15, July 15, October 15, January 15
d. Annual data report submittal	d. February 15th
2. Groundwater Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005
b. Implement Monitoring Program	b. Within 30 days from date of Regional Board approval of monitoring plan
c. Annual data report submittal	c. February 15th
3. Chino Desalters	
a. Chino 1 desalter expansion to 10 MGD	a. Prior to recharge of recycled water
b. Chino 2 desalter at 10 MGD design	b. Recharge of recycled water allowed once award of contract and notice to proceed issued for construction of desalter treatment plant
4. Future desalters plan and schedule submittal	October 1, 2005 Implement plan and schedule upon Regional Board approval
5. Recharge facilities (17) built and in operation	June 30, 2005
6. IEUA wastewater quality improvement plan and schedule submittal	60 days after agency-wide 12 month running average effluent TDS quality equals or exceeds 545 mg/L for 3 consecutive months or agency-wide 12 month running average TIN equals or exceeds 8 mg/L in any month. Implement plan and schedule upon approval by Regional Board.

Table 5-8a

Chino Basin Maximum Benefit Commitments (cont.)

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
7. Recycled water will be blended with other recharge sources so that the 5-year running average TDS and nitrate-nitrogen concentrations of water recharged are equal to or less than the "maximum benefit" water quality objectives for the affected Management Zone (Chino North or Cucamonga).	Compliance must be achieved by end of 5th year after initiation of recycled water recharge operations.
a. Submit a report that documents the location, amount of recharge, and TDS and nitrogen quality of stormwater recharge before the OBMP recharge improvements were constructed and what is projected to occur after the recharge improvements are completed	a. Prior to initiation of recycled water recharge
b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of CBW/IEUA enhanced recharge facilities.	b. Annually, by February 15th, after initiation of construction of basins/other facilities to support enhanced stormwater recharge.
8. Hydraulic Control Failure	
a. Plan and schedule to correct loss of hydraulic control	a. 60 days from Regional Board finding that hydraulic control is not being maintained
b. Achievement and maintenance of hydraulic control	b. In accordance with plan and schedule approved by Regional Board. The schedule shall assure that hydraulic control is achieved as soon as possible but no later than 180 days after loss of hydraulic control is identified.
c. Mitigation plan for temporary failure to achieve/maintain hydraulic control	c. By January 23, 2005. Implement plan upon Regional Board determination that hydraulic control is not being maintained.
9. Ambient groundwater quality determination	July 1, 2005 and every 3 years thereafter

Description of Chino Basin Watermaster and Inland Empire Utilities Agency Commitments

1. Surface Water Monitoring Program (Table 5-8a #1)

The Chino Basin Watermaster (Watermaster), in conjunction with staff of the Orange County Water District and Regional Board, has developed a proposed surface water monitoring program. By January 23, 2005 and prior to the discharge of recycled water to the Chino Basin, Watermaster shall submit the recommended surface water monitoring program to the Regional Board for approval. The monitoring program must be implemented within 30 days of Regional Board approval, and six months of data must be generated prior to the discharge of recycled water to the Chino Basin.

At a minimum, the surface water monitoring program shall include the collection of bi-weekly measurements of general minerals and nitrogen components at the locations listed in Table 5-8b. Data reports shall be submitted to the Regional Board Executive Officer by April 15, July 15, October 15, and January 15 each year. An annual report summarizing all data collected for the year and evaluating compliance with relevant surface water objectives shall be submitted by February 15th of each year.

2. Groundwater Monitoring Program (Table 5-8a, #2)

The purpose of the Groundwater Monitoring Program is to (1) identify potential impacts from implementation of the Chino Basin "maximum benefit" water quality objectives on water levels and water quality within the Chino Basin and in downgradient basins and (2) determine whether hydraulic control (see # 8, below) is being achieved and maintained. By January 23, 2005 and prior to the discharge of recycled water to the Chino Basin, Watermaster shall submit to the Regional Board for approval a proposed groundwater monitoring program to determine hydraulic control and ambient water quality in the Chino North and Cucamonga Management Zones. Within 30 days of Regional Board approval of the monitoring plan, the groundwater monitoring program must be implemented.

An annual report, including all raw data and summarizing the results of the approved groundwater monitoring program, shall be submitted to the Regional Board by February 15th of each year.

3. Chino 1 and Chino 2 Desalters (Table 5-8a, # 3)

Prior to the recharge of recycled water in the Chino Basin, the Chino 1 desalter must be expanded and in operation at a capacity of 10 million gallons per day (MGD). Also, contracts for the construction of the Chino 2 desalter treatment plant must be awarded and a notice to proceed with the construction must be given prior to recharge of recycled water.

4. Future Desalter Development (Table 5-8a, # 4)

No later than October 1, 2005, the schedule for implementation of the next 20 MGD of desalter capacity, pursuant to the Peace Agreement that implements the Chino Basin OBMP, and as required by the San Bernardino Superior Court, must be submitted to the Regional Board by the Chino Basin Watermaster. IEUA and/or the Chino Basin Watermaster and/or other responsible parties deemed acceptable by the Executive Officer, will initiate building of the next desalter when the 12-month running average effluent concentration (measured as an average for all IEUA wastewater treatment facilities) reaches 545 mg/L TDS for three consecutive months.

Table 5-8b

Surface Water Monitoring Sites for Monitoring of Surface Water and Groundwater Quality
Near the River to Determine the Presence and Source of Rising Groundwater

Site Name	Discharge	Owner	Type	Discharge Monitoring		Water Quality Monitoring		
				Frequency	Period	Frequency	Period	Analyses
11066460	Santa Ana Riv.	USGS	Total Discharge	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
11072100	Temescal Cr.	USGS	Total Discharge	Bi-weekly	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
11073495	Cucamonga Cr.	USGS	Total Discharge	Bi-weekly	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
11073440	Chino Cr.	USGS	Total Discharge	Bi-weekly	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
11074000	Santa Ana Riv.	USGS	Total Discharge	Bi-weekly	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
RWQCP Direct	Recycled Water	Riverside	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
RWQCP Hidden Valley	Recycled Water	Riverside	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
Corona RW	Recycled Water	Corona	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
RP1 Cucamonga	Recycled Water	IEUA	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
RP1 Prado	Recycled Water	IEUA	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
RP2	Recycled Water	IEUA	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
Carbon Canyon	Recycled Water	IEUA	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
RP5	Recycled Water	IEUA	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
WRCRWTP	Recycled Water	WR-JPA	Recycled Water	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-MWDXING	Santa Ana Riv.	OCWD	Total Discharge	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-HOLELK-01	Hole Lake	OCWD	Total Discharge	Bi-weekly	May-Sep	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-VANBUREN	Santa Ana Riv.	OCWD	Total Discharge	Bi-weekly	May-Sep	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-ETIWANDA-01	Santa Ana Riv.	OCWD	Total Discharge	Bi-weekly	May-Sep	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-HAMNER-01	Santa Ana Riv.	OCWD	Total Discharge	Bi-weekly	May-Sep	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-RIV.RD	Santa Ana Riv.	OCWD	Total Discharge	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-DIV-PRADOWTLNDS	Santa Ana Riv.	OCWD	Total Discharge	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
SAR-BELOWDAM-01	Santa Ana Riv.	OCWD	Total Discharge	Daily	Jan - Dec	Bi-weekly	Jan - Dec	Gen. Min. & Physical
CK-CHINO	Chino Cr.	OCWD	Total Discharge	Bi-weekly	May-Sep	Bi-weekly	Jan - Dec	Gen. Min. & Physical
CK-MILL	Cucamonga Cr.	OCWD	Total Discharge	Bi-weekly	May-Sep	Bi-weekly	Jan - Dec	Gen. Min. & Physical
CK-TEMESCAL	Temescal Cr.	OCWD	Total Discharge	Bi-weekly	May-Sep	Bi-weekly	Jan - Dec	Gen. Min. & Physical

(Source: Ref. 10B)

5. Recharge Facilities (Table 5-8a, # 5)

By June 30, 2005, or no later than one year from the start of discharge of recycled water, the 17 recharge facilities identified in the August 2001 Watermaster Recharge Master Plan and as updated by the Watermaster and IEUA, must be completed and operated to maximize the capture of storm water in the Chino Basin. The Watermaster has also committed to optimize the recharge of imported water in the Chino Basin based on the goal of maximizing recharge of State Project water when the TDS of that water is lowest.

The Watermaster proposal recognizes the importance and necessity of recharge of both storm water and imported water to meet the water supply demands on the Chino Basin. Recharge of high quality supplies to the Chino Basin is necessary to offset the quality effects of recycled water and to achieve an ambient water quality equal to or better than the "maximum benefit" TDS and nitrate-nitrogen water quality objectives.

6. IEUA Wastewater Effluent Quality (Table 5-8a, # 6)

Within 60 days after the IEUA 12-month running average effluent concentration (measured as an average for all IEUA wastewater treatment facilities) for TDS exceeds 545 mg/L for 3 consecutive months, or the 12-month running average total inorganic nitrogen (TIN) concentration (measured as an average for all IEUA wastewater treatment facilities) exceeds 8 mg/L in any month, the IEUA shall submit to the Regional Board a plan and time schedule for implementation of measures to insure that the12-month running average agency wastewater effluent quality does not exceed 550 mg/L and 8 mg/L for TDS and TIN, respectively. The Plan and schedule are to be implemented upon Regional Board approval.

7. Recycled Water Use (Table 5-8a, # 7)

The use and recharge of recycled water within the Chino Basin is a critical component of the Watermaster OBMP and is necessary to maximize the use of the water resources of the Chino Basin. The demonstration of maximum benefit, and the continued application of the "maximum benefit" TDS and nitrate-nitrogen water quality objectives, depends on the recharge to the Chino North Management Zone of 5-year annual average (running average) TDS and nitrogen concentrations of no more than 420 mg/L and 5 mg/L, respectively. If and when recycled water recharge in the Cucamonga Management Zone is pursued, the application of the "maximum benefit" objectives will depend on the recharge to that zone of 5-year running average TDS and nitrogen concentrations no greater than 380 mg/L and 5 mg/L, respectively. IEUA has committed to meeting these levels and recognizes that the maximum benefit objectives depend on achieving these 5-year running average concentrations.

Accordingly, the use of recycled water for groundwater recharge shall be limited to the amount that can be blended on a volume-weighted basis with other sources of

recharge to the management zone to achieve a 5-year running average concentration equal to or less than the "maximum benefit" TDS and nitrogen water quality objectives of the affected Management Zone (Chino North or Cucamonga). The 25% nitrogen loss coefficient will be applied to calculate recycled water nitrogen quality when determining the amount of recharge of other water sources that must be achieved to meet the 5-year running averages.

8. Hydraulic Control (Table 5-8a, # 8)

"Hydraulic Control" is defined as eliminating groundwater discharge from the Chino Basin to the Santa Ana River, or controlling the discharge to *de minimis* levels. The surface water and groundwater monitoring programs described above are intended to demonstrate whether hydraulic control is achieved and maintained. In the event that the Regional Board finds that hydraulic control is not being accomplished, the Watermaster shall submit to the Regional Board within 60 days of that finding a plan and time schedule to correct (within 180 days from the Regional Board approval of the plan and schedule) the failure to achieve and maintain hydraulic control.

By January 23, 2005, the Watermaster and IEUA shall prepare a proposed plan and schedule to mitigate temporary losses of hydraulic control. These agencies must implement this plan upon a determination by the Regional Board that hydraulic control is not being achieved or maintained.

9. Ambient Groundwater Quality Determination (Table 5-8a, # 9)

By July 1, 2005, and every three years thereafter, Watermaster shall submit a determination of ambient TDS and nitrate-nitrogen quality in the Chino North and Cucamonga Management Zones. This determination shall be accomplished using methodology consistent with the determinations (20-year running averages) used by the TDS/Nitrogen Task Force to develop the "antidegradation" TDS and nitrate-nitrogen water quality objectives for groundwaters subbasins within the Region. [Ref. 1].

<u>Implementation by Regional Board</u>

1. Revision of the Inland Empire Utilities Agency NPDES Permits

To implement the "maximum benefit" objectives, the Regional Board will revise the NPDES permits for IEUA wastewater discharges to reflect the commitments described above, as appropriate. This includes the following. TDS and TIN (includes nitrate-nitrogen) limits of 550 mg/L and 8 mg/L, respectively, will be specified as an agency-wide, volume weighted-average. The limits will be expressed as 12-month running averages. These limits implement the wasteload allocations for IEUA surface water discharges (see Table 5-5), and are not

contingent on the "maximum benefit" objectives or demonstration[5]. IEUA will be required to implement measures to improve effluent quality when the 12 month running average effluent concentration (measured as an average for all IEUA treatment facilities) exceeds 545 mg/L for 3 consecutive months, or when the 12-month running average total inorganic nitrogen concentration (also measured as an average for all IEUA treatment facilities) exceeds 8 mg/L in any month. The permits will require that recycled water used for recharge shall be limited to the amount that can be blended in the management zone with other water sources, such as stormwater or imported water, to achieve 5-year running average concentrations equal to or less than the "maximum benefit" TDS and nitrate-nitrogen objectives for the affected management zone (Chino North or Cucamonga). Recycled water recharge is not currently contemplated in other parts of the Chino Basin. Alternative TDS and nitrate-nitrogen limitations based on the "antidegradation" objectives will also be specified for recycled water recharge in the Chino 1, 2 and 3 and Cucamonga Management Zones. These limits will apply should the Regional Board find that maximum benefit is not demonstrated. If recharge projects are implemented elsewhere in the Chino Basin, TDS and TIN limits will be based on the TDS and nitrate-nitrogen objectives of the affected management zones.

The effluent limits for IEUA, which establish an upper limit on TDS and TIN concentrations of recycled water discharged in the basin, are a cornerstone of the maximum benefit demonstration. The cap on effluent TDS and TIN concentrations provides a controlling point for management of TDS and nitrogen water quality in the Chino Basin. The TDS in IEUA's effluent is expected to reach 550 mg/L before the groundwater in the Chino North Management Zone or the Cucamonga Management Zone reaches the "maximum benefit" objectives of 420 mg/L and 380 mg/L, respectively. The IEUA/Chino Basin Watermaster maximum benefit proposal commits to the initiation of construction of another Chino Basin desalter when the TDS in IEUA's effluent reaches 545 mg/L for three consecutive months. This desalter may be constructed by IEUA and/or Chino Basin Watermaster and/or other responsible parties deemed acceptable by the Executive Officer. Further, IEUA will immediately implement a salt management program to reduce the salts, including nitrogen, entering IEUA's wastewater treatment plants. This salt management program will include: 1) connection of new industries that have wastewater discharges with TDS greater than 550 mg/L to the brine line; 2) regulation of the use of new and existing water softeners to the extent allowed by law, with incentives provided for the removal of on-site regenerative water softeners and the use of exchange canisters or other off-site regenerative systems; 3) connection of existing domestic system industries with high TDS waste discharges to the brine lines; 4) percolation of State Water Project water into the Chino Basin when that water is low in TDS; and 5) development of a plan for sewering areas presently served by septic

[5] Surface water discharges by IEUA do not affect the groundwater management zones for which "maximum benefit" objectives are specified. Thus, the wasteload allocations do not vary depending on whether or not the "maximum benefit" objectives apply.

tanks to reduce the nitrogen loading into the Chino and Cucamonga Management Zones. IEUA's permits will reflect these commitments.

Implementing these measures will assure that the groundwater quality remains at or below the Chino North Management Zone objective of 420 mg/L and the Cucamonga Management Zone objective of 380 mg/L. Maintenance of this ambient groundwater quality is necessary, in turn, to assure that IEUA's wastewater treatment facilities are able to meet the effluent TDS limits. Chino Basin groundwater is a significant component of the water supplied in IEUA's service area and its quality thus has an important effect on effluent quality. Poor ambient water quality will preclude IEUA from meeting effluent limits, without desalting. IEUA can revise treatment plant operations to assure that the TIN limit is achieved. These TDS and TIN limitations assure beneficial use protection for Chino Basin and downstream Orange County groundwater, as well as surface waters (including Chino Creek and the Santa Ana River) affected by IEUA discharges.

IEUA's revised permits will also reflect the surface and groundwater monitoring program requirements described above.

2. Issuance of permits to Chino Basin Watermaster

The Regional Board will issue appropriate permits to the Watermaster, individually or jointly with IEUA, for the recharge of recycled water in the Basin. These permits will implement the commitments described above for recharge of other water sources to offset the quality of the recycled water. The parties will be required to document the amount, quality and location of recharge of these other sources, and to demonstrate that stormwater recharge used for blending purposes occurred as the result of the parties' efforts to enhance such recharge. Other "maximum benefit" commitments will be reflected in these permits, or in other orders of the Regional Board, as appropriate.

3. Review of Project Status

No later than 2005, and every three years thereafter (to coincide with the Regional Board's triennial review process), the Regional Board intends to review the status of the activities planned and executed by the Watermaster and IEUA to demonstrate maximum benefit and to justify continued implementation of the "maximum benefit" water quality objectives. This review is intended to determine whether the commitments specified above and summarized in Table 5-8a are met. If, as a result of this review and after consideration at a duly noticed Public Hearing, the Regional Board finds that the Watermaster and IEUA commitments are not met, the Regional Board will make a finding that the lowering of water quality associated with TDS and nitrate-nitrogen water quality objectives that are higher than historical water quality (the "antidegradation" objectives") is not of maximum benefit to the people of the state. By default, the scientifically derived, "antidegradation objectives" for the Chino 1, 2 and 3 and Cucamonga Management Zones would become effective (280 mg/L,

250 mg/L, 260 mg/L and 210 mg/L TDS respectively; 5.0 mg/L, 2.9 mg/L, 3.5 mg/L and 2.4 mg/L for nitrate-nitrogen – see Chapter 4).

The Watermaster and IEUA have made clear commitments to the implementation of projects and management strategies to achieve the "maximum benefit" objectives. A finding of "maximum benefit to the people of the state" is also a very strong commitment of support by the Regional Board for the goals, vision and future plans of the Watermaster and IEUA. Watermaster and IEUA have indicated that the supervision of the Watermaster program by the San Bernardino County Superior Court will ensure that the Watermaster and IEUA commitments are met. However, people change, commitments may be changed, and public agency decisions may certainly change. If the commitments are not met and "maximum benefit" is not demonstrated, then the Regional Board will require that Watermaster and IEUA mitigate the effects of discharges of recycled and imported water that took place under the maximum benefit objectives. Under this circumstance, mitigation will be required such that, after mitigation, the salt and nitrogen loads to the basin from imported water, newly captured stormwater inputs under the Watermaster enhanced stormwater interception program, and recycled water are made to be equivalent to the salt loads that would have been allowed to the Chino Basin under the antidegradation objectives. Discharges in excess of the antidegradation objectives that must be considered for mitigation include both recycled water and imported water at TDS concentrations in excess of the antidegradation objectives. Mitigation by groundwater extraction and desalting must be adjusted to address concentrations of salt and nitrogen in the basin, not simply salt load. (Desalting will be an effective mitigation strategy, but desalting removes water, as well as salt, and the resulting salt concentrations in the groundwater will not completely mitigate the effects of the maximum benefit discharges, if mitigation is considered simply on a salt load, rather than concentration, basis.) This remediation will be required of the agencies that were responsible for the discharge of recycled and imported water (waste discharge permit holders) under the maximum benefit objectives. The remediation must be completed within a 10-year period following the finding by the Regional Board that the antidegradation objectives apply. The Regional Board will also require mitigation of any adverse effects on water quality downstream of the Chino Basin that result from failure to implement the "maximum benefit" commitments.

B. Salt Management - San Timoteo Watershed

1. San Timoteo and Yucaipa Management Zone - Yucaipa Valley Water District

Two sets of objectives have been adopted for the San Timoteo and Yucaipa Management Zones; the "maximum benefit" objectives and objectives based on historic ambient quality ("antidegradation" objectives) (see Chapter 4). The application of the "maximum benefit" objectives relies on the implementation by the Yucaipa Valley Water District (YVWD) (and in the case of the San Timoteo Management Zone, by the City of Beaumont/STWMA (see discussion below)) of a specific program of projects and requirements [Ref. 10D]. This program is a part of a watershed-scale water resources management plan designed by YVWD and other members of the San Timoteo Watershed Management Authority (STWMA) (the City of Beaumont, the Beaumont-Cherry Valley Water District and the South Mesa Water Company) to assure reliable supplies to meet present and anticipated demands. The projected water demands for the Yucaipa area for the year 2030 require approximately an additional 10,000 AF/Y of supplemental water, including State Water Project water, water imported from local sources, recharged storm water and recycled water. YVWD is in the process of implementing the water resources management plan, which includes enhanced recharge of stormwater and recycled water, optimizing direct use of recycled and imported water, and conjunctive use.

In addition to its water supply responsibilities, YVWD provides sewage collection and treatment services within its service area. YVWD operates a wastewater treatment facility that currently discharges tertiary treated wastewater to San Timoteo Creek, Reach 3. This unlined reach of the Creek overlies and recharges the San Timoteo groundwater management zone.

Table 5-9a identifies the projects and requirements that must be implemented by YVWD to demonstrate that water quality consistent with maximum benefit to the people of the state will be maintained. An implementation schedule is also specified. The Regional Board will revise YVWD's waste discharge requirements to require that these commitments be met. It is assumed that maximum benefit is demonstrated, and that the "maximum benefit" water quality TDS and nitrate-nitrogen objectives apply to the Yucaipa and San Timoteo Management Zones, as long as the schedule is being met[6]. If the Regional Board determines that the maximum benefit program is not being implemented effectively in accordance with the schedule shown in Table 5-9a (and in the case of the San Timoteo Management Zone, the commitments and schedule shown in Table 5-10a (see next section)), then maximum benefit is not demonstrated and the "antidegradation" TDS and nitrate-nitrogen objectives apply. In this situation, the Regional Board will require mitigation for TDS and nitrate-nitrogen

[6] Application of "maximum benefit" objectives for the San Timoteo Management Zone is also contingent on the timely implementation of the commitments by the City of Beaumont and the San Timoteo Watershed Management Authority which are discussed in the next section.

discharges affecting these management zones that took place in excess of limits based on the “antidegradation” objectives. As for Chino Basin Watermaster and Inland Empire Utilities Agency, discharges in excess of the antidegradation objectives that must be considered for mitigation include both recycled water and imported water, at TDS concentrations in excess of the antidegradation objectives. Mitigation by groundwater extraction and desalting must be adjusted to address concentrations of salt and nitrogen in the basin, not simply salt load.

Table 5-9a

Yucaipa Valley Water District Maximum Benefit Commitments

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
1. Surface Water Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005
b. Implement Monitoring Program	b. Within 30 days from Regional Board approval of monitoring plan
c. Quarterly data report submittal	c. April 15, July 15, October 15, January 15
d. Annual data report submittal	d. February 15th
2. Groundwater Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005
b. Implement Monitoring Program	b. Within 30 days from Regional Board approval of monitoring plan
c. Annual data report submittal	c. February 15th
3. Desalter(s) and Brine Disposal Facilities	
a. Submit plan and schedule for construction of desalter(s) and brine disposal facilities. Facilities are to operational as soon as possible but no later than 7 years from date of Regional Board approval of plan/schedule.	a. Within 6 months of either of the following: i. When YVWD's effluent 5-year running average TDS exceeds 530 mg/L; and/or ii.. When volume weighted average concentration in the Yucaipa MZ of TDS exceeds 360 mg/L
b. Implement the plan and schedule	b. Within 30 days from Regional Board approval of monitoring plan
4. Non-potable water supply Implement non-potable water supply system to serve water for irrigation purposes. The non-potable supply shall comply with a 10-year running average TDS concentration of 370 mg/L or less	December 23, 2014

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
5. Recycled water recharge The recharge of recycled water in the Yucaipa or San Timoteo Management Zones shall be limited to the amount that can be blended with other recharge sources to achieve a 5-year running average equal to or less than the "maximum benefit" objectives for TDS and nitrate-nitrogen for the relevant Management Zone(s). a. Submit baseline report of amount, locations, and TDS and nitrogen quality of stormwater/imported water recharge. b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of YVWD enhanced recharge facilities/programs	Compliance must be achieved by end of 5th year after initiation of recycled water use/recharge operations. a. Prior to initiation of construction of basins/other facilities to support enhanced stormwater/imported water recharge. b. Annually, by January 15th, after initiation construction of facilities/implementation of programs to support enhanced recharge.
6. Ambient groundwater quality determination	July 1, 2005 and every 3 years thereafter
7. Replace denitrification facilities (necessary to comply with TIN wasteload allocation specified in Table 5-5)	New facilities shall be operational no later than December 23, 2007
8. YVWD recycled water quality improvement plan and schedule a. Submit plan and schedule b. Implement plan and schedule	a. 60 days after the TDS 12-month running average effluent quality equals or exceeds 530 mg/L for 3 consecutive months and/or the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once replacement denitrification facilities are in place) b. Upon approval by Regional Board

Description of Commitment	Compliance Date – as soon as possible, but no later than
9. Remove/reduce the discharge of YVWD effluent from the unlined portion of San Timoteo Creek a. Submit proposed plan/schedule b. Implement plan/schedule	 a. June 23, 2005 b. Upon Regional Board approval
10. Construct the Western Regional Interceptor for Dunlap Acres a. Submit proposed construction plan and schedule. The schedule shall assure the completion of construction as soon as possible but no later than January 1, 2010. b. Implement plan and schedule	 a. June 23, 2005 b. Upon Regional Board approval

A. Description of Yucaipa Valley Water District Commitments

1. Surface Water Monitoring Program (Table 5-9a, # 1)

The YVWD shall develop and submit for Regional Board approval a surface water monitoring program for San Timoteo Creek and the Santa Ana River Reaches 4 and 5. The monitoring program must be implemented within 30 days of Regional Board approval of the monitoring plan, and six months of data must be generated prior to the implementation of any changes made to the effluent discharge points and before any recycled water is used in the Yucaipa or San Timoteo Management Zones.

At a minimum, the surface water monitoring program shall include the collection of monthly measurements of TDS and nitrogen components in San Timoteo Creek and Santa Ana River, Reaches 4 and 5 (see Table 5-9b). Data reports shall be submitted to the Regional Board's Executive Officer by April 15, July 15, October 15 and January 15 each year. An annual report summarizing all data collected for the year and evaluating compliance with relevant surface water objectives shall be submitted by February 15th of each year.

2. Groundwater Monitoring Program (Table 5-9a, #2)

The purpose of the Groundwater Monitoring Program is to identify the effects of the implementation of the San Timoteo and Yucaipa Management Zones maximum benefit water quality objectives on water levels and water quality within the San Timoteo and Yucaipa Management Zones. Prior to discharge of recycled water to the San Timoteo and/or Yucaipa Management Zones, YVWD shall submit to the Regional Board for approval a groundwater monitoring program to determine ambient water quality in the San Timoteo and Yucaipa Management Zones . The groundwater monitoring program must be implemented within 30 days of approval by the Regional Board.

An annual report, including all raw data and summarizing the results of the approved groundwater monitoring program, shall be submitted to the Regional Board by February 15th of each year.

3. Desalters and Brine Disposal (Table 5-9a, #3)

YVWD anticipates that demineralization of groundwater or recycled water will be necessary in the future. YVWD is committed to construct and operate desalting and brine disposal facilities when:

1) The 5-year running average TDS concentration in recycled water produced at the YVWD wastewater treatment plant exceeds 530 mg/L; or

2) The volume-weighted TDS concentration in the Yucaipa Management Zone reaches or exceeds 360 mg/L

The construction of these facilities will be in accordance with a plan and schedule submitted by YVWD and approved by the Regional Board. The schedule shall assure that these facilities are in place within 7 years of Regional Board approval. These facilities shall be designed to stabilize or reverse the degradation trend evidenced by effluent and/or management zone quality.

4. Non-potable water supply distribution system (Table 5-9a, # 4)

A key element of the YVWD's water resources management plan is the construction of a non-potable supply system to serve a mix of recycled water and un-treated imported water for irrigation uses. The intent of blending these sources is to minimize the impact of recycled water use on the Yucaipa and San Timoteo Management Zones.

Parts of this system are under design and construction. A higher proportion of State Project water will be used in wet, surplus years, while larger amounts of recycled

water will be used in dry, deficit years. YVWD will produce a non-potable supply with a running ten-year average TDS concentration less than the “maximum benefit” objective for the Yucaipa Management Zone (370 mg/L).

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Table 5 – 9b

Surface Water Monitoring Sites for Monitoring Water Quality and Quantity
Yucaipa Valley Water District

Site Name	Discharge	Owner	Type	Discharge Frequency	Monitoring Period	Water Quality Monitoring Frequency	Period	Analyses
11057500, Gage	San Timoteo Creek	USGS	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
At Barton Rd.	San Timoteo Creek	YVWD	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
At San Timoteo Canyon Rd.	San Timoteo Creek	YVWD	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
Above confluence Yucaipa Creek	San Timoteo Creek	YVWD	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
Above YVWD Discharge	San Timoteo Creek	YVWD	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
11059300 Gage	Santa Ana River	USGS	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
At Waterman Ave	Santa Ana River	YVWD	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
Recharged to Yucaipa MZ	State Water Project	YVWD	Total Discharge	Monthly	Jan-Dec	Monthly	Jan-Dec	TDS, Nitrate-N
Recharged to Yucaipa MZ	Storm water	YVWD	Total Discharge	Monthly	Jan-Dec	Monthly	Jan-Dec	TDS, Nitrate-N

5. Recycled Water Use (Table 5-9a, # 5)

The use and recharge of recycled water within the Yucaipa Management Zone is a critical component of the YVWD water management plan and is necessary to maximize the use of the water resources of the Yucaipa area. The demonstration of "maximum benefit" and the continued application of the "maximum benefit" objectives depends on the combined recharge (recycled water, imported water, storm water) to the Yucaipa Management Zone of a 5-year annual average (running average) TDS concentration of 370 mg/L and nitrate-nitrogen concentration of 5 mg/L. If recycled water recharge in the proposed San Timoteo Management Zone is pursued, then the application of the "maximum benefit" objectives will depend on the combined recharge to that Zone of 5-year annual average (running average) concentrations of 400 mg/L or less TDS, and 5 mg/L or less nitrate-nitrogen.

To meet this requirement, YVWD will establish a fund to purchase imported water from local sources and/or the State Water Project and will recharge water with a TDS concentration less than 300 mg/L (recent long term historical average of water delivered from the State Project). YVWD will also pursue implementation, with the City of Yucaipa and the San Bernardino County Flood Control District, of the *Yucaipa Water Capture and Resource Management Complex* by December 31, 2010.

Accordingly, the use of recycled water for groundwater recharge in the Yucaipa or San Timoteo Management Zone shall be limited to the amount that can be blended in the management zone on a volume-weighted basis with other sources of recharge to achieve 5-year running average concentrations less than or equal to the "maximum benefit" objectives for the affected groundwater management zone. The 25% nitrogen loss coefficient will be applied in determining the amount of recharge of other water sources that must be achieved to meet the 5-year running average nitrogen concentrations.

6. Ambient Groundwater Quality Determination (Table 5-9a, # 6)

By July 1, 2005, and every three years thereafter, YVWD shall submit a determination of ambient TDS and nitrate-nitrogen quality in the San Timoteo and Yucaipa Management Zones. This determination shall be accomplished using methodology consistent with the calculation (20-year running averages) used by the Nitrogen/TDS Task Force to develop the TDS and nitrate-nitrogen "antidegradation" water quality objectives for groundwater management zones within the region. [Ref. 1].

7. Replacement of Denitrification Facilities (Table 5-9a, #7)

YVWD shall replace existing denitrification facilities to provide effluent total inorganic nitrogen quality (6 mg/L) needed to assure compliance with the "maximum benefit" nitrate-nitrogen objective of the San Timoteo and Yucaipa Management Zones (see Wasteload Allocation section of this Chapter). A maximum three year schedule for completion of these facilities will be required. This schedule will be specified in a revised NPDES permit for YVWD's discharges to San Timoteo Creek.

8. YVWD Recycled Water Management (Table 5-9a, #8)

YVWD expects to limit the TDS concentration in its effluent to less than or equal to 540 mg/L by using a low TDS source water supply for potable uses, selective desalting of either source water and/or recycled waters, and minimizing the TDS waste increment. YVWD is currently constructing a 12-MGD treatment plant to treat and serve State Project Water. The plant will also be able to treat low TDS Mill Creek and Santa Ana River water. When necessary, YVWD will construct desalters to reduce either the TDS concentration in water supplied to customers or the TDS concentration in the effluent. YVWD will also use best efforts to enact ordinances and other requirements to minimize the TDS use increment.

Within 60 days after the YVWD 12-month running average concentration for TDS equals or exceeds 530 mg/L for 3 consecutive months, or the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once replacement denitrification facilities are in place), YVWD shall submit to the Regional Board a plan and time schedule for implementation of measures to insure that the average agency wastewater effluent quality does not exceed 540 mg/L and 6 mg/L for TDS and TIN, respectively. The plan and schedule are to be implemented upon approval by the Regional Board.

9. Relocation of San Timoteo Creek Discharge (Table 5-9a, #9)

YVWD has established the goal of eliminating its discharge to the unlined reach of San Timoteo Creek by 2008. First priority will be given to the direct reuse and limited recharge of this recycled water in the YVWD service area (principally the area overlying the Yucaipa Management Zone). The District may construct a pipeline to convey the recycled water to the San Jacinto watershed for reuse. The District is also planning the construction of a pipeline to convey recycled water downstream to the lined reach of the Creek (Reach 1A) to minimize recycled water effects on the San Timoteo Management Zone. In the long-term, discharges to this area of the Creek are likely to be infrequent and limited to the wintertime, when the recycled water cannot be used in the YVWD (or potentially, the San Jacinto) service areas. However, YVWD is obligated to maintain flows in the Creek to support existing riparian habitat (State Board Order No. WW-26) and may need to continue recycled water discharges at some level. Groundwater and imported State Project water may also be used as alternative water sources.

Whole or partial removal of the discharge from the unlined reach of San Timoteo Creek would improve the quality of groundwater in the San Timoteo Management Zone and supplement recycled water supplies available for reuse elsewhere in the service area.

By June 23, 2005, YVWD shall submit a proposed plan and schedule to remove/reduce the discharge of recycled water to the unlined reach of San Timoteo Creek. The plan and schedule shall be implemented upon Regional Board approval.

10. Construction of Western Regional Interceptor (Table 5-9a, # 10)

YVWD will construct the Western Regional Interceptor to provide wastewater collection and treatment services to Dunlap Acres in order to mitigate what has been identified as a poor quality groundwater area due to prior agricultural use and existing septic systems. The Dunlap Acres area was inadvertently omitted from the Yucaipa-Calimesa septic tank subsurface disposal system prohibition established by the Regional Board in 1973. The interceptor includes the construction of a major wastewater interceptor pipeline, a force main and pump station. YVWD committed to complete construction of these facilities prior to 2010. Regional Board action may be necessary to require connection of properties to the wastewater collection system, when it is completed.

By June 23, 2005, YVWD shall submit a plan and schedule for construction of the

Interceptor. The Interceptor is to be complete no later than January 1, 2010. YVWD shall implement the plan and schedule upon Regional Board approval.

B. Implementation by Regional Board

1. Revision to Yucaipa Valley Water District NPDES Permit

To implement the "maximum benefit" objectives, the Regional Board will revise the NPDES permit for YVWD wastewater discharges to reflect the commitments described above, as appropriate. This includes the following.

The discharge limits for TDS and TIN will be specified as an annual volume-weighted average not to exceed 540 mg/L TDS and 6 mg/L TIN. These limits are based on the "maximum benefit" wasteload allocations shown in Table 5-5. A schedule not to exceed December 23, 2007 for compliance with this TIN limit shall be included in the permit. This schedule will enable YVWD to replace its existing denitrification facilities. Alternative TDS and nitrate-nitrogen limitations based on the "antidegradation" objectives will also be specified and will apply should the Regional Board find that maximum benefit is not demonstrated. These alternative limits are also specified in Table 5-5. Compliance schedules for these alternative limits will be specified in YVWD's waste discharge requirements, as necessary.

YVWD will be required to implement measures to improve effluent quality when the 12-month running average effluent TDS quality equals or exceeds 530 mg/L for 3 consecutive months, and/or when the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once replacement denitrification facilities are in place).

YVWD's waste discharge requirements will require that recycled water used for recharge shall be limited to the amount that can be blended with other water sources, such as stormwater or imported water, to achieve 5-year running average concentrations equal to or less than the "maximum benefit" TDS and nitrate-nitrogen objectives for the affected management zone (Yucaipa or San Timoteo). Alternative TDS and nitrate-nitrogen limitations based on the "antidegradation" objectives will also be specified for recycled water recharge in these management zones.

The effluent limits for YVWD, which establish an upper limit on TDS and TIN concentrations of recycled water discharged in the Yucaipa and/or San Timoteo Management Zones, are a cornerstone of the maximum benefit demonstration. The cap on effluent TDS and TIN concentrations provides a controlling point for management of TDS and nitrogen water quality. YVWD will be required to initiate the building of a desalter and brine disposal line when the 5-year running average TDS in YVWD's effluent reaches 530 mg/L, or when the volume weighted-average TDS concentration in the Yucaipa Management Zone reaches 360 mg/L. YVWD will immediately implement a salt management program to reduce the salts entering the District's wastewater treatment plant. This salt management program will include: 1) provision of incentives for the removal of on-site regenerative water softeners and the

use of off-site regenerative systems; and 2) percolation of State Water Project water into the Yucaipa Management Zone when State Water Project water has low TDS. Implementing these measures will assure that the groundwater quality remains at or below the Yucaipa Management Zone objective of 360 mg/L TDS. Maintenance of this ambient groundwater quality is necessary, in turn, to assure that YVWD's wastewater treatment facility is able to meet the effluent TDS limits. Yucaipa Management Zone groundwater is a significant component of the water supplied in YVWD's service area, and its quality thus has an important effect on effluent quality. Poor ambient quality will preclude YVWD from meeting effluent limits without desalting.

YVWD will be required to submit proposed plans and schedules for the removal/reduction of its wastewater discharges from the unlined reach of San Timoteo Creek and for the construction of the Western Regional Interceptor. YVWD's revised permit will also reflect the surface and groundwater monitoring program requirements described above. This includes the determination of ambient quality in the San Timoteo and Yucaipa Management Zones.

2. Review of Project Status

No later than 2005, and every three years thereafter (to coincide with the Regional Board's triennial review process), the Regional Board intends to review the status of the activities planned and executed by the YVWD to demonstrate maximum benefit and justify continued implementation of the "maximum benefit" water quality objectives. This review is intended to determine whether the commitments specified above and summarized in Table 5-9a are met. As indicated above, if, as a result of this review, the Regional Board finds that the YVWD commitments are not met and after consideration at a duly noticed Public Hearing, the Regional Board will make a finding that the lowering of water quality associated with TDS and nitrate-nitrogen water quality objectives that are higher than historical water quality (the "antidegradation" objectives) is not of maximum benefit to the people of the state. By default, the scientifically derived "antidegradation" objectives for the San Timoteo (300 mg/L for TDS, 2.7 mg/L for nitrate-nitrogen) and Yucaipa (320 mg/L for TDS and 4.2 mg/L for nitrate-nitrogen Management Zones would become effective (see Chapter 4).

Furthermore, in the event that the projects and actions specified in Table 5-9a are not implemented, the Regional Board will require that the YVWD mitigate the adverse water quality effects, both on the immediate and downstream waters, that resulted from the recycled water discharges based on the "maximum benefit" objectives.

2. San Timoteo and Beaumont Management Zones – City of Beaumont and San Timoteo Watershed Management Authority (STWMA)

As shown in Chapter 4, two sets of TDS and nitrate-nitrogen objectives have been adopted for both the San Timoteo and Beaumont Management Zones: the "maximum benefit" objectives and objectives based on historic ambient quality (the "antidegradation" objectives). The application of the "maximum benefit" objectives for these Management Zones is contingent on the implementation of commitments by the City of Beaumont/STWMA (and, in the case of the San Timoteo Management Zone, by the Yucaipa Valley Water District (YVWD; see preceding discussion)) to implement a specific water and wastewater resources management program [Ref. 10E]. This program is part of a coordinated effort by the member agencies of STWMA to develop and implement projects that will assure reliable water supplies to meet rapidly increasing demands in this area. The San Timoteo Watershed Management Program (STWMP) developed by STWMA entails enhanced recharge of native and recycled water, maximizing the direct use of recycled water, optimizing the direct use of imported water, recharge and conjunctive use.

Wastewater collection and treatment services in the STWMA service area are provided by the City of Beaumont, as well as YVWD. Beaumont discharges tertiary treated wastewater to Coopers Creek, a tributary of San Timoteo Creek, Reach 3. This unlined reach of the Creek overlies and recharges the San Timoteo groundwater management zone.

Table 5-10a identifies the projects and requirements that must be implemented by Beaumont/STWMA to demonstrate that water quality consistent with maximum benefit to the people of the state will be maintained. STWMA, acting for all its member agencies, has committed to conduct the regional planning and monitoring activities necessary to implement these "maximum benefit" commitments, and the San Timoteo Watershed Management Program as a whole. Table 5-10a also specifies an implementation schedule. The Regional Board will revise the City of Beaumont's waste discharge requirements and take other actions as necessary to require that these commitments be met. It is assumed that maximum benefit is demonstrated, and that the "maximum benefit" water quality TDS and nitrate-nitrogen objectives apply to the Beaumont and San Timoteo Management Zones, as long as the schedule is being met[7]. If the Regional Board determines that the maximum benefit program is not being implemented effectively in accordance with the schedule shown in Table 5-10a (and in the case of the San Timoteo Management Zone, the commitments and schedule shown in Table 5-9a (see preceding section)), then maximum benefit is not demonstrated, and the "antidegradation" TDS and nitrate-nitrogen objectives apply. In this situation, the Regional Board will require mitigation for TDS and nitrate-nitrogen discharges

[7] Application of "maximum benefit" objectives for the San Timoteo Management Zone is also contingent on the timely implementation of the commitments by the Yucaipa Valley Water District which are discussed in the preceding section.

affecting these management zones that took place in excess of limits based on the "antidegradation" objectives.

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Table 5-10a

City of Beaumont and San Timoteo Watershed Management Authority
Maximum Benefit Commitments

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
1. Surface Water Monitoring Program a. Submit Draft Monitoring Program to Regional Board b. Implement Monitoring Program c. Quarterly data report submittal d. Annual data report submittal	 a. January 23, 2005 b. Within 30 days from Regional Board approval of monitoring plan c. April 15, July 15, October 15, January 15 d. February 15th
2. Groundwater Monitoring Program a. Submit Draft Monitoring Program to Regional Board b. Implement Monitoring Program c. Annual data report submittal	 a. January 23, 2005 b. Within 30 days from Regional Board approval of monitoring plan c. February 15th
3. Desalter(s) and Brine Disposal Facilities Submit plan and schedule for construction of desalter(s) and brine disposal facilities. Facilities are to be operational as soon as possible but no later than 7 years from date of Regional Board approval of plan/schedule. b. Implement the plan and schedule	 a. Within 6 months of either of the following: i. When Beaumont's effluent 5-year running average TDS exceeds 480 mg/L; and/or ii. When volume weighted average concentration in the Yucaipa MZ of TDS exceeds 320 mg/L b. Within 30 days from Regional Board approval of monitoring plan
4. Non-potable water supply Implement non-potable water supply system to serve water for irrigation purposes. The non-potable supply shall comply with a 10-year running average TDS concentration of 330 mg/L or less	 December 23, 2014

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
5. Recycled water recharge The recharge of recycled water in the Beaumont or San Timoteo Management Zones shall be limited to the amount that can be blended with other recharge sources to achieve a 5-year running average equal to or less than the "maximum benefit" objectives for TDS and nitrate-nitrogen for the relevant Management Zone(s). a. Submit baseline report of amount, locations, and TDS and nitrogen quality of stormwater/imported water recharge. b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of City of Beaumont/STWMA enhanced recharge facilities/programs	Compliance must be achieved by end of 5th year after initiation of recycled water use/recharge operations. a. Prior to initiation of construction of basins/other facilities to support enhanced storm/water imported water recharge . b. Annually, by January 15th, after initiation construction of facilities/implementation of programs to support enhanced recharge.
6. Ambient groundwater quality determination	July 1, 2005 and every 3 years thereafter
7. Replace denitrification facilities (if necessary to comply with TIN wasteload allocation specified in Table 5-5)	Compliance with 6 mg/L TIN limitation to be achieved by December 23, 2007
8. City of Beaumont recycled water quality Improvement plan and schedule a. Submit plan and schedule b. Implement plan and schedule	a. 60 days after the TDS 12-month running average effluent quality equals or exceeds 480 mg/L for 3 consecutive months and/or the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once facility/operational changes needed to achieve 6 mg/L TIN are in place) b. Upon approval by Regional Board
9. Remove/reduce the discharge of Beaumont Effluent From the unlined portion of San Timoteo Creek a. Submit proposed plan/schedule b. Implement plan/schedule	a. June 23, 2005 b. Upon Regional Board approval

A. Description of City of Beaumont, San Timoteo Watershed Authority Commitments

1. Surface Water Monitoring Program (Table 5-10a, #1)

The City of Beaumont and the STWMA shall develop and submit for Regional Board approval a surface water monitoring program for San Timoteo, Little San Gorgonio and Noble Creeks at the locations listed in Table 5-10b. The monitoring program must be implemented within 30 days of Regional Board approval of the monitoring plan, and six months of data must be generated prior to the implementation of any changes to the effluent discharge points and before any recycled water is used in the Beaumont or San Timoteo Management Zones.

At a minimum, the surface water monitoring program shall include the collection of monthly measurements of TDS and nitrogen components at locations in San Timoteo, Little San Gorgonio and Noble Creeks (see Table 5-10b). Data reports shall be submitted to the Regional Board's Executive Officer by April 15, July 15, October 15 and January 15 each year. An annual report summarizing all data collected for the year and evaluating compliance with relevant surface water objectives shall be submitted February 15th of each year.

2. Groundwater Monitoring Program (Table 5-10a. #2)

The purpose of the groundwater monitoring program is to identify the effects of the implementation of the Beaumont and San Timoteo Management Zone maximum benefit TDS and nitrate-nitrogen water quality objectives on water levels and water quality within the Beaumont and San Timoteo Management Zones. Prior to discharge of recycled water to the Beaumont and/or San Timoteo Management Zone, the City of Beaumont and the STWMA shall submit to Regional Board for approval a groundwater monitoring program to determine ambient water quality in the Beaumont and San Timoteo Management Zones. The groundwater monitoring program must be implemented within 30 days of approval by the Regional Board.

An annual report, including all raw data and summarizing the results of the approved groundwater monitoring program, shall be submitted to the Regional Board by February 15th of each year.

3. Desalters and Brine Disposal (Table 5-10a. #3)

The City of Beaumont and the STWMA shall construct and operate desalting facilities and brine disposal facilities when:

a. The 5-year running average TDS concentration in recycled water produced at the City of Beaumont wastewater treatment plant exceeds 480 mg/L, or

b. The volume-weighted TDS concentration in the Beaumont Management Zone equals or exceeds 320 mg/L.

The construction of these facilities will be in accordance with a plan and schedule submitted by Beaumont/STWMA and approved by the Regional Board. The schedule shall assure that these facilities are in place within 7 years of Regional Board approval. These facilities shall be designed to stabilize or reverse the degradation trend evidenced by effluent and/or management zone quality.

Table 5 – 10b

Surface Water Monitoring Sites for Monitoring Water Quality and Quantity
City of Beaumont & San Timoteo Watershed Management Authority

Site Name	Discharge	Owner	Type	Discharge Frequency	Monitoring Period	Water Quality Monitoring Frequency	Period	Analyses
Above confluence With Coopers Cr.	San Timoteo Creek	Beaumont & STWMA	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
Near Hinda Sec.35 T2S,R2W	San Timoteo Creek	Beaumont & STWMA	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
Above confluence With San Timoteo Creek	Coopers Creek	Beaumont & STWMA	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
At Freeway 10	Little San Gorgonio Cr.	Beaumont & STWMA	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
At Freeway 10	Noble Creek	Beaumont & STWMA	Total Discharge	Bi-weekly	Jan-Dec	Bi-weekly	Jan-Dec	TDS, TIN, Physical
Recharged to Beaumont MZ	State Water Project	Beaumont & STWMA	Total Discharge	Bi-weekly	Jan-Dec	Monthly	Jan-Dec	TDS, Nitrate-N
Recharged to Beaumont MZ	Storm water	Beaumont & STWMA	Total Discharge	Bi-weekly	Jan-Dec	Monthly	Jan-Dec	TDS, Nitrate-N

4. Non-potable water supply distribution system (Table 5-10a, #4)

Like YVWD, the City of Beaumont is constructing a non-potable water system that will convey untreated State Project water and recycled water for irrigation within its service area. The intent of blending these sources is to minimize the impact of recycled water use on groundwater quality in the proposed Beaumont and San Timoteo Management Zones. A higher proportion of State Project water will be used in wet, surplus years, while larger amounts of recycled water will be used in dry, deficit years.

5. Recycled Water Use (Table 5-10a, #5)

The use of recycled water within the Beaumont Management Zone is a critical component of the City of Beaumont and STWMA water management plan and is necessary to maximize the use of the water resources of the Beaumont area.

The demonstration of "maximum benefit" and the continued application of the "maximum benefit" objectives depends on the combined recharge (recycled water, imported water, storm water) to the Beaumont Management Zone of a 5-year annual average (running average) TDS concentration of 330 mg/L and a nitrate-nitrogen concentration of 5 mg/L. If recycled water recharge in the San Timoteo Management Zone is pursued, then the application of the "maximum benefit" objectives will depend on the combined recharge to that Zone of 5-year annual average (running average) concentrations of 400 mg/L or less TDS, and 5 mg/L or less nitrate-nitrogen.

To comply with this requirement, the STWMA member agencies are developing plans to recharge and store State Project water in the proposed Beaumont Management Zone. The Beaumont-Cherry Valley Water District (BCVWD) is developing a new 80-acre groundwater recharge project that will increase storm water recharge in the Beaumont Basin by 4,100 acre-ft/yr. This facility will also be used to recharge State Water project water. The City of Beaumont is also developing storm water recharge in facilities in newly developing areas, which is expected to result in the recharge of an additional 2,400 acre-ft/yr of stormwater runoff.

Accordingly, the use of recycled water for use or recharge in the Beaumont or San Timoteo Management Zone shall be limited to the amount that can be blended on a volume-weighted basis with other sources of recharge to achieve 5-year running average concentrations less than or equal to the "maximum benefit" objectives for the affected groundwater management zone. The 25% nitrogen loss coefficient will be applied in determining the amount of recharge of other water sources that must be achieved to meet the 5-year running average nitrogen concentrations.

6. Ambient Groundwater Quality Determination (Table 5-10a, # 6)

By July 1, 2005, and every three years thereafter, the City of Beaumont and STWMA shall submit a determination of ambient TDS and nitrate-nitrogen quality in the Beaumont and San Timoteo Management Zones. This determination shall be accomplished using methodology consistent with the calculation (20-year running averages) used by the Nitrogen /TDS Task Force to develop the TDS and nitrate-nitrogen "antidegradation" water quality objectives for groundwater management zones within the region [Ref. 1].

7. Replacement/modification of denitrification facilities (Table 5-10a, #7)

The City of Beaumont has committed to produce recycled water with a 12-month average TIN concentration of 6 mg/L or less by 2008. This may be accomplished via operational changes, or may require the installation/modification of facilities. This TIN effluent quality is specified in the TIN wasteload allocation (see Table 5-5) and is necessary to assure compliance with the proposed "maximum benefit" nitrate-nitrogen objective for the Beaumont and San Timoteo Management Zones (5 mg/L). An appropriate schedule, not to exceed December 23, 2007 for compliance with this effluent limit will be specified in a revised NPDES permit for the City.

8. City of Beaumont Wastewater Management (Table 5-10a, #8)

Beaumont expects to limit the TDS concentration in its effluent to less than or equal to 490 mg/L by using a low TDS source water supply for potable uses, selective desalting of either source water and/or recycled waters, and minimizing the TDS waste increment.

Within 60 days after the Beaumont 12-month running average concentration for TDS equals or exceeds 480 mg/L for 3 consecutive months, or the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once facility/operational changes needed to achieve 6 mg/L TIN are in place), the City of Beaumont shall submit to the Regional Board a plan and time schedule for implementation of measures to insure that the average agency wastewater effluent quality does not exceed 490 mg/L and 6 mg/L for TDS and TIN, respectively. The plan and schedule are to be implemented upon approval by the Regional Board.

9. Relocation of San Timoteo Creek Discharge (Table 5-10a, #9)

Like YVWD, Beaumont has established the goal of eliminating its discharge to the unlined reach of San Timoteo Creek by 2008 to minimize the impacts of these discharges on the San Timoteo Management Zone. The STWMP anticipates that Beaumont's recycled water will be almost completely reused within the Beaumont area for landscape irrigation, habitat enhancement, and potentially for groundwater recharge. Like YVWD, Beaumont and STWMA are also considering the export of a portion of Beaumont's surplus recycled water to the San Jacinto basin, where the

TDS objectives are higher than those for the Beaumont Management Zone and recycled water demands are greater than supplies. Some limited recycled water discharge to Coopers Creek and thence /San Timoteo Creek may need to be continued to support existing riparian habitat.

Whole or partial removal of the discharge from the unlined reach of San Timoteo Creek would improve the quality of groundwater in the San Timoteo Management Zone and supplement recycled water supplies available for reuse elsewhere in the service area.

By June 23, 2005, Beaumont/STWMA shall submit a proposed plan and schedule to remove/reduce the discharge of recycled water to the unlined reach of San Timoteo Creek. The plan and schedule shall be implemented upon Regional Board approval.

B. Implementation by Regional Board

1. Revision of City of Beaumont NPDES Permit

To implement the "maximum benefit" objectives, the Regional Board will revise the NPDES permit for the City of Beaumont wastewater discharge to reflect the commitments described above, as appropriate. This includes the following.

The discharge limits for TDS and TIN will be specified as an annual volume-weighted average not to exceed 490 mg/L TDS and 6 mg/L TIN. These limits are based on the wasteload allocation shown in Table 5-5. A schedule not to exceed December 23, 2007 for compliance with this TIN limit shall be included in the permit. This schedule will enable Beaumont to make the necessary facility/operational changes. Alternative TDS and nitrate-nitrogen limitations based on the "antidegradation" objectives will also be specified and will apply should the Regional Board find that maximum benefit is not demonstrated. These alternative limits are also specified in Table 5-5. Compliance schedules for these alternative limits will be specified in Beaumont's waste discharge requirements, as necessary.

Beaumont will be required to implement measures to improve effluent quality when the 12-month running average effluent TDS quality equals or exceeds 480 mg/L for 3 consecutive months, and/or when the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once the facility/operational changes necessary to assure compliance with the 6 mg/L limit are in place).

Beaumont's waste discharge requirements will require that recycled water used for recharge shall be limited to the amount that can be blended with other water sources, such as stormwater or imported water, to achieve 5-year running average concentrations equal to or less than the "maximum benefit" TDS and nitrate-nitrogen objectives for the affected management zone (Beaumont or San Timoteo).

The effluent limits for the City of Beaumont, which establish an upper limit on TDS and TIN concentrations of recycled water discharged in the management zones, are

a key part of the maximum benefit demonstration. The cap on effluent TDS and TIN concentrations provides a controlling point for management of TDS and nitrogen water quality. The City of Beaumont has committed to initiate the building of a groundwater desalter and brine disposal line when the TDS in the City's effluent reaches 480 mg/L. Further, the City will immediately implement a salt management program to reduce the salts entering the City's wastewater treatment plant. This salt management program will include: 1) provision of incentives for the removal of on-site regenerative water softeners and the use of off-site regenerative systems; and 2) percolation of State Water Project water into the Beaumont Management Zone when State Water Project water has low TDS. Implementing these measures will assure that the groundwater quality remains at or below the Beaumont management zone objective of 330 mg/L TDS. Maintenance of this ambient groundwater quality is necessary, in turn, to assure that the City's wastewater treatment facility is able to meet the effluent TDS limits. Beaumont Management Zone groundwater is a component of the water supplied to the City and its quality thus has an important effect on the effluent quality. Poor ambient quality will preclude the City from meeting effluent limits without desalting.

Beaumont will be required to submit a proposed plan and schedule for the removal/reduction of its wastewater discharges from the unlined reach of San Timoteo Creek. Beaumont's revised permit will also reflect the surface and groundwater monitoring program requirements described above. This includes the determination of ambient quality in the San Timoteo and Beaumont Management Zones.

2. Review of Project Status

No later than 2005, and every three years thereafter (to coincide with the Regional Board's triennial review process), the Regional Board intends to review the status of the activities planned and executed by the City of Beaumont and STWMA to demonstrate maximum benefit and justify continued implementation of the "maximum benefit" water quality objectives. This review is intended to determine whether the commitments specified above and summarized in Table 5-10a are met. As indicated above, if, as a result of this review, the Regional Board finds that the City of Beaumont and STWMA commitments are not met and after consideration at a duly noticed Public Hearing, the Regional Board will make a finding that the lowering of water quality associated with TDS and nitrate-nitrogen water quality objectives that are higher than historical water quality (the "antidegradation" objectives) is not of maximum benefit to the people of the state. By default, the scientifically derived "antidegradation" objectives for the Beaumont and San Timoteo Management Zones would become effective (230 mg/L TDS and 1.5 mg/L nitrate-nitrogen for the Beaumont Management Zone; 300 mg/L TDS and 2.7 mg/L nitrate-nitrogen for the San Timoteo Management Zone (see Chapter 4).

Furthermore, in the event that the projects and actions specified in Table 5-10a are not implemented, the Regional Board will require that the City of Beaumont and STWMA mitigate the adverse water quality effects, both on the immediate and

downstream waters, that resulted from the recycled water discharges based on the "maximum benefit' objectives. As for CBW/IEUA and YVWD, discharges in excess of the antidegradation objectives that must be considered for mitigation include both recycled water and imported water, at TDS concentrations in excess of the antidegradation objectives. Mitigation by groundwater extraction and desalting must be adjusted to address concentrations of salt and nitrogen in the basin, not simply salt load.

(End of Salt Management Plan Section) (End of Resolution R8-2004-0001)

NONPOINT SOURCE PROGRAM

Considerable improvements in water quality have been achieved in the nation through the control of point source discharges such as those from sewage treatment plants or industrial facilities. It is now recognized that in many areas, nonpoint source inputs, such as urban nuisance flows and stormwater runoff, are the principal sources of contaminant inputs to surface and groundwaters.

In contrast to point sources, which discharge wastewater of predictable quantity and quality at a discrete point (usually at the end of a pipe), nonpoint source inputs are diffuse in origin and variable in quality. Management of nonpoint source inputs is in many ways more difficult to achieve, since it requires an array of control techniques customized to local watershed conditions.

Nonpoint Source Management Plan

Section 319 of the 1987 amendments to the Clean Water Act (33 USC 466 *et seq.*), established the framework for nonpoint source activities. Section 319 requires each state to prepare a Nonpoint Source Management Plan and to conduct an assessment of the impact nonpoint sources have on the state's waterbodies. In response to these requirements, the State Board adopted the Nonpoint Source Management Plan (NPSMP) in 1988 and the Water Quality Assessment in 1990 (see Chapter 6 for a discussion of the Water Quality Assessment). The NPSMP establishes a statewide policy for managing nonpoint source inputs to California's waters and is part of this Basin Plan.

The State Board defined six objectives of the Nonpoint Source Management Plan, four of which apply to activities in the Santa Ana Region:

1. Initiate and institutionalize activities for control of nonpoint source pollution (drainage from urban activities, agriculture, silviculture, abandoned mines construction, grazing, hydrologic modification, and individual disposal systems). These activities include outreach, education, public participation, technical assistance, financial assistance, interagency coordination, and demonstration projects.

A major part of the Regional Board staff's nonpoint source activities is participation in outreach activities. Board staff attend committee meetings to exchange information and to coordinate planning efforts among the various agencies in the region. Staff also coordinates with other public agencies and citizens' groups engaged in protecting water quality form nonpoint source impacts, generally by participating in technical advisory committees. Regional outreach activities are also beginning to include identification of best management practices such as education, information dissemination, and structural and nonstructural water quality controls.

2. Fund contracts for nonpoint source projects selected for nonpoint source grant funding in State Fiscal Year 1992-93. Regional water Board staff will also participate in these projects and provide technical assistance.

   Regional Board staff has managed or acted in an advisory capacity for a number of nonpoint source grant funded contracts. These projects have included Newport Bay studies to develop a hydrodynamic model of the Bay as well as a study to monitor sources of toxics into the Bay.

3. Initiate nonpoint source watershed pilot programs on nine watersheds in the state.

   San Diego Creek was designated as the region's pilot watershed project. The Creek's water quality has been impaired by excessive sedimentation, nitrates, pesticides, and metals originating from point and nonpoint sources (see the following discussion on the Newport Bay Watershed). In addition, the Upper Newport Bay Dredging Project was identified as the Region's focused nonpoint source watershed project. The U.S. Army Corps of Engineers, under Congressional authorization, is investigating dredging Upper Newport Bay to deepen the channel. The Army Corps of Engineers' activities could modify the Upper Bay's water quality and currents. Regional Board staff are aiding the Army Corps of Engineers in their development of preliminary ideas so as to prevent potential water quality degradation.

4. Implement the requirements of the 1990 Reauthorization of the Coastal Zone Management Act (CZMA) which requires the State Water Board and the California Coastal Commission to develop and implement an enforceable nonpoint source program in the coastal zone.

   The reauthorization of the CZMA, together with specific guidance from the US EPA and the National Oceanic & Atmospheric Administration (NOAA), requires coastal states to develop coastal nonpoint pollution control programs. These programs are to implement management measures for the control of land uses which contribute nonpoint source pollution to coastal waters. Management measures, which include specific measures for mitigating water quality impacts, are specified for the following land uses: agriculture; gazing; confined animal facilities; forestry; urban development; roads; marinas and recreational boating; hydromodification; and mines. The state's coastal program is to be considered for approval by the US EPA and NOAA in July 1995.

Revision of the NPSMP has been initiated. The revised NPSMP will go beyond the requirements of the Coastal Zone Management Act by specifying management measures that are applicable throughout the state. There will also be more of an emphasis placed on watershed based nonpoint source controls in the revised NPSMP. To develop these management measures, the State Board is forming Task Force Committees composed of experts in the various nonpoint source categories. The management measures developed by the Task Force Committee will be reviewed by an oversight committee made up of State and Regional Board staff prior to inclusion in the revised NPSMP. The anticipated date of completion of the revised NPSMP is in 1995.

Some major nonpoint source problems which have been addressed in the Santa Ana Region include:

- Urban runoff: addressed through the stormwater permitting program;
- Animal confinement facilities: addressed through the Dairy Regulatory Strategy;
- On-site disposal system: addressed through prohibitions and the Minimum Lot-Size Criteria; and
- Erosion/sedimentation in the Newport Bay watershed: addressed through the implementation of the Areawide 208 Plan.

Stormwater Program

The 1987 Clean Water Act amendments required the U.S. Environmental Protection Agency (US EPA) to establish regulations to control stormwater discharges associated with industrial activity, and discharges from large and medium municipal separate storm sewer systems. Large municipal separate storm sewer systems serve a population of 250,000 or more and medium municipal separate storm sewer systems serve a population of more than 100,000 but less than 250,000. On November 16, 1990, EPA published the final regulations that established the National Pollutant Discharge Elimination System (NPDES) permit requirements for discharges of stormwater from large and medium municipal separate storm sewer systems and stormwater discharges associated with industrial activities, including construction activities.

The stormwater NPDES permitting program is administered by the State Board and the Regional Boards.

A. Municipal Stormwater Discharge Permits

Prior to the promulgation of EPA's final regulations, the Santa Ana Regional Water Quality Control Board adopted areawide urban NPDES stormwater permits for each of the three counties in the Region. As shown in Table 5-9, as part of the areawide urban permits, the counties are named as the principal permittee and the incorporated cities are named as co-permittees. These permits require the development and

implementation of programs to identify and eliminate illegal/illicit discharges to municipal stormwater conveyance systems, the development and implementation of best management practices (BMPs) to reduce pollutants in stormwater and urban runoff, and the development and implementation of monitoring programs.

Table 5-9
Municipal
Stormwater Permits
Santa Ana Region

Municipality	Order Number	Date Issued
Orange County Environmental Management Agency, the County of Orange, and 23 incorporated cities	90-071 NPDES - CA8000180	7/12/90
Riverside County Flood Control and Water Conservation District, the County of Riverside, and 13 incorporated cities	90-104 NPDES - CA8000192	7/13/90
San Bernardino County Transportation and Flood Control Department, the County of San Bernardino, and 16 incorporated cities	90-136 NPDES - CA8000200	10/19/90

B. Industrial and Construction Stormwater Discharge Permits

The federal regulations identify eleven industrial categories which are subject to stormwater discharge permitting:

1. Facilities subject to stormwater effluent guidelines (40 CFR Subchapter N);
2. Manufacturing facilities;
3. Mining and Oil and Gas facilities;
4. Hazardous waste treatment, storage or disposal facilities;
5. Landfills, land application sites, and open dumps that receive industrial waste;
6. Recycling facilities such as metal scrap yards, battery reclaimers, salvage yards, and automobile yards;
7. Steam electric generating facilities;
8. Transportation facilities;
9. Sewage treatment plants;
10. Construction activities; and
11. Certain facilities if materials are exposed to stormwater.

As shown these categories include construction activities (#10), which are covered by a separate permit in the State of California (see below).

To satisfy the federal requirements, the State Board issued two general permits: the General Industrial Activities Stormwater Permit (State Board Order No. 91-13-DWQ as amended by State Board Order No. 92-12-DWQ); and the General Construction Activity Stormwater Permit (State Board Order No. 92-08-DWQ). Industrial facilities and proponents of construction projects must file a Notice of Intent (NOI) with the State Board to be covered under the applicable general permit.

The General Industrial Activities Stormwater Permit requires dischargers to comply with federal regulations to reduce or eliminate industrial stormwater pollution, to develop and implement a stormwater pollution prevention plan, and to perform monitoring of stormwater discharges. This permit covers stormwater discharges from all the listed categories of industrial activity, except construction activities.

The General Construction Activity Stormwater Permit addresses stormwater discharges associated with a construction activity where grading, clearing, and excavation results in a land disturbance of five acres of more. A stormwater discharge from a construction resulting in a land disturbance of less than five acres also requires a permit if the construction is a part of a larger common plan of development or sale.

The use of general permits to regulate these various types of stormwater discharges streamlines the permitting process, which greatly benefits the Regional Board. It is also the least costly way for a discharger to obtain a permit and comply with federal and state regulations.

For industrial and construction activities in the Region, it is the Regional Board's responsibility to enforce the General Industrial Activities and General Construction Activity stormwater permits. In addition to these general permits, the Regional Board has issued and will continue to issue individual permits for stormwater dischargers if warranted by the character of the discharges and/or sensitivity of the receiving waters.

Animal Confinement Facilities (Dairies)

As described earlier in this chapter, one of the most significant water quality problems confronting the region is increasing concentrations of TDS and nitrates in the groundwater. This problem is particularly acute in those groundwater subbasins without assimilative capacity, including the Chino II and III Groundwater Subbasins (Subbasins changed by December 22, 2004 amendment).

In 1989-90, the Regional Board conducted a special investigation of the salt balance problem in the Chino Basin, described in "Dairies and Their Relationship to Water Quality Problems in the Chino Basin" or Dairy Report [Ref. 10]. The findings of this study showed that while irrigated agriculture and municipal wastewater disposal are contributors to the degradation, wastes form dairies and other animal confinement facilities play an overwhelmingly significant role.

Dairy operations began in the Chino Basin about 40 years ago and continue intensively today. In fact, the Chino Basin contains the highest concentration of dairy animals found anywhere in the world. Within an area of about 15,000 acres, there are approximately 300 dairies, housing about 300,000 animals. These animals produce approximately 0.5 million tons (dry weight) per year of manure. Significant quantities of water are used to wash the cows prior to milking. Both this wastewater and the manure contain significant quantities of salts (TDS and nitrogen). The Regional Board's studies showed that close to 30,000 tons of salts reach Chino Basin groundwater every year as a result of the disposal of these dairy wastes.

Dairy operations and waste disposal practices can also affect the quality of surface waters. Discharges of washwater and/or runoff of stormwater which has come into contact with manure contribute salts and other pollutants to receiving streams, which ultimately flow into the Santa Ana River. While the Regional Board prohibits these discharges (with the exception of stormwater under certain conditions), these discharges do occur as a result of inadequate construction and maintenance of containment facilities. Drainage from upstream urban areas exacerbates this problem.

The quality of the Santa Ana River is affected indirectly as well: significant quantities of the poor quality groundwater in the Chino Basin rise to the surface and enter the River just upstream of Prado Dam. The TDS and nitrogen problems in the Santa Ana River, which are addressed by the implementation of wasteload allocations, have been described previously. The failure to address and correct the water quality problems in the Chino Basin could compromise the effectiveness of the water quality improvements implemented by the sewage treatment plants in response to those allocations.

The Regional Board initiated a regulatory program to address the water quality impacts of the salt loads from dairy operations in 1972. Waste discharge requirements are issued to all dairies and other significant animal confinement facilities. (See the Dairy Report for a detailed description of the Regional Board's waste discharge requirements). However, the Regional Board's studies demonstrated that changes in this regulatory program were necessary.

The Regional Board developed a revised regulatory strategy, working closely with dairy industry representatives. As described in the Dairy Report, it consists of a comprehensive, three part program. Part I is designed to address the present and future impacts from ongoing dairy activities. Part II addresses the impacts from past dairy activities, and Part III addresses the need for improved drainage facilities upstream of and within the dairy area. Although termed a "dairy" regulatory strategy, the strategy is intended to apply to <u>all</u> animal confinement facilities within the Chino Basin. The term "dairy" is used here for simplicity.

Part I. Dairy Waste Discharge Requirements: Impacts of Ongoing Operations

The first part of the strategy addresses dairy waste discharge requirements and the impacts of ongoing operations. Four specific changes to the dairy regulatory program are included: an improved manure tracking system; inclusion of groundwater monitoring requirements for dairy operators; submittal of engineered waste

management plans; and revision of waste discharge requirements to prohibit dairy waste disposal unless suitable offset programs are implemented.

1. Implementation of Manure Tracking and Reporting System

The Regional Board determined that the manure tracking system in use was not adequate to determine the full effects of dairy waste management practices on groundwater quality nor was it adequate to determine compliance with waste discharge requirements related to manure disposal.

In response, a new manure tracking manifest form was developed and is now being used. Dairy operators are required to complete the form and submit it annually in a report to the Regional Board.

2. Implementations of Groundwater Monitoring Requirements

Comprehensive groundwater quality data is necessary for planning mitigation activities in the Chino Basin. Groundwater monitoring requirements will be included in the waste discharge requirements for all dairy operators in the Chino Basin. The WDRs will provide the operators with the option of participating in an established, comprehensive groundwater monitoring program in lieu of their individual monitoring efforts. Such a monitoring program is now being conducted by the Chino Basin Watermaster.

3. Preparation of an Engineered Waste Management Plan as part of the Report of Waste Discharge

Historically, the Regional Board has required that dairy operators provide a general description of their proposed containment controls as part of the Report of Waste Discharge (ROWD). Experience has shown, however, that this is not adequate and that illegal discharges of manured water occur due to improper design, construction, and maintenance of containment controls.

To address this problem, the Regional Board now requires that a waste management plan be prepared by a registered engineer, member of the Soil Conservation Service or others who are suitably qualified. This plan must address containment of all washwater and stormwater runoff, as well as protection of the facility from inundation, as required by the waste discharge requirements. For any given property, the engineering plan must address necessary containment controls for the property as a whole, even in situations where some portion of that property is leased, subleased or operated by another party (for example, cultivation of agricultural crops by a farmer on a portion of dairy property).

Engineered waste management plans are required to be submitted as part of the ROWD for new or substantially modified dairy operations. These plans are also

required when the containment controls at facilities are known or suspected to be inadequate.

4. Revision of the Manure and Washwater Disposal Requirements

As noted earlier, the Chino II and III Groundwater Subbasins lack assimilative capacity for additional salt inputs. In basins without assimilative capacity, mineral increments are not permitted when regulating waste discharges (see preceding section on salt balance and assimilative capacity, State Board Order No. 73-4, the Rancho Caballero decision [Ref. 7]). To meet the Chino Basin groundwater objectives, the discharge of manure and dairy washwater and their application as fertilizer and irrigation water cannot be legally permitted.

The implications of prohibiting manure and washwater disposal are significant. Recognizing this, the strategy allows for the implementation of programs to offset the salt loads contributed by ongoing manure/washwater disposal. An offset program would work as follows: for every ton of salt that will reach groundwater as a result of continued disposal/application of manure or washwater within the Chino Basin, the dairy operator must remove an equivalent amount of salt from the Basin through participation in a desalter or other appropriate means. The offsets required of the dairy industry would depend on the industry's success in identifying acceptable methods of manure and wastewater disposal; the more manure and washwater that is removed form the basin, the less need there is for offset.

The strategy calls for the waste discharge requirements for dairy operators in the Chino Basin to "prohibit the disposal of manure and washwater, and their application as fertilizer or irrigation water in the Chino Basin unless the dairy operator participates in an offset program. The offset program must ensure that water quality impacts of continued manure and/or washwater disposal/application practices are mitigated."

Implementation of this element of the dairy regulatory strategy has been withheld since acceptable mitigation projects are now being developed. As described in the preceding section the selected TDS and nitrogen management plan (Alternative 5C) includes two desalters in the Chino Basin, which are being built by the Santa Ana Watershed Project Authority and other participating agencies. These desalters, though not designed or implemented specifically to address ongoing dairy salt loading, will provide sufficient groundwater treatment and salt loads identified in Alternative 5C. This includes the salt loads from present and future dairy operations and other agriculture, unsewered areas, and other sources.

Part II. Impacts of Past Dairy Operations

This part of the dairy regulatory strategy addresses the mitigation of water quality impacts caused by past discharges of dairy waste in the Chino Basin.

While the two desalters mentioned above should be adequate to offset present and future salt wasteloads, they will not provide sufficient groundwater treatment to address the historic contributions of salts from long-term dairy or other agricultural activities, municipal wastewater disposal, etc. These historic salt inputs must be addressed to protect the beneficial uses of the Basin's groundwaters and to prevent long-term adverse impacts to the Santa Ana River.

Additional desalters or other treatment facilities and strategies will be necessary. The implementation of these measures may have significant costs. To be equitable, each of the sources of TDS and nitrogen input to the Basin, including dairies, other types of agriculture, and municipalities, should assume its fair share of the Chino Basin cleanup costs. The dairy regulatory strategy incorporates the concept of shared responsibility and directs the use of this concept to develop an equitable approach to water quality correction in the Chino Basin.

A comprehensive study of water resources management in the Chino Basin is now being conducted. The study, the Chino Basin Water Resources Management Study, is funded by a task force which includes representatives of the Chino Basin Watermaster (composed of water users in the Chino Basin including the agricultural industry), Chino Basin Municipal Water District, Western Municipal Water District, the Santa Ana Watershed Project Authority, Metropolitan Water District, and the Regional Board. The goal of this study is to identify a water resources management plan which will provide for water quality protection, water demands are met, and the quality of the Santa Ana River is not adversely affected by outflow from the Basin.

Part III. Surface Water Quality Impacts: Control of Drainage in the Chino Agricultural Preserve

The third part of the dairy strategy addresses surface water drainage problems in the Chino Agricultural Preserve, where most of the dairies are located. These problems are caused both by inadequate and poorly maintained drainage facilities within the Preserve, and by inadequate controls on drainage from upstream urban areas.

Runoff from the rapidly developing areas upstream of the dairy area creates additional difficulties for many dairy operators in complying with the manured water containment requirements specified in their waste discharge requirements. A number of studies have been conducted to determine the best method of preventing urban stormwater runoff impacts in the dairy area. The most recent study, "Chino Agricultural Preserve Drainage and Land Use Study"[Ref. 11], was conducted with federal 205(j) planning funds and was completed in 1987. The recommended

solution to these urban drainage problems was the construction of a trapezoidal earth swale at the northern boundary of the dairy area (roughly, at Riverside Avenue, between Campus Avenue and the Cucamonga Creek flood control channel, just west of Archibald Avenue). This swale would intercept flows from upstream urban areas (cities of Ontario and Chino) and convey these flows to the Lower Cucamonga Spreading Grounds, adjacent to the Cucamonga Creek Channel.

To alleviate drainage problems in the dairy area and reduce surface water quality problems which result from dairy waste inputs, the following measures need to be implemented:

1. Riverside Avenue interceptor swale – San Bernardino County and/or the cities of Ontario and Chino should pursue the funding and implementation of the interceptor swale project at Riverside Avenue.
2. Other drainage controls – Both San Bernardino and Riverside counties and the cities tributary to the dairy area should identify and implement a coordinated program of drainage controls necessary to supplement the interceptor swale and prevent drainage problems within the dairy area.

These recommendations are directed to the counties and cities, rather than to the dairy industry. The counties are required to implement such best management practices (BMPs) as part of their NPDES stormwater permits.

Dairy Operations Outside the Chino Basin

Since the greatest concentration of dairies occurs in the Chino Basin, the dairy strategy has appropriately focused on mitigating the problems in this area. However, in recent years, many new dairies have been established elsewhere in the Region, specifically in the San Jacinto Basin, and this trend appears to be continuing. To prevent the recurrence of the groundwater quality problem now confronting the Region in the Chino Basin, an appropriate dairy waste management strategy for the San Jacinto Basin must be developed and implemented. The pattern of dairy land use, the quality of underlying groundwater, and the availability of assimilative capacity in the San Jacinto Groundwater Subbasins should be considered in more detail before recommending a complete dairy strategy. However, it is anticipated that the wastewater management plan, the manure tracking system, and the groundwater monitoring elements of the strategy recommended for the Chino Basin will also apply in the San Jacinto Basin.

Minimum Lot Size Requirements and Exemption Criteria for New Developments Using On-Site Septic Tank-Subsurface Leaching/Percolation Systems

The Santa Ana Region is characterized by dramatic population growth. Most of this population is concentrated in urban areas, where high density development on small lots is typical. Sanitary sewers are not available in many areas where rapid growth is occurring, so many of these high density developments use on-site septic tank-subsurface disposal systems for sewage disposal.

In 1989, the Regional Board investigated the relationship between these high density developments and the nitrate problems found in the groundwater of the Region [Ref. 12]. The findings showed that the use of high density subsurface disposal systems would cause or add to nitrate quality problems. To control these impacts, the Board found that it was necessary to limit the density of new subsurface systems.

On October 13, 1989, the Regional Board adopted Resolution No. 89-157, amending the Water Quality Control Plan to add a one-half acre minimum lot size requirement for new developments using on-site septic tank-subsurface leaching/percolation systems region-wide. Certain exemptions from the minimum lot size requirement were specified in Resolution No. 89-157. On December 7, 1990, the Regional Board adopted Resolution No. 90-158, which revised the exemption criteria. However, on June 7, 1991, the Regional Board adopted Resolution No. 91-51, rescinding Resolution No. 90-158 and revising the exemption criteria in Resolution No. 89-157. On July 16, 1993, the Regional Board adopted Resolution No. 93-40, revising the requirements and exemption criteria in Resolution No. 89-157, as amended by Resolution No. 91-51. Resolution No. 89-157, as amended by Resolution No. 93-40, stipulates the following:

1. A minimum lot size of one-half acre (average gross) per dwelling unit is required for new developments in the Region using on-site septic tank-subsurface leaching/percolation systems.

   A. The term “one-half acre” specified as the minimum lot size requirement means an average gross area of land of one-half acre per dwelling unit. Easements (including streets, curbs, commons, and greenbelts), or those portions thereof which are part of the property proposed for development shall be included in the calculation of the average gross area of land.

   B. A “new” development is defined as a proposed tract, parcel, industrial or commercial development for which:

      1. One or more of the following has not been granted on or prior to September 7, 1989:

         a. Conditional approval or approval of a tentative parcel or tract map by the local agency such as the county/city Planning Commission, City Council or the Board of Supervisors.

         b. A conditional use permit.

         c. Conditional approval or approval by the San Bernardino County Department of Environmental Health Services, Riverside County Department of Health Care Agency or other local agency; or

2. One or more of the conditional approvals or approvals listed under B.1., above, were granted on or prior to September 7, 1989 but had expired prior to September 7, 1989.

C. The minimum lot size requirement does not apply to existing developments where septic tank-subsurface disposal systems have been installed on or prior to September 7, 1989. Replacement of the existing septic tank-subsurface disposal systems shall be exempt from the minimum lot size requirements under the following conditions:

1. For Residential, Commercial and Industrial Developments

   Replacement of the existing septic tank-subsurface disposal systems is necessary to bring the system up to code as required by the local health care agencies and/or the building and safety departments.

2. For Single-Family Residential Only

   Replacement of the existing septic tank-subsurface disposal systems is proposed to allow additional flows resulting from additions to the existing dwelling unit. (This does not include any free-standing additional structures.)

   (Note: Board staff does not consider the number of bedrooms and/or bathrooms for existing or proposed single-family dwelling units in determining compliance with the exemption criteria.)

   a. An existing development on land zoned single-family residential will be considered as a new development if the addition of any free-standing structures which result in additional wastewater flows to the septic system is proposed. Commercial and/or industrial developments will be considered as new development if any additions to the existing structures are proposed which will result in additional wastewater flows to the septic system.

   b. For single-family residential developments, if the existing septic system could accommodate additional wastewater flows, then additional installations (rooms/bathroom) to these developments shall be exempt from the minimum lot size requirements.

D. Those tracts, parcels, industrial or commercial developments which have received one or more of the approvals listed in B.1., above, on or prior to September 7, 1989 are exempt from minimum lot size requirements for use of septic tank-subsurface disposal systems. However, those tracts, parcels, industrial or commercial developments which had received one or more of the approvals listed in B.1., above, but for which the approval had expired prior to

September 7, 1989 are considered as new development and are subject to the minimum lot size requirements.

E. Industrial/commercial developments are developments other than single-family residential developments. For new industrial commercial developments utilizing septic tank-subsurface disposal systems, the wastewater flow for each one-half acre gross area of land may not exceed that from a three-bedroom, two bathroom single-family dwelling unit. For determining compliance with this criterion, a flow rate of 300 gallons per day shall be considered as the flow equivalent to that from a 3-bedroom, 2-bathroom single-family dwelling. For industrial/commercial developments with lots smaller than one-half acre, this flow rate requirement shall be prorated. (For example, an industrial/commercial development on a one-quarter (1/4) acre parcel will be in compliance with this requirement if the wastewater flow does not exceed 150 gallons per day.)

F. This minimum lot size requirement does not affect the lot size criterion for continuing exemptions in prohibition areas (1 acre minimum).

G. This minimum lot size requirement does not preclude the prescription of more stringent lot size requirements in specific areas if it is determined necessary to protect water quality.

H. No exemptions shall be granted for new developments on lots less than one-half acre which are 200 feel or less from a sewer which could serve that tract/parcel, barring legal impediments to such use. All other developments shall be considered on sliding scale, *e.g.,* for each additional unit (any development which is more than a single-family dwelling), this requirement should be increased by 100 feet per dwelling unit. For example, a 10-lot subdivision shall be required to connect to a sewer if the sewer is within 1,100 feet (200 + 9 x 100 feet = 1,100 feet) of the proposed development barring legal impediments to connection to the sewer. For this subsection, a commercial/industrial development which produces a wastewater flow of up to 300 gallons per day would be considered equivalent to a single-family dwelling unit.

I. New lots of less than one-half acre may be formed by combining two or more lots which have received one of the approvals specified in Section B.1., above on or prior to September 7, 1989. Individually, these existing lots would be eligible for an exemption from the minimum lot size requirement. Developments on the combined lots may also be granted an exemption provided that the total number of units proposed for the new parcel is equal to or less than the total number of units proposed for the existing parcel. For the purposes of this subsection, a combined lot of less than one-half acre formed from two or more existing lots shall not be considered a new development.

J. Exemptions from the minimum lot size requirements for the use of septic tank-subsurface disposal systems on lots smaller than one-half acre may be granted if the following conditions are met:

   1. The project proponent implements an acceptable offset program. Under an offset program, the project proponent can proceed with development using septic systems on lots smaller than one-half acre if the proponent connects an equivalent number of septic systems to the sewer. The unsewered developments must be those which would not otherwise be required to connect to the sewer.

   2. If the septic systems (developments) proposed are not identical to the ones connected to the sewer (the offset), an engineering report shall be submitted certifying that the nitrogen loading rate from the proposed development(s) is(are) equivalent to or less than the nitrogen loading rate from the septic systems in the offset program.

   3. The proposed use of septic tank-subsurface disposal systems complies with the Regional Board's "Guidelines for Sewage Disposal from Land Developments,"

K. The project proponent may propose an alternative treatment system for sewage disposal as the basis for an exemption from the minimum lot size requirement. Each request for use of an alternative treatment system shall be reviewed on a case-by-case basis and submitted to the Regional Board for consideration.

Newport Bay Watershed

Water quality problems in Newport Bay were described in detail in reports prepared in response to Senate Concurrent Resolutions 38 and 88 [Ref. 16, 17]. These problems are essentially nonpoint source problems and fall into four major categories: 1) TMDL for sediment; 2) bacterial contamination; 3) eutrophication and 4) toxic substances contamination. Each of these problems have been or is being addressed by either local or state agencies. A brief description follows:

1.a Phase 1 of the TMDL for Sediment (Amended by Resolution 98-101)

The Total Maximum Daily Load for sediment in the Newport Bay/San Diego Creek Watershed includes the following quantifiable targets and Load Allocations that shall be implemented by the Cities (Irvine, Tustin, Lake Forest, Costa Mesa, Santa Ana and Newport Beach) and County responsible for the sediment discharged into stormwater and flood control conveyances under their control which discharge into San Diego Creek and/or Newport Bay.

1. Sediment control measures shall be implemented and maintained to ensure that sediment discharges into Newport Bay will not significantly change the existing acreages of aquatic, wildlife, and rare and endangered species habitat, and to maintain the navigational and non-contact recreational beneficial uses of the bay. The existing aquatic and wildlife habitat of the Upper Bay, which is comprised of approximately 210 acres of marine aquatic habitat, 214 acres of mudflat habitat, 277 acres of salt marsh, and 31 acres of riparian habitat within, and adjacent to**,** the 700 acre Upper Newport Bay Ecological Reserve and the existing navigational and recreational uses of Newport Bay, will be used by the Regional Board as a performance standard of the effectiveness of the sediment TMDL. If these acreages are changed by more than 1% as the result of sediment deposition, if the in-bay sediment basins or the in-channel sediment basins are not maintained, or if there are impacts to navigational and recreational uses, this will indicate that the local sediment control measures are not adequate to protect the beneficial uses provided by these areas, and the Board will reevaluate the sediment TMDL for Newport Bay and San Diego Creek. Since the intent of the sediment TMDL is to protect these beneficial uses, this quantifiable target will be used as the primary measurement of the success of the TMDL. In order to maintain the marine aquatic habitat of the Unit 1 and 2 Sediment Basins in Upper Newport Bay, a minimum depth of 7 feet below mean sea level shall be maintained**.** The Cities and County, acting through cooperative agreements under the Newport Bay Watershed Executive Committee, shall conduct bathymetric and vegetation surveys of Newport Bay no less than once every three years or as agreed upon by the Executive Officer. This information will be used to evaluate compliance with the acreage and depth targets. If these acreages are changed by more than 1% as the result of sediment deposition, if the minimum depth is not maintained**,** and if the 50% target sediment reduction described below is not achieved, the Regional Board may consider appropriate enforcement action.

2. It is recognized that the Department of Fish and Game, which is responsible for the management of the Reserve, may wish to modify the habitat composition and acreages of the Reserve to address wildlife needs. The habitat acreages identified above will be revised accordingly through the Basin Plan Amendment process.

3. The second quantifiable target is to reduce the annual average sediment load in the watershed from a total of approximately 250,000 tons per year to 125,000 tons per year, thereby reducing the sediment load to Newport Bay to approximately 62,500 tons per year and limiting sediment deposition in the drainages to approximately 62,500 tons per year. Sediment control measures shall be implemented and maintained to result in a 50% reduction in the current load of sediment in the Newport Bay/San Diego Creek Watershed within 10 years. The Regional Board will determine compliance with this target by calculating the annual average amount of suspended solids measured in San Diego Creek at Jamboree Boulevard and Campus Drive over a ten year period, and by evaluating the scour studies of the creek channels and topographic surveys of all the sediment control basins in the watershed to estimate the amount of deposition. Given that annual sediment deposition can vary widely based on weather and other conditions, it is appropriate to evaluate compliance with

the sediment reduction target as a 10 year running annual average of the suspended solids load measured in San Diego Creek at Jamboree Boulevard and Campus Drive. The Regional Board will compare this information to the bathymetric and scour studies information to determine if the monitoring data accurately reflects sediment deposition in the bay and creek channels and to determine compliance with this target.

4. Sediment control measures shall be implemented and maintained to comply with the following Load Allocations (implemented as 10-year running annual averages) for discharges of sediment to Newport Bay: 1) no more than 28,000 tons per year of sediment shall be discharged to Newport Bay from open space areas within the watershed, 2) no more than 19,000 tons per year shall be from agricultural land, 3) no more than 13,000 tons per year from construction sites, 4) no more than 2,500 tons per year discharged from urban areas. The Cities and County, acting through cooperative agreements under the Newport Bay Watershed Executive Committee, shall be required to provide a proposal for evaluating compliance with these individual land use type load allocations that is subject to the approval of the Executive Officer. This proposal shall be implemented upon approval of the Executive Officer.

5. Sediment control measures shall be implemented and maintained to comply with the following Load Allocations (implemented as 10-year running annual averages) in addition to the load allocations specified above for Newport Bay for discharges of sediment to tributaries of Newport Bay: 1) no more than 28,000 tons per year of sediment shall be discharged to San Diego Creek and its tributaries from open space areas within the watershed, 2) no more than 19,000 tons per year shall be discharged to San Diego Creek and its tributaries from agricultural land, 3) no more than 13,000 tons per year discharged to San Diego Creek and its tributaries from construction sites, 4) no more than 2,500 tons per year discharged to San Diego Creek and its tributaries from urban areas. The Cities and County, acting through cooperative agreements under the Newport Bay Watershed Executive Committee, shall be required to provide a proposal for evaluating compliance with these individual land use type load allocations that is subject to the approval of the Executive Officer. This proposal shall be implemented upon approval of the Executive Officer.

6. Sediment control measures shall be implemented such that Upper Newport Bay, including In-Bay Sediment Basins 1 and 2, need not be dredged more frequently than about once every 10 years, and the long term goal of Phase 1 of the TMDL for sediment is to reduce the frequency of dredging to once every 20 to 30 years. It is recognized that extreme rainfall conditions may necessitate more frequent dredging of the in-bay basins. The Regional Board will adopt waste discharge requirements for such dredging projects as the means of recommending Clean Water Act Section 401 Water Quality Certification for the dredging, and to ensure proper disposal of the dredged sediment.

7. Waste Discharge Requirements will be waived for maintenance dredging of flood control channels and drainages throughout the watershed in order to maintain flood control capacity, under the following conditions; 1) any vegetation removal or earthwork conducted between March 1 and September 1 shall be supervised by a

qualified biologist, approved by the Department of Fish and Game, to ensure compliance with the Endangered Species Act and Migratory Bird Treaty Act (this monitor shall have the authority to the stop or divert work to avoid impacts as necessary); and 2) the information in a complete application (report of waste discharge) demonstrates that the waiver criteria specified herein and in Regional Board Resolution No. 96-9, Waiver of Waste Discharge Requirements for Certain Types of Discharges, are met.

8. All in-channel and foothill sediment control basins throughout the drainages in the watershed shall be maintained to have at least 50% of design capacity available prior to November 15 of each year. Waste Discharge Requirements will be waived for sediment control basin maintenance activities under the following conditions: 1) any vegetation removal or earthwork conducted between March 1 and September 1 shall be supervised by a qualified biologist, approved by the Department of Fish and Game, to ensure compliance with the Endangered Species Act and Migratory Bird Treaty Act (this monitor shall have the authority to the stop or divert work to avoid impacts as necessary); 2) the use of herbicides for the control of vegetation within channels shall be avoided to the greatest extent practicable; and 3) the information in a complete application (report of waste discharge) demonstrates that the waiver criteria specified herein and in Regional Board Resolution No. 96-9, Waiver of Waste Discharge Requirements for Certain Types of Discharges, are met.

9. Waste Discharge Requirements will be waived for drainage channelization and stabilization projects on drainages within the watershed between the foothill sediment basins and Upper Newport Bay, under the following conditions: 1) while modifying the channels, no native riparian wetland vegetation shall be removed from within the basins or adjacent to the basins during the period between April 1 and September 1 of each year, in order to protect the federally listed least Bell's vireo, unless one to one mitigation is provided for the loss of the riparian and aquatic habitat; 2) any vegetation removal or earthwork conducted between March 1 and September 1 shall be supervised by a qualified biologist, approved by the Department of Fish and Game, to ensure compliance with the Endangered Species Act and Migratory Bird Treaty Acts (this monitor shall have the authority to stop or divert work to avoid impacts as necessary); and 3) the information in a complete application (report of waste discharge) demonstrates that the waiver criteria specified herein and in Regional Board Resolution No. 96-9, Waiver of Waste Discharge Requirements for Certain Types of Discharges, are met. The Regional Board will continue to work with the U.S. Army Corps of Engineers and other appropriate agencies towards the adoption of a Special Area Management Plan (or comparable plan) and General Permit for channel stabilization and flood control projects in accordance with Section 404 and 401 of the Clean Water Act. If a plan for completing the Special Area Management Plan by June 1, 1999 is not submitted to the Executive Officer by January 1, 1999, then the Executive Officer is directed to require, as an additional condition for obtaining a waiver, the completion of a comprehensive delineation of all the wetlands in the watershed and an evaluation of the cumulative impacts of projects to control sediment and the build-out of the watershed on the beneficial uses of these waters

of the State. This evaluation of the cumulative impacts must be completed, according to a plan acceptable to the Executive Officer, by June 1, 1999. Staff intends to use the delineation to propose a general permit to the Regional Board that will cover the kind of activities described in the amendment. Until the SAMP, or, alternatively, the comprehensive delineation described above, is completed, staff will continue to process individual permit applications for each project.

10. The Cities and County, acting through cooperative agreements under the Newport Bay Watershed Executive Committee, shall evaluate: 1) the amount of sediment being discharged from areas that contribute sediment to the total load discharged to Newport Bay; and 2) the effectiveness of the local sediment control plan (the 208 Plan). Where areas that contribute sediment are not under the jurisdiction of entities that are currently part of the Newport Bay Watershed Executive Committee, the Cities and County shall recommend to the Regional Board, if necessary, a new formula for allocating sediment loads and sharing of the costs of implementing the sediment control measures that will provide a 50% reduction in the current load of sediment. This evaluation shall, at a minimum, address the sediment loads from the Santa Ana-Delhi Channel, Bonita Creek, the federal lands within the watershed, and the City of Lake Forest.

These conditions shall not supersede more restrictive conditions of other agencies, such as the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, the State Department of Fish and Game, or other local agencies.

1.b Phase 2 of the TMDL for Sediment: Monitoring and Reassessment

The Newport Bay Watershed Executive Committee has developed an agreement whereby the County of Orange conducts the monitoring of sediment discharge within the watershed, with the costs shared by all parties, except the Department of Fish and Game. There has been no site specific monitoring of the various sources of sediment, so it is impossible to determine the effectiveness of specific BMPs. It is also too soon to reach any conclusions about the overall effectiveness of the local sediment control measures.

Since 1983, the County has monitored flow and total suspended solids at three locations and conducts periodic scour studies to evaluate sediment transport and deposition in the drainages within the watershed. In addition, the County has conducted two topographic surveys of the Upper Bay to determine sediment accumulation in the Upper Bay. The County intends to continue this monitoring program on behalf of the Newport Bay Watershed Executive Committee.

In addition, the Newport Bay Watershed Executive Committee shall:

1. Propose monitoring stations and schedules to be established to monitor the discharge of sediment from the Santa Ana-Delhi Channel and Bonita Canyon Creek into the Upper Bay and to evaluate the effectiveness of the BMPs being implemented in the watershed. This monitoring plan shall also propose monitoring to evaluate compliance with the Load Allocations for various land use types. This

monitoring plan will not become effective until approved by the Regional Board at a duly noticed public hearing as specified in Chapter 1.5, Division 3, Title 23 of the California Code of Regulations (Section 647 et seq.).

2. Propose monitoring stations and schedules to conduct the scour studies for the drainages in the watershed to be conducted annually. These surveys shall determine the amount of sediment accumulated in San Diego Creek and its tributaries, the in-channel sediment basins, the foothill sediment basins, and any other sediment basins in the watershed. The survey report shall be used to demonstrate whether the sediment basins have at least 50% capacity prior to November 15 of each year. This monitoring plan will not become effective until approved by the Regional Board at a duly noticed public hearing as specified in Chapter 1.5, Division 3, Title 23 of the California Code of Regulations (Section 647 et seq.).

3. Conduct topographic and vegetation surveys of Upper Newport Bay at least every three years, or as agreed upon by the Executive Officer, and after any year in which the monitoring for total suspended solids at Campus Drive shows that more than 250,000 tons of sediment were discharged to the Bay. In any year in which these surveys are required, the surveys shall be conducted by July 1. The results of these surveys shall be submitted as part of an annual report by December 31 of each year. The topographic and vegetation surveys shall be conducted to determine the amount of sediment deposition in the two In-Bay basins and the other marine aquatic habitat areas and to determine changes in the areal extent of the existing aquatic, wildlife and endangered species habitat areas.

4. Submit an annual report by December 31 of each year providing the monitoring data and information collected by the Newport Bay Watershed Executive Committee, including the flow and suspended solids monitoring data, the scour studies, the bathymetric and vegetation surveys, (and any additional information collected by the Committee). The monitoring shall be completed prior to July 1 of each year and this information shall be used to determine the maintenance requirements of all sediment basins in the watershed. Additionally, the Newport Bay Watershed Executive Committee shall submit a report by November 15 of each year certifying whether the sediment basins in the watershed have at least 50% capacity. The Regional Board will use the information collected by this monitoring program to evaluate the effectiveness of the sediment TMDL and will reevaluate the sediment TMDL as part of the Regional Board's Basin Planning process.

5. The monitoring data and information collected by the Newport Bay Watershed Executive Committee, including the flow and suspended solids monitoring data, the scour studies, the bathymetric surveys and the vegetation surveys, (and any additional information collected by the Newport Bay Watershed Executive Committee) shall be submitted in an annual report by December 31 of each year. The monitoring shall be completed prior to July 1 of each year and this

information shall be used to determine the maintenance requirements of all sediment basins in the watershed. Additionally, the Newport Bay Watershed Executive Committee shall submit a report by November 15 of each year certifying whether the sediment basins in the watershed have at least 50% capacity. The Regional Board will use the information collected by this monitoring program to evaluate the effectiveness of the sediment TMDL and will reevaluate the sediment TMDL as part of the Board's Basin Planning process. (End of Amendment Resolution No. 98-101)

2. Bacterial Contamination

Bacterial contamination of the waters of Newport Bay can directly affect two designated beneficial uses: water-contact recreation (**REC-1**) and shellfish harvesting (**SHEL**). The Orange County Health Care Agency (OCHCA) conducts routine bacteriological monitoring and more detailed sanitary surveys as necessary, and is responsible for closure of areas to recreational and shellfish harvesting uses if warranted by the results.

Because of consistently high levels of total coliform bacteria, the upper portion of Upper Newport Bay (Upper Bay) has been closed to these uses since 1974. In 1978, the shellfish harvesting prohibition area was expanded to include all of the Upper Bay, and the OCHCA generally advises against the consumption of shellfish harvested anywhere in the Bay. Bacterial objectives established to protect shellfish harvesting activities are rarely met in the Bay. (Fecal coliform objectives for the protection of shellfish harvesting and water-contact recreation are shown in Chapter 4, “Enclosed Bays and Estuaries”. The OCHCA has relied on total coliform standards specified in the California Health and Safety Code. Fecal coliform are a subset of total coliform.). Certain areas in the lower parts of the Upper Bay and in Lower Newport Bay (Lower Bay) are also closed to water-contact recreation on a temporary basis, generally in response to storms. In these areas, there is generally good compliance with water-contact recreation bacterial objectives in the summer.

Data collected by the OCHCA demonstrate that tributary inflows, composed of urban and agricultural runoff, including stormwater, are the principal sources of coliform input to the Bay. As expected, there are more violations of bacterial standards in the Bay during wet weather, when tributary flows are higher, than in dry weather. There are few data on the exact sources of the coliform in this runoff. Coliform has diverse origins, including: manure fertilizers which may be applied to agricultural crops and to commercial and residential landscaping; the fecal wastes of humans, household pets and wildlife; and other sources. Special investigations by OCHCA have demonstrated that food wastes are a significant source of coliform. Many restaurants wash down equipment and floor mats into storm drains tributary to the Bay and may improperly dispose of food waste such that it eventually washes into the Bay. Such discharges likely contribute to the chronic bacterial quality problems in certain parts of the Bay.

Another source of bacterial input to the Bay is the discharge of vessel sanitary wastes. Newport Bay has been designated a no-discharge harbor for vessel sanitary wastes since 1976. Despite this prohibition, discharges of these wastes have continued to

occur. Since these wastes are of human origin, they pose a potentially significant public health threat.

The Regional Board, the City of Newport Beach (City), the County of Orange, the City of Newport Beach Harbor Quality Committee, and other parties have taken or stimulated actions to enforce the vessel waste discharge prohibition. The principal focus of these efforts has been to make compliance with the prohibition convenient and therefore more likely. Vessel waste pumpouts have been installed at key locations around the Bay and are inspected routinely by the OCHCA. A City ordinance addresses people-intensive boating activities to ensure proper disposal of sanitary wastes. The ordinance requires that sailing clubs, harbor tour, and boat charter operations install pumpouts for their vessels. Another City ordinance addresses vessel waste disposal by persons living on their boats. Efforts have also been made to ensure that there are adequate public rest rooms onshore. The City also sponsors an extensive public education campaign designed to advise both residents and visitors of the discharge prohibition, the significance of violations, and of the location of pumpouts and rest room facilities. The effectiveness of these extensive vessel waste control efforts is not known.

As noted, the fecal waste of wildlife, including waterfowl that inhabit the Bay and its environs, is a source of coliform input. The fecal coliform from these natural sources may contribute to the violations of water quality objectives and the loss of beneficial uses, but it is currently unknown to what extent these natural sources contribute to, or cause, the violations of bacterial quality objectives in Newport Bay.

Reports prepared by Regional Board staff describe the bacterial quality problems in the Bay in greater detail and discuss the technical basis for the fecal coliform TMDL that follows (21, 22). Implementation of this TMDL is expected to address these bacterial quality problems and to assure attainment of water quality standards, that is, compliance with water quality objectives and protection of beneficial uses.

3.a. Fecal Coliform TMDL (Amended by Resolution No. 99-10)

A prioritized, phased approach to the control of bacterial quality in the Bay is specified in this TMDL. This approach is appropriate, given the complexity of the problem, the paucity of relevant data on bacterial sources and fate, the expected difficulties in identifying and implementing appropriate control measures, and uncertainty regarding the nature and attainability of the SHEL use in the Bay. The phased approach is intended to allow for additional monitoring and assessment to address areas of uncertainty and for future revision and refinement of the TMDL as warranted by these studies.

Table 5-9f summarizes the TMDL, Waste Load Allocations (WLAs) for point sources of fecal coliform inputs and Load Allocations (LAs) for nonpoint source inputs. As shown, the TMDL, WLAs and LAs are established to assure compliance with water contact recreation standards no later than December 30, 2014 and with shellfish standards no later than December 30, 2019. WLAs are specified for vessel waste and urban runoff, including stormwater, the quality of which is regulated under a County-wide NPDES

permit issued by the Regional Board. This runoff is thus regulated as a point source, even though it is diffuse in origin. LAs are specified for fecal coliform inputs from agricultural runoff, including stormwater, and natural sources. The TMDL is to be adjusted, as appropriate, based upon completion of the studies contained in Table 5-9g. Upon completion of these studies, an updated TMDL report will be prepared summarizing the results of the studies and making recommendations regarding implementation of the TMDL. The results of the studies may lead to recommendations for changes to the TMDL specified in Table 5-9f to assure compliance with existing Basin Plan standards (objectives and beneficial uses). The study results may also lead to recommendations for changes to the Basin Plan objectives and/or beneficial uses. If such standards changes are approved through the Basin Plan amendment process, then appropriate changes to the TMDL would be required to assure attainment of the revised standards. Revision of the TMDL, if appropriate, would also be considered through the Basin Plan amendment process.

Upon completion and consideration of the studies and any appropriate Basin Plan amendments, a plan for compliance with the TMDL specified in Table 5-9f, or with an approved amended TMDL, will be established. It is expected that this plan will specify a phased compliance approach, based on consideration of such factors as geographic location, the priority assigned by the Regional Board to specific locations for control actions (see Section 3.a.ii, “Beneficial Use Assessment”), season, etc. Interim WLAs, LAs and compliance dates that lead to ultimate compliance with the TMDL will be established.

The TMDL and its allocations contain a significant margin of safety. The margin of safety can be either incorporated implicitly through analytical approaches and assumptions used to develop the TMDL or added explicitly as a separate component of the TMDL. A substantial margin of safety is implicitly incorporated in the TMDL in the fact that the TMDL does not apply criteria for dilution, natural die-off, and tidal flushing. The TMDL, WLAs, and LAs are established at concentrations equivalent to the water quality objectives.

Table 5-9f: Total Maximum Daily Load, Waste Load Allocations, and Load Allocations for Fecal Coliform in Newport Bay

Total Maximum Daily Load for Fecal Coliform In Newport Bay	**Waste Load Allocations for Fecal Coliform in Urban Runoff, including stormwater, Discharges to Newport Bay**	**Load Allocations for Fecal Coliform in Agricultural Runoff, including stormwater, Discharges to Newport Bay**	**Load Allocations for Fecal Coliform from Natural Sources in all Discharges to Newport Bay**	**Waste Load Allocations for Vessel Waste**
As soon as possible but no later than (14 years after State TMDL Approval)*			**In Effect**	**In Effect**
5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/ 100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	0 MPN/100 mL No discharge.
As soon as possible but no later than (20 years after State TMDL Approval)*				**In Effect**
Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	0 MPN/100 mL No discharge.

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
Task 1	Routine Monitoring Program (Section 3.a.ii.a) a) Submit Proposed Routine Monitoring Plan(s)[1] b) Implement Routine Monitoring Plan(s) c) Submit Monthly and Annual Reports (Reporting Period: April 1-March 31)	 a) (Within 30 days)[2] b) Upon Regional Board Approval of Plan(s) c) Monthly within 30 days, Annual Report by September 1
Task 2	Water Quality Model for Bacterial Indicators (Section 3.a.ii.b) a) Submit Proposed Model Development Plan b) Submit Calibrated Model and Model Documentation	 a) (Within 30 days) [2] b) 13 months after Regional Board approval of plan(s)
Task 3	Beneficial Use Assessment Plan (Section 3.a.ii.c) Submit Proposed Assessment Plan for: a) REC-1 b) SHEL	 a) (Within 30 days) [2] b) (Within 13 months) [2]
Task 4	Beneficial Use Assessment Report (3.a.ii.c) Submit Beneficial Use Assessment Report for: a) REC-1 b) SHEL	 a) 13 months after Regional Board approval of plan(s) b) 13 months after Regional Board approval of plan(s)
Task 5	Source Identification and Characterization Plan(s) (Section 3.a.ii.d) Submit Proposed Source Identification Plans for: a) The Dunes Resort b) Urban Runoff (including stormwater) c) Agriculture (including stormwater) d) Natural Sources	 a) (Within 60 days) [2] b) (Within 60 days) [2] c) (Within 3 months) [2] d) (Within 3 months) [2]

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As Soon As Possible but No Later Than
Task 6	Source Identification and Characterization Reports (Section 3.a.ii.d) Submit Source Identification and Characterization Reports for: a) The Dunes Resort b) Urban Runoff (including stormwater) c) Agriculture (including stormwater) d) Natural Sources	 a) 7 months after Regional Board approval of plan(s) b) 13 months after Regional Board approval of plan(s) c) 16 months after Regional Board approval of plan(s) d) 16 months after Regional Board approval of plan(s)
Task 7	Evaluation of Vessel Waste Program (Section 3.a.ii.e) a) Submit Proposed Plan for Evaluating the Current Vessel Waste Program b) Submit Report on the Evaluation of the Vessel Waste Program	 a) (Within 3 months) [2] b) 12 months after Regional Board approval of plan
Task 8	TMDL, WLA, and LA Evaluation and Source Monitoring Program (Section 3.a.ii.f) a) Submit Proposed Evaluation and Source Monitoring Program Plan(s) b) Implement Evaluation and Source Monitoring Plan(s) c) Submit Monthly and Annual Reports (Reporting Period: April 1-March 31)	 a) 3 months after completion of Tasks 2, 4a, and 6 b) Upon Regional Board approval of plan(s) c) Monthly within 30 days, Annual Report by September 1
Task 9	Updated TMDL Report Submit updated TMDL report for: a) REC-1 b) SHEL	 a) 6 months after completion of Tasks 2, 4a, 6, and 7 b) 6 months after completion of Tasks 2, 4b, 6, and 7

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As Soon As Possible but No Later Than
Task 10	Adjust TMDL, if necessary; adopt interim WLAs, LAs, and Compliance Dates (Section 3.a.ii.h) a) REC-1 b) SHEL	 a) 12 months after completion of Updated TMDL Report for REC-1 (Task 9.a) b) 12 months after completion of Updated TMDL Report for SHEL (Task 9.b)
[1]Note: Provided that the monitoring program plan(s) fulfills the minimum requirements specified in this TMDL, approval of the TMDL shall constitute Regional Board approval of the monitoring program plan(s).		
[2]Note: Within specified time periods of State TMDL approval (i.e., approval by the Regional Board, the State Water Resources Control Board, and the Office of Administrative Law). Upon State TMDL approval, this parenthetical "formula" will be replaced by the date certain, based upon the date of approval.		

3.a.i. TMDL Implementation

As soon as possible but no later than the dates specified in Table 5-9g, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach and agricultural operators in the Newport Bay watershed shall submit the plans and schedules shown in Table 5-9g and described in Section 3.a.ii. Subsequent phases of TMDL implementation shall take into account the results of the monitoring and assessment efforts required by the initial study phase of the TMDL implementation plan and other relevant studies.

The following sections describe the requirements for the submittal of plans by dischargers in the Newport Bay watershed to complete specific monitoring, investigations and analyses. In each and every case, the plans submitted by the named dischargers will be considered for approval by the Regional Board at a duly noticed public hearing as specified in Chapter 1.5, Division 3, Title 23 of the California Code of Regulations (Section 647 et seq.). The plans are to be implemented upon Regional Board approval and completed as specified in Table 5-9g.

3.a.ii. Monitoring and Assessment

Routine monitoring and special investigations and analyses are an important part of this phased TMDL. Routine monitoring is necessary to assess compliance with the bacterial quality objectives in the Bay and with the WLAs and LAs specified in the TMDL. Special investigations and analyses are needed to identify and characterize sources of fecal coliform input and to determine their fate in the Bay so that appropriate control measures can be developed and implemented. The effectiveness of current and future bacterial control measures needs to be evaluated. The results of these studies may warrant future changes to this TMDL.

3.a.ii.a. Routine Monitoring

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for routine monitoring to determine compliance with the bacterial quality objectives in the Bay.

At a minimum, the proposed plan shall include the collection of five (5) samples/30-days at the stations specified in Table 5-9h and shown in Figure 5-1 and analysis of the samples for total and fecal coliform and enterococci. Reports of the collected data shall be submitted monthly. An annual report summarizing the data collected for the year and evaluating compliance with the water quality objectives shall be submitted by September 1 of each year.

In lieu of this coordinated, regional monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group plan to conduct routine monitoring in areas solely within their jurisdiction to determine compliance with the bacterial objectives in the Bay (if appropriate). Any such individual or group plans shall also be submitted by January 30, 2000. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with water quality objectives shall be submitted by September 1 of each year.

The monitoring plan(s) shall be implemented upon Regional Board approval.

Table 5-9h

Newport Bay Sampling Stations for Routine Compliance Monitoring with Bacterial Quality Objectives (see Figure 1 for Station Locations)

Ski Zone	33rd Street	Park Avenue
Vaughns Launch	Rhine Channel	Via Genoa
Northstar Beach	De Anza	Alvarado/Bay Is.
Abalone Avenue	Promontory Pt.	10th Street
Dunes East	Bayshore Beach	15th Street
Dunes Middle	Onyx Avenue	19th Street
Dunes West	Garnet Avenue	Lido Island Yacht Club
Dunes North	Ruby Avenue	Harbor Patrol
43rd Street	Sapphire Avenue	N Street Beach
38th Street	Newport Blvd. Bridge	Rocky Point
San Diego Creek @ Campus Dr.	Santa Ana Delhi Channel	Big Canyon Wash
Backbay Dr. Drain		

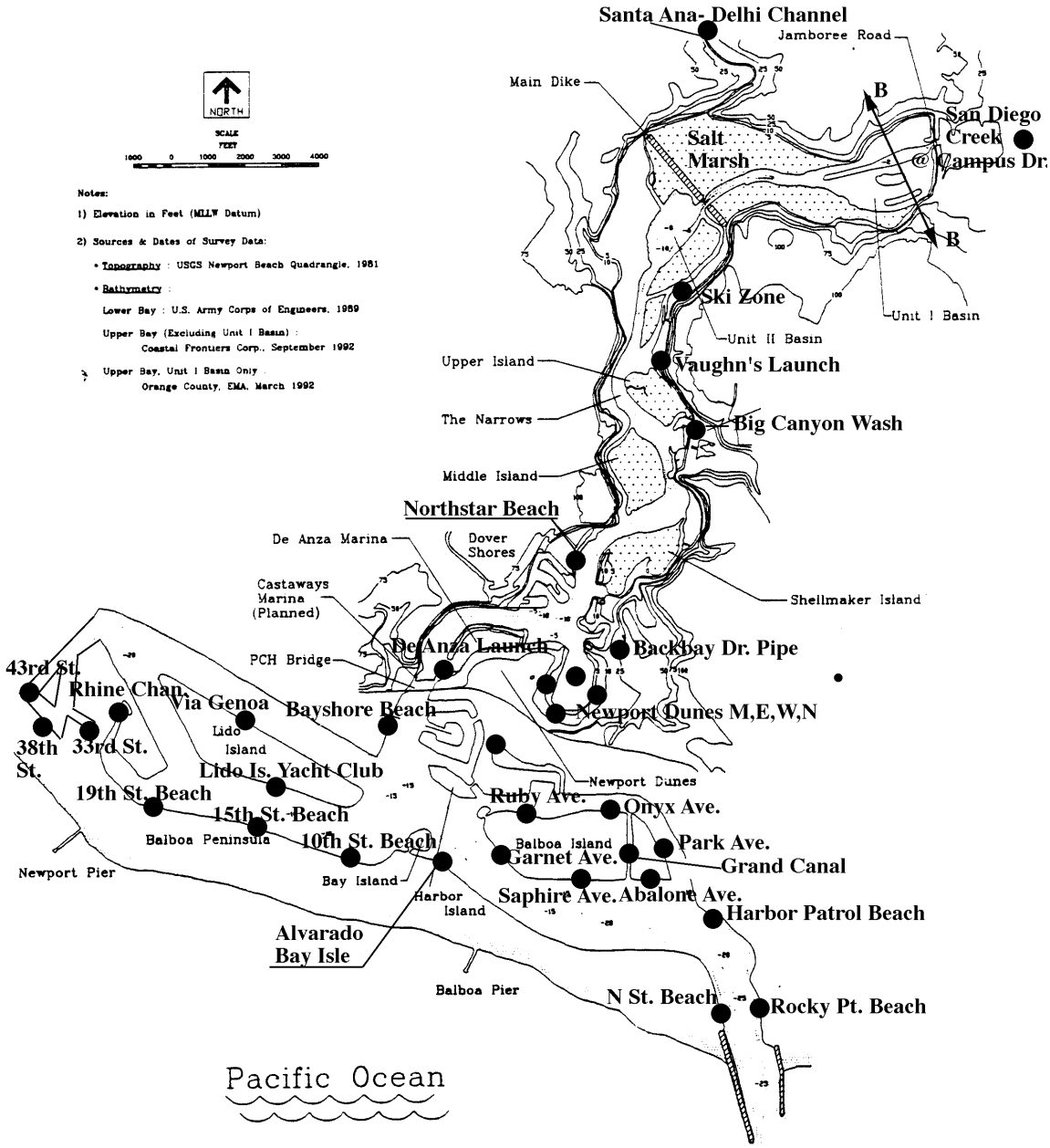


Figure 5-1: Newport Bay Bacterial Quality Monitoring Stations

3.a.ii.b. Fate of Bacterial Inputs

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach and the agricultural operators in the Newport Bay watershed shall submit a plan for the development and submittal of a water quality model to be completed by 13 months after Regional Board approval of the plan. The model shall be capable of analysis of fecal coliform inputs to Newport Bay, the fate of those inputs, and the effect of those inputs on compliance with bacterial quality objectives in the Bay.

3.a.ii.c. Beneficial Use Assessment

By January 30, 2000, the County of Orange , the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify water contact recreation activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the water contact recreation beneficial use assessment.

By March 1, 2001, the County of Orange , the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify shellfish harvesting activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the shellfish harvesting beneficial use assessment.

The beneficial use assessment reports shall contain recommendations for prioritizing areas within Newport Bay for purposes of evaluation and implementation of cost-effective and reasonable control actions as part of the TMDL process. The Regional Board will consider these recommendations and make its determinations regarding high priority water contact recreation and shellfish harvesting areas at a duly noticed public hearing. These determinations will be considered in establishing interim WLAs and LAs and compliance dates (Task 10, Table 5-9g).

3.a.ii.d. Source Identification and Characterization

By March 1, 2000 the County of Orange and the City of Newport Beach shall submit a proposed plan for a program, to be completed within 7 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to The Dunes Resort. In lieu of this coordinated plan, each of these parties may submit an individual plan to identify and characterize fecal coliform inputs to The Dunes Resort. Any such individual plan shall also be submitted by March 1, 2000 and completed within 7 months after Regional Board approval of the plan(s).

By (60 days after State TMDL approval),* the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 13 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to Newport Bay from urban runoff, including stormwater. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from urban runoff from areas within its jurisdiction. Any such individual or group plan shall also be submitted by (60 days after State TMDL approval)* and completed within 13 months after Regional Board approval of the plan(s).

By April 1, 2000, the agricultural operators in the Newport Bay watershed shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from agricultural runoff, including stormwater. In lieu of this coordinated plan, one or more of the agricultural operators may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from agricultural runoff from areas within their jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000, and completed within 16 months after Regional Board approval of the plan(s).

By April 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from natural sources. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from natural sources from areas within its jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s).

3.a.ii.e. Evaluation of Vessel Waste Control Program

By April 1, 2000 the County of Orange and the City of Newport Beach shall submit a plan to complete, by one year after Regional Board approval of the plan, an assessment of the effectiveness of the vessel waste control program implemented by those

agencies in Newport Bay. The plan shall be implemented upon approval by the Regional Board. A report of the study results shall be submitted, together with recommendations for changes to the vessel waste program necessary to ensure compliance with this TMDL.

The Regional Board will consider appropriate changes to the vessel waste control program. These changes shall be implemented in accordance with a schedule to be established by the Regional Board.

3.a.ii.f. TMDL, WLA and LA Evaluation and Source Monitoring Program

By (3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g)* the County of Orange, the Cities of Tustin, Irvine, Costa Mesa Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for evaluation and source monitoring to determine compliance with the WLAs and LAs specified in Table 5-9f. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to conduct TMDL, WLA, LA and Source Evaluation monitoring from areas solely within their jurisdiction. Any such individual or group plan shall also be submitted by (3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g).* Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with WLAs and LAs shall be submitted by September 1 of each year. The annual report shall also include an evaluation of the effectiveness of control measures implemented to control sources of fecal coliform, and recommendations for any changes to the control measures needed to ensure compliance with the TMDL, WLAs, and LAs.
The evaluation and source monitoring plan(s) shall be implemented upon Regional Board approval.

3.a.ii.g. Updated TMDL Report

The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall submit Updated TMDL Reports as specified in Table 5-9g. These updated TMDL reports shall, at a minimum, integrate and evaluate the results of the studies required in Table 5-9g (Task 1 – 7). The reports shall include recommendations for revisions to the TMDL, if appropriate and for interim WLAs, LAs and compliance schedules

3.a.ii.h. Adjust TMDL; Adopt Interim WLA, LAs and Compliance Dates

Based on the results of the studies required by Table 5-9g and recommendations made in the Updated TMDL Reports, changes to the TMDL for fecal coliform may be warranted. Such changes would be considered through the Basin Plan Amendment process. Upon completion and consideration of the studies and any appropriate Basin Plan amendments, interim WLAs and LAs that lead to ultimate compliance with the TMDL specified in Table 5-9f, or with an approved amended TMDL, will be established with interim compliance dates. Schedules will also be established for submittal of implementation plans for control measures to achieve compliance with these WLAs, LAs, and compliance dates. These implementation plans will be considered by the Regional Board at a duly noticed public hearing.

The Regional Board is committed to the review of this TMDL every three years or more frequently if warranted by these or other studies. The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Lake Forest, and Newport Beach, The Irvine Company and the Irvine Ranch Water District have undertaken to prepare a health risk assessment for Newport Bay for water contact recreation and shellfish harvesting beneficial uses. This study will evaluate whether exceedances of fecal coliform objectives correlates with actual impairment of beneficial uses and may recommend revisions to the Basin Plan objectives and/or beneficial use designations. Because this study is in progress, it is not required by this TMDL implementation plan, but will be considered in conjunction with the studies required by the implementation plan.
(End of Resolution No. 99-10)

4. Eutrophication (Amended by Resolution No. 98-9)

Nutrient loading to the Bay, particularly from the San Diego Creek watershed, contributes to seasonal algal blooms which can create a recreational and aesthetic nuisance. These algal blooms may also adversely affect wildlife.

The nutrient TMDL for the Newport Bay/San Diego Creek Watershed distributes the portions of the waterbody's assimilative capacity to various pollution sources so that the waterbody achieves its water quality standards. The Regional Board supports the trading of pollutant allocations among sources where appropriate. Trading can take place between point/point, point/nonpoint, and nonpoint/nonpoint pollutant sources. Optimizing alternative point and nonpoint control strategies through allocation tradeoffs may be a cost effective way to achieve pollution reduction benefits.

While there are a number of sources of nutrient input, tailwaters from the irrigation of agricultural crops and from several commercial nurseries in the watershed have been the predominant source. The Regional Board issued Waste Discharge Requirements to the three nurseries, requiring substantial reductions in their nutrient loads. Significant improvements have been achieved by these nurseries, largely due to the implementation of drip irrigation systems (which greatly reduce the amount of tailwater) and/or recycle systems. Installation of drip irrigation systems for other agricultural crops

has also significantly reduced the volume of nutrient-laden tailwaters. These improvements, coupled with the increased tidal flushing caused by the in-bay basins, appears to have resulted in a substantial downward trend in nitrate concentrations in the Bay. However, algal blooms are still occurring in Newport Bay and San Diego Creek. As a result, Newport Bay and San Diego Creek are listed as water quality impaired due to nutrients pursuant to Section 303(d) of the Clean Water Act. A nutrient TMDL to address this problem for Newport Bay and San Diego Creek is described in the following sections.

The hydrodynamic, sediment transport, and water quality models of Newport Bay being jointly developed by the U.S. Army Corps of Engineers and the Regional Board will be used in the future to further refine the algae and nutrient relationships in the Bay. These refinements will be considered in future reviews and revisions of the nutrient TMDL.

2.a. Quantifiable Nutrient Targets

The annual loading of total nitrogen and phosphorus to Newport Bay shall be reduced by 50% by 2012. The seasonal and annual loading targets are listed in Table 5-9a.

Table 5-9a Summary of Loading Targets and Compliance Time Schedules.

TMDL	**December 31, 2002[5]**	**December 31, 2007[5]**	**December 31, 2012[5]**
Newport Bay Watershed Total Nitrogen - Summer Load[1]	200,097 lbs.	153,861 lbs.	
Newport Bay Watershed Total Nitrogen - Winter Load[2]			144,364 lbs.
Newport Bay Watershed Total Phosphorus - Annual Load[3]	86,912 lbs.	62,080 lbs.	
San Diego Creek, Reach 2 Total Nitrogen - Daily Load[4]			14 lbs.

1 Total nitrogen summer loading limit applies between April 1 and September 30.

2 Total nitrogen winter loading limit applies between October 1 and March 31 when the mean daily flow rate at San Diego Creek at Campus Drive is below 50 cubic feet per second (cfs), and when the mean daily flow rate in San Diego Creek at Campus Drive is above 50 cubic feet per second (cfs), but not as the result of precipitation.

3 Total phosphorus annual loading is the sum of summer and winter loading during all daily flow rates.

4 Total nitrogen daily loading limit applies when the mean daily flow rate at San Diego Creek at Culver Drive is below 25 cubic feet per second (cfs), and when the mean daily flow rate in San Diego Creek at Culver Drive is above 25 cubic feet per second (cfs), but not as the result of precipitation.

5 Compliance to be achieved no later than this date. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.

The margin of safety of the nutrient TMDL is implicit through the use of conservative assumptions. These conservative assumptions include controlling all forms of nitrogen and phosphorus and controlling seasonal and annual loading.

Load Allocations

The 5, 10, and 15 year seasonal load allocations of total nitrogen for the Newport Bay Watershed are presented in Table 5-9b. The 5 and 10-year annual total phosphorus load allocations for the Newport Bay Watershed are presented in Table 5-9c. The 15 year daily total nitrogen load allocations for San Diego Creek, Reach 2 are presented in Table 5-9d. The nutrient load reduction targets will be incorporated into waste discharge requirements as effluent limits, load allocations, and waste load allocations as necessary to ensure that:

a. the total inorganic nitrogen and narrative water quality objectives for Newport Bay and San Diego Creek are achieved

b. Clean Water Act requirements for the implementation of a TMDL are satisfied

Table 5-9b Seasonal Load Allocations of Total Nitrogen for the Newport Bay Watershed.

Nutrient TMDL	1990-1997 Loading	2002 Allocation[8]	2002 Summer Allocation (April-Sept)[8]	2007 Allocation[8]	2007 Summer Allocation (April-Sept)[8]	2012 Allocation[8]	2012 Winter Allocation (Oct-Mar)[7, 8, 11]
Newport Bay Watershed	lbs/year TN[2]	lbs/day TN[10]	lbs/season TN	lbs/day TN[10]	lbs/season TN	lbs/day TN[10]	lbs/season TN
Wasteload Allocation							
Hines Nurseries	96,360 TIN[1]	224	40,992	211	38,613	211	14,227
Bordiers Nursery	30,660 TIN	71	12,993	67	12,261	67	4,518
El Modeno Gardens	18,250 TIN	43	7,869	40	7,320	40	2,697
Unpermitted nurseries	-----[3]	30	5,490	24	4,392	24	1,618
Nursery subtotal			67,344		62,586		23,060
IRWD WWSP (permanent discharge)[9]	0	62		62		62	4,181
Silverado Constructors ETC[4]	0	141	25,671	141	25,671	141	9,459
Urban runoff	277,131[6]		20,785		16,628		55,442
Wasteload Allocation			113,800		104,885		92,142
Load Allocation							
Agricultural discharges	328,040[6]		22,963		11,481		38,283
Undefined sources (Open space, atmospheric deposition, rising groundwater, groundwater cleanup/dewatering, in-bay nitrogen)	-----[3]		63,334		37,495		13,939
Load Allocation			86,297		48,976		52,222
Total	1,087,000[5]		200,097		153,861		144,364
			5 year target		10 year target		15 year target

1 TIN = (NO3+NH3).
2 TN = (TIN + Organic N).
3 Unknown.
4 Wasteload allocation of a 50% reduction in nitrogen concentration upon commencement of discharge
5 1990-1997 annual average (summer loading and winter loading).
6 Estimated annual average (summer and winter loading).
7 Total nitrogen winter loading limit applies between October 1 and March 31 when the mean daily flow rate at San Diego Creek at Campus Drive is below 50 cubic feet per second (cfs), and when the mean daily flow rate in San Diego Creek at Campus Drive is above 50 cubic feet per second (cfs), but not as the result of precipitation.
8 Compliance to be achieved no later than this date. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.
9 Daily load limit applies upon commencement of discharge.
10 Lbs/day TN (monthly average).
11 Assumes 67 non-storm days.

Table 5-9c Annual Total Phosphorous Load Allocations For The Newport Bay Watershed.

	2002 Allocation lbs/year TP[1]	**2007 Allocation lbs/year TP[1]**
TMDL	86,912	62,080
Urban areas	4,102	2,960
Construction sites	17,974	12,810
Waste Load Allocation	22,076	15,770
Agricultural areas	26,196	18,720
Open space	38,640	27,590
Load Allocation	64,836	46,310

[1] Compliance to be achieved no later than this date. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.

Table 5-9d Annual Total Nitrogen Load Allocations For San Diego Creek, Reach 2 During Non-Storm Conditions.[1]

	2012 Allocation lbs/day TN[2]
TMDL	14 lbs/day (TN)
Waste Load Allocation (Urban runoff)	5.5 lbs/day (TN)
Load Allocation (Nurseries, agriculture, undefined sources)	8.5 lbs/day (TN)

[1] Total nitrogen loading limit applies when the mean daily flow rate at San Diego Creek at Culver Drive is below 25 cubic feet per second (cfs), and when the mean daily flow rate in San Diego Creek at Culver Drive is above 25 cubic feet per second (cfs), but not as the result of precipitation.

[2] Compliance to be achieved no later than this date. The Regional Board may require earlier compliance with these targets when it is feasible and reasonable.

2.b. Phase I of the Nutrient TMDL

1. Review and Revision of Water Quality Objectives

By December 31, 2000, the Regional Board shall review, and revise as necessary, the numeric water quality objectives for total inorganic nitrogen for San Diego Creek, Reaches 1 and 2. The Regional Board shall also examine the appropriateness of establishing numeric water quality objectives for phosphorus for San Diego Creek, Reaches 1 and 2.

2. Establish New Waste Discharge Requirements

By December 31, 1999, the Regional Board shall issue new Waste Discharge Requirements (WDRs) to nursery operations of 5 acres or greater which currently are not regulated by WDRs (as of the effective date of this amendment) but discharge nutrients in excess of 1 mg/L TIN to storm channels which are tributary to Newport Bay. The new WDRs shall incorporate the appropriate wasteload, load, and margin of safety allocations identified in the nutrient load targets for the Newport Bay Watershed. Appropriate monitoring programs to evaluate compliance with load targets and allocations shall be required and incorporated into the WDRs

3. Revision of Existing Waste Discharge Requirements

a. By December 31, 1998, the Regional Board shall revise existing WDRs for nursery operations which currently (as of the effective date of this amendment) discharge nutrients in excess of 1 mg/L TIN to drainages which are tributary to Newport Bay. The revised WDRs shall incorporate the appropriate wasteload, load, and margin of safety allocations identified in the nutrient load reduction targets for the Newport Bay Watershed. Appropriate monitoring programs to evaluate compliance with load targets and allocations shall be required and incorporated into the WDRs.

b. By December 31, 1998, the Regional Board shall revise existing NPDES permits for discharges which currently (as of the effective date of this amendment) discharge nutrients in excess of 1 mg/L TIN to drainages which are tributary to Newport Bay. The revised NPDES permits shall incorporate the appropriate wasteload, load, and margin of safety allocations identified in the nutrient load reduction targets for the Newport Bay Watershed. Appropriate monitoring programs to evaluate compliance with load targets and allocations shall be required and incorporated into the NPDES permits.

c. By March 31, 1999, the Regional Board shall revise the Monitoring and Reporting Programs of existing NPDES permits and WDRs for groundwater dewatering and cleanup operations which discharge to drainages which are tributary to Newport Bay to include requirements for phosphorus and total nitrogen sampling and analysis. This monitoring will generate the data necessary to develop appropriate wasteload allocations for these discharges.

4. Agricultural Activities

A watershed-wide nutrient management program for agricultural activities shall be developed by the Orange County Farm Bureau, University of California Cooperative Extension, and the affected growers, in conjunction with Regional Board staff. The proposed management program shall be submitted by July 1, 1999. The nutrient management program will not become effective until approved by the Regional Water Quality Control Board at a duly noticed public meeting as specified in Chapter 1.5, Division 3, Title 23 of the California Code of Regulations (Section 647 et seq.).

5. Urban Stormwater

Co-permittees of the Orange County Areawide Urban Stormwater Permit (Order No. 96-31) shall be required to submit for approval by the Regional Board's Executive Officer an analysis of appropriate Best Management Practices which will be additionally implemented through the Drainage Area Management Plan (DAMP) to achieve the short term (5-year) interim targets and final nutrient load reduction targets for the Newport Bay Watershed. The co-permittees shall also be required to provide a proposal for 1) evaluating the effectiveness of control actions implemented and 2) evaluating compliance with the nutrient load allocation. The proposal and analysis shall be submitted by July 1, 1999, and shall be implemented upon approval of the Executive Officer as specified by Section IV.1.a.ii.A of Order No. 96-31.

6. Phosphorus

The primary reduction of phosphorus loading is expected to be achieved by the implementation of the total maximum daily load for sediment in the Newport Bay/San Diego Creek watershed. The sediment TMDL is incorporated into the nutrient TMDL for the Newport Bay/San Diego Creek watershed by reference (Note - the sediment TMDL will be appropriately referenced once it is approved by OAL). Limits on phosphorus discharges shall be incorporated into the new and revised Waste Discharge Requirements previously listed, as necessary.

2.c. Phase II of the Nutrient TMDL

1. Monitoring

The Regional Board will establish and oversee a regional monitoring program (RMP) for the Newport Bay watershed. The new and revised WDRs, NPDES permits, DAMP, and agricultural nutrient management plans shall have include requirements to conduct self-monitoring, or in lieu of self-monitoring, to participate in the RMP. Participation in the RMP could result in the reduction of self-monitoring requirements. The RMP will not become effective until approved by the Regional Water Quality Control Board at a duly noticed public meeting as specified in Chapter 1.5, Division 3, Title 23 of the California Code of Regulations (Section 647 et seq.).

The RMP shall be designed by the Regional Board to assess the attainment of the goals of the nutrient TMDL. The objectives of the monitoring program shall be the quantification of the three endpoints of the nutrient TMDL: (1) the seasonal nutrient loading from the watershed; (2) the nutrient concentration in San Diego Creek, Reaches 1 and 2; and (3) the extent, magnitude, and duration of algal blooms in San Diego Creek and Newport Bay. The monitoring plan shall be implemented by March 1999.

The Regional Board will initiate investigations into the currently unknown sources of nutrients in the Newport Bay Watershed. The Regional Board, in cooperation with other agencies and entities, will investigate the occurrence of rising shallow groundwater in the Newport Bay Watershed. The study will focus on the contributions of rising groundwater to the loading of nutrients to drainage channels which are tributary to Newport Bay. Additionally, the study of the nutrient and algae processes of Newport Bay and San Diego Creek will be encouraged and supported by the Regional Board. Regional Board support could include financial resources, personnel, agency coordination, and scientific review.

2. Actions and Schedule to Achieve Water Quality Objectives

The actions and schedule to achieve water quality objectives is outlined in Table 5-9e. Meeting load reduction targets is highly dependent upon the effectiveness of individual actions; therefore, the Regional Board will review the TMDL, WDRs and compliance schedule at least once every 3 years. Any or all of these may be revised in order to meet water quality standards.

Table 5-9e Schedule of Actions to Achieve Water Quality Objectives.

Program Actions	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Review and revision of water quality objectives			X													
New nursery permits		X														
Revise existing permits	X															
Nurseries	X															
NPDES permit	X															
Groundwater cleanup/dewatering		X														
Agricultural nutrient management plans		X														
Urban runoff BMP plan		X														
Sediment TMDL implementation	X															
Monitoring		X														
Newport Bay Watershed total nitrogen - summer TMDL targets					X					X						
Newport Bay Watershed total nitrogen - winter TMDL target															X	
Newport Bay Watershed total phosphorus - annual TMDL targets					X					X						
San Diego Creek, Reach 2 total nitrogen - daily target															X	
Evaluation of TMDL			X			X			X		X			X		X

2.d. Estimated Costs of Agricultural Water Quality Control Programs and Potential Sources of Financing

The estimates of capital and operational costs to achieve the nutrient targets of the nutrient TMDL for the San Diego Creek/Newport Bay watershed range from $0.69 million/year to $4.73 million/year.

Potential funding sources include:

1. Private financing by individual sources.

2. Bonded indebtedness or loans from governmental institutions.

3. Surcharge on water deliveries to lands contributing to the drainage problem.

4. Ad Valorem tax on lands contributing to the drainage problem.

5. State or federal grants or low-interest loan programs.

6. Single-purpose appropriations from federal or State legislative bodies (including land retirement programs).

4. Toxic Substance Contamination (Amended by Resolution No. R8-2003-0039)

San Diego Creek and Newport Bay are not attaining water quality standards with respect to certain classes of toxic pollutants. On June 14, 2002, USEPA established Total Maximum Daily Loads (TMDLs) for selenium, heavy metals (cadmium, copper, lead, and zinc), organochlorine pesticides (chlordane, dieldrin, DDT, and toxaphene), PCBs, and organophosphate pesticides (diazinon and chlorpyrifos). In addition, USEPA established a separate TMDL for the Rhine Channel in Lower Newport Bay. Table 5-9i shows these TMDLs, the constituents addressed, and the waterbodies affected.

USEPA's TMDLs do not specify implementation plans, which are the responsibility of the Regional Board. The Regional Board has adopted or will adopt Basin Plan amendments to incorporate the USEPA TMDLs, revised if and as appropriate, into the Basin Plan. These amendments will include implementation plans. The anticipated schedule for these Basin Plan amendments is also shown in Table 5-9i.

Table 5-9i. USEPA TMDLs Established June 14, 2002

TMDL	Basin Plan Schedule	Location	Constituents
Organophosphate Pesticides	2003	SDC	Diazinon, chlorpyrifos
		UNB	Chlorpyrifos
Selenium	2007	SDC, UNB LNB	Selenium
Metals	2007	SDC	Cd, Cu, Pb, Zn
		UNB	Cd, Cu, Pb, Zn
		LNB	Cu, Pb, Zn
Organochlorine Compounds	2007	SDC	Chlordane, dieldrin, DDT, PCBs, toxaphene
		UNB	Chlordane, DDT, PCBs
		LNB	Chlordane, dieldrin, DDT, PCBs
Rhine Channel	2007	Rhine Channel	Se, Cr, Hg, Cu, Pb, Zn Chlordane, dieldrin, DDT, PCBs

SDC= San Diego Creek; UNB=Upper Newport Bay; LNB=Lower Newport Bay

4.a Diazinon and Chlorpyrifos TMDL

Aquatic toxicity in San Diego Creek and Upper Newport Bay causes adverse impacts to the established beneficial uses of those waterbodies.

A report prepared by Regional Board staff describes the aquatic life toxicity problems in San Diego Creek and Upper Newport Bay in greater detail and discusses the technical basis for the TMDL that follows[1]. This TMDL is the same as that promulgated by the USEPA on June 14, 2002, but an implementation plan is also specified (see Section 4.a.i.). The USEPA TMDL was, in fact, based on a draft TMDL prepared by Regional Board staff. The TMDL addresses toxicity due to diazinon and chlorpyrifos in San Diego Creek and chlorpyrifos in Upper Newport Bay. Implementation of this TMDL is expected to address, to a significant extent, the occurrence of aquatic life toxicity in these waterbodies. Reduction in aquatic life toxicity will help assure attainment of water quality standards; that is, compliance with water quality objectives and protection of beneficial uses.

Table 5-9j shows the TMDL and the allocations for diazinon and chlorpyrifos in San Diego Creek.

[1] Diazinon and Chlorpyrifos TMDL, Upper Newport Bay and San Diego Creek, April 4, 2003

Table 5-9j. Diazinon and Chlorpyrifos Allocations for San Diego Creek

Category	Diazinon (ng/L)		Chlorpyrifos (ng/L)	
	Acute	Chronic	Acute	Chronic
Wasteload Allocation	72	45	18	12.6
Load allocation	72	45	18	12.6
MOS	8	5	2	1.4
TMDL	**80**	**50**	**20**	**14**

MOS = Margin of Safety; Chronic means 4-consecutive day average

Table 5-9k shows the TMDL and the allocations for chlorpyrifos in Upper Newport Bay.

Table 5-9k. Chlorpyrifos Allocations for Upper Newport Bay

Category	Acute (ng/L)	Chronic (ng/L)
Wasteload allocation	18	8.1
Load allocation	18	8.1
MOS	2	0.9
TMDL	**20**	**9**

MOS = Margin of Safety; Chronic means 4-consecutive day average

The TMDL and its allocations contain an explicit 10% margin of safety. In addition, a substantial margin of safety is implicitly incorporated in the TMDL through use of conservative assumptions.

4.a.i TMDL Implementation

Table 5-9l outlines the tasks and schedules to implement the TMDL.

Table 5-9l. TMDL Task Schedule

Task No.	Task	Schedule	Description
1	USEPA Re-Registration Agreements	12/2001 to 12/2006	Phase-out of uses specified in the re-registration agreements. Should end over 90% of usage. [2]
2	Revise Discharge Permits	2005	WDR and NPDES permits will be revised to include the TMDL allocations, as appropriate.
3	Pesticide Runoff Management Plan	2004	A pesticide runoff management plan will be developed
4	Monitoring	2003	Modify existing regional monitoring program to include analysis for organophosphate pesticides and toxicity
	Special Studies		
5a	Atmospheric deposition	2003	Quantify atmospheric deposition of chlorpyrifos loading to Upper Newport Bay
5b	Mixing volumes in Upper Newport Bay	2003	Model mixing and stratification of chlorpyrifos in Upper Newport Bay during storm events

Task 1: USEPA Re-Registration Agreements

The re-registration agreements negotiated by USEPA with the manufacturers of diazinon and chlorpyrifos are the most significant factor affecting the implementation plan. Usage of both diazinon and chlorpyrifos in the Newport Bay Watershed is expected to be reduced by over 90 percent.

Task 2: Revise Discharge Permits

The TMDL allocates wasteloads to all dischargers in the watershed. Since the TMDL is concentration-based, these wasteloads are concentration limits. The concentration limits will be incorporated into existing and future discharge permits in the watershed. Compliance schedules would be included in permits only if they are demonstrated to be necessary. Compliance would be required as soon as possible, but no later than December 1, 2007.

Task 3: Pesticide Runoff Management Plan

A pesticide runoff management plan will be developed for the watershed as a cooperative project between the Regional Board and stakeholders.

Task 4: Monitoring

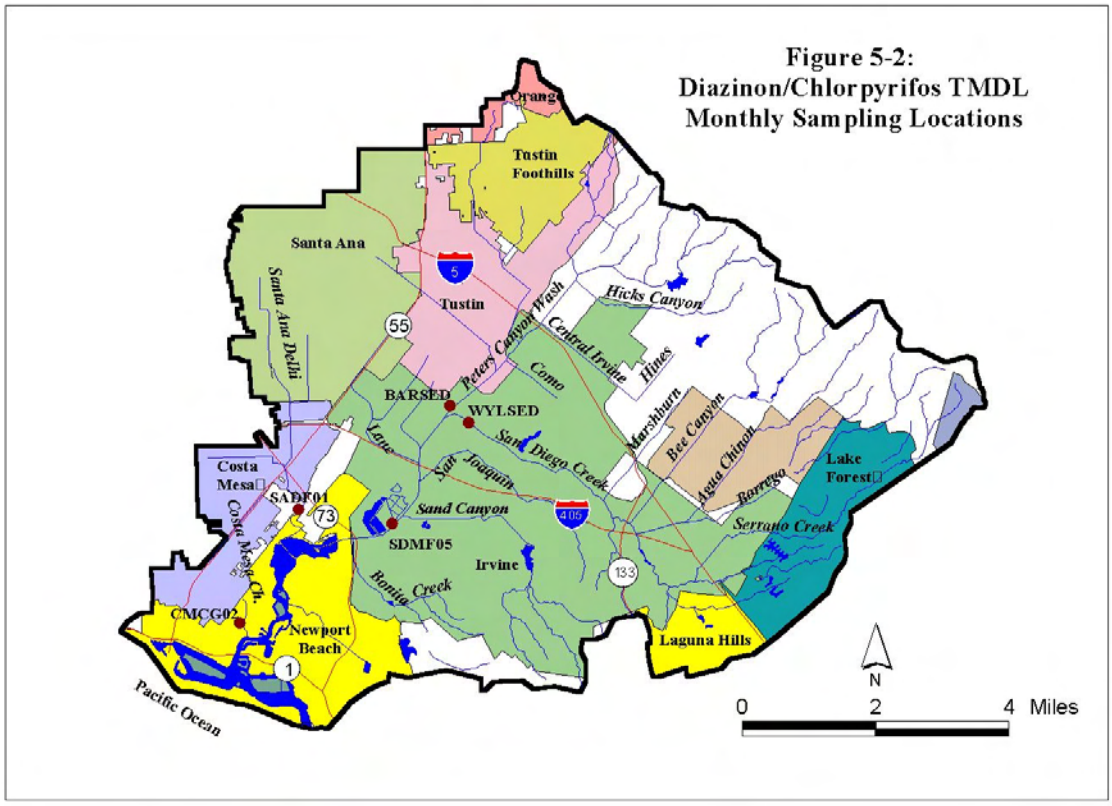
Routine monitoring is necessary to assess compliance with the allocations specified in the TMDL. The County of Orange, the Cities of Tustin, Irvine, Costa

[2] This task is not within the purview of the Regional Board, but is nevertheless of critical significance for implementation of the TMDL.

Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed will be required to propose a plan by January 30, 2004 for routine monitoring to determine compliance with the TMDL allocations for diazinon and chlorpyrifos. At a minimum, the proposed plan must include the collection of monthly samples at the stations specified in Table 5-9m and shown in Figure 5-2 and analysis of the samples for diazinon and chlorpyrifos. Monthly toxicity tests should also be conducted at several locations in the watershed. Data summaries will be required monthly. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL will be required to be submitted by November 30 of each year.

Table 5-9m. Minimum Required Monthly Sampling Stations

Station Code	Location
BARSED	Peters Canyon Wash
WYLSED	San Diego Creek at Harvard Dr.
SDMF05	San Diego Creek at Campus Dr.
SADF01, or CMCG02	Santa Ana Delhi Channel, or Costa Mesa Channel



In lieu of this coordinated, regional monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group plan to conduct routine monitoring in areas solely within their jurisdiction to determine compliance with the TMDL. Any such individual or group plans must also be submitted by January 30, 2004. Reports of the data collected pursuant to approved individual/group plan(s) will be required to be submitted monthly, and an annual report summarizing the data and evaluating compliance with the TMDL will be required to be submitted by November 30 of each year.

It is likely that implementation of these requirements will be through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and implemented upon the Regional Board's approval.

Task 5: Special Studies

With the anticipated assistance of stakeholders in the watershed, the Regional Board will conduct investigations to (1) quantify the significance of atmospheric deposition of chlorpyrifos to Upper Newport Bay, and (2) determine the adequacy of the freshwater allocations for chlorpyrifos in the tributaries to Upper Newport Bay in achieving the lower saltwater allocations. The existing hydrodynamic model for Newport Bay is being used to perform simulations that predict contaminant concentrations in the Bay based on various flow and management scenarios. The model results will be used to verify whether the TMDL allocations for chlorpyrifos in the watershed will be sufficient to achieve the TMDL allocations in Upper Newport Bay. One of the questions to be addressed is the magnitude of toxic exposure that could result from development of a freshwater lens associated with the discharge of stormwater to Upper Newport Bay.

4.a.ii Adjust TMDL

Based on the results of the special studies and recommendations made in the Pesticide Runoff Monitoring reports, changes to the TMDL may be warranted. Such changes would be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by these or other studies.**(End of Resolution No. RB-2003-0039)**

Anaheim Bay/Huntington Harbour

As in Newport Bay, bacteria and toxics threaten the water quality and beneficial uses of Anaheim Bay/Huntington Harbour. As shown in Table 5-10, the presence of toxic metals and pesticides/herbicides has resulted in the designation of Anaheim Bay and Huntington Harbour as a Toxic Hot Spot for some constituents and a Potential Toxic Hot Spot for other constituents. Two major storm drains, the Bolsa Chica Channel and the East Garden Grove Wintersburg Channel, as well as their tributaries, drain in to the Anaheim Bay/Huntington Harbour complex. Inputs of stormwater and urban nuisance flows via

these channels appear to be significant sources of pollutants. The Count of Orange's general stormwater permit requires the implementation of best management practices (BMPs) and other measures in the watershed to control these inputs to the maximum extent practicable.

During 1992-93, the Regional Board contracted with UC Irvine and UC Davis to evaluate the occurrence and impacts of these toxics in Huntington Harbour [Ref. 21, 22]. Results of the study indicated that concentrations of trace metals have decreased over a 13 year period and 1992/93 measurements met established water quality criteria. However, an unidentified nonpolar organic compound was found to be acutely toxic to test species.

Anaheim Bay (inland of Pacific Coast Highway bridge) and Huntington Harbour are designated as no discharge areas for vessel sanitary wastes. Pumpout facilities are in place throughout the Harbour to facilitate compliance. Additional discussion of the activities of the Huntington Harbour Waterways Committee is provided in Chapter 7.

Big Bear Lake (Amended by Resolution No. R8-2006-0023)

Big Bear Lake, located in the San Bernardino Mountains, was created by the construction of the Bear Valley Dam in 1884. The Lake has a surface area of approximately 3,000 acres, a storage capacity of 73,320 acre-ft and an average depth of 24 feet. The lake reaches its deepest point of 72 feet at the dam. The Big Bear Lake drainage basin encompasses 37 square miles and includes more than 10 streams. Local stream runoff and precipitation on the Lake are the sole source of water supply to the Lake. The spillway altitude is 6,743.2 feet. The major inflows to the lake are creeks, including Rathbone (Rathbun) Creek, Summit Creek, and Grout Creek. Outflow from the Lake is to Bear Creek, which is tributary to the Santa Ana River at about the 4,000-foot elevation level. Twelve percent of Big Bear Lake's drainage basin consists of the Lake itself. The US Forest Service is the largest landowner in the Big Bear area. Two ski resorts, Bear Mountain and Snow Summit, lease land from the Forest Service.

The beneficial uses of Big Bear Lake include cold freshwater habitat (COLD), warm freshwater habitat (WARM), water contact recreation (REC1), non-contact water recreation (REC2), municipal and domestic supply (MUN), agriculture supply (AGR), groundwater recharge (GWR), wildlife habitat (WILD) and rare, threatened or endangered species (RARE).

Big Bear Lake is moderately eutrophic. During the summer months, deeper water may exhibit severe oxygen deficits. Nutrient enrichment has resulted in the growth of aquatic plants, which has impaired the fishing, boating, and swimming uses of the lake. To control this vegetation, mechanical harvesters are used to remove aquatic plants, including the roots.

Toxics may be entering the Big Bear Lake watershed and accumulating in aquatic organisms and bottom sediments at concentrations that are of concern, not only for the

protection of aquatic organisms, but for the protection of human health as well. Past Toxic Substances Monitoring Program data have indicated the presence of copper, lindane, mercury, zinc, and PCBs in fish tissue.

During 1992-93, the Regional Board conducted a Phase I Clean Lakes study (Section 314 of the Clean Water Act) to evaluate the current water quality condition of the lake and its major tributaries [Ref. 20]. The focus of the study was to identify the tributaries responsible for inputs of toxics and nutrients. As a result of data collected in the Clean Lakes Study, Big Bear Lake and specific tributaries were placed on the 1994 Clean Water Act Section 303(d) List of Water Quality Limited Segments for the reasons indicated in Table 5-9a-b.

Table 5-9a-b

Big Bear Lake Watershed Waterbodies on the
1994 303(d) List of Impaired Waters

WATERBODY	STRESSOR
Big Bear Lake	nutrients
	noxious aquatic plants
	sedimentation/siltation
	metals
	copper
	mercury
Rathbone (Rathbun) Creek	nutrients
	sedimentation/siltation
Grout Creek	metals
	nutrients
Summit Creek	nutrients
Knickerbocker Creek	metals
	pathogens

In 2000, the Regional Board convened a TMDL workgroup to assist in the development of Total Maximum Daily Loads for the Big Bear Lake watershed. The Big Bear Municipal Water District, a key contributor to the workgroup, created the Big Bear Lake TMDL Task Force, including representatives of the District, Regional Board staff, the San Bernardino County Flood Control District, the City of Big Bear Lake, the Big Bear Area Regional Wastewater Authority, the State of California, Department of Transportation (Caltrans), the US Forest Service and the Big Bear Mountain Resorts. Initial TMDL development efforts were focused on nutrients, leading to Regional Board adoption of a nutrient TMDL for dry

hydrological conditions for Big Bear Lake in 2006. Nutrient TMDLs for wet and/or average hydrological conditions will be incorporated in the Basin Plan when these TMDLs are developed in the future. As shown in Table 5-9a-f, the development of these TMDLs is a requirement of the adopted TMDL implementation plan for the nutrient TMDL for dry hydrological conditions.

1. Big Bear Lake Nutrient Total Maximum Daily Loads (TMDLs)

Past studies, starting in 1968/1969, have shown that Big Bear Lake is moderately eutrophic and that the limiting nutrient is generally phosphorus. In Big Bear Lake, nutrients (nitrogen and phosphorus) are available in the water column and sediment and are taken up by aquatic macrophytes and algae. Nutrients are also bound in living and dead organic material, primarily macrophytes and algae. Decomposition of this organic material, as well as macrophyte and algal respiration, consumes dissolved oxygen, resulting in the depletion of dissolved oxygen from the water column. Oxygen depletion in the hypolimnion results in anoxic conditions, leading to periodic fish kills in Big Bear Lake. Oxygen depletion also results in the release of nutrients from the sediment into the water column, promoting more algae and aquatic macrophyte production. Nutrients released by plant decomposition are cycled back into a bioavailable form.

Although aquatic macrophytes provide protection from shoreline erosion, habitat for fish and other aquatic biota and waterfowl habitat, excessive growth of noxious and nuisance species, particularly Eurasian watermilfoil (*Myriophyllum spicatum*) impairs recreational uses of the Lake and reduces plant and animal species and habitat diversity.

As stated above, development of nutrient TMDLs to address these problems was initiated in 2000. In this process, it was recognized that insufficient data for wet or average hydrological conditions were available to allow calibration of the lake water quality model used to calculate the TMDL. Accordingly, a TMDL was developed to address dry hydrologic conditions only (see Section 1.B., below). This TMDL was adopted by the Regional Board in 2006 and became effective on August 21, 2007. The implementation plan included with this TMDL specifies a requirement for the development of nutrient TMDLs for wet and/or average hydrological conditions.

A key step in the development of the nutrient TMDL was the identification of the numeric targets to be achieved. The numeric targets, identified in Section 1.A., below, do not vary based upon hydrological condition. Like the approved TMDL for dry hydrological conditions, the TMDLs for wet and/or average hydrological conditions that will be developed are expected to assure also that these numeric targets are achieved. Indeed, since the TMDL for dry hydrological conditions was developed to meet the targets under the critical, worst-case conditions, consistent compliance with these targets is expected to be achieved even in the absence of TMDLs for wet/average hydrological conditions, given the greater lake volume and dilution anticipated under

wetter conditions. It is recognized that future modifications to the targets may be found necessary.

1. A. Numeric Targets

As shown in Table 5-9a-c, both "causal and response" numeric targets are specified for Big Bear Lake. The causal target is for phosphorus. Phosphorus is the primary limiting nutrient in Big Bear Lake[1] Response targets include macrophyte coverage, percentage of nuisance aquatic vascular plant species and chlorophyll *a* concentration. These response targets are more direct indicators of impairment and are specified to assess and track water quality improvements in Big Bear Lake

A weight of evidence approach will be used to assess compliance with the TMDL, which means that data pertaining to all the numeric targets will be evaluated and non-compliance with one target will not automatically imply non-compliance with the TMDL.

[1]There is evidence that nitrogen is a limiting nutrient under certain conditions. However, given data and analytical limitations, no nitrogen targets are specified. Nitrogen monitoring is required as part of this TMDL. The data will be used to specify nitrogen targets in the future, as warranted.

Table 5-9a-c
Big Bear Lake Nutrient TMDL Numeric Targets[a]

Indicator	Target Value
Total P concentration	Annual average[b] no greater than 35 µg/L; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times)[c]
Macrophyte Coverage	30-40% on a total lake area basis; to be attained by 2015 (dry hydrological conditions), 2020 (all other times)[c, d]
Percentage of Nuisance Aquatic Vascular Plant Species	95% eradication on a total area basis of Eurasian Watermilfoil and any other invasive aquatic plant species; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times)[c, d]
Chlorophyll *a* concentration	Growing season[e] average no greater than 14 µg/L; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times)[c]

[a] Compliance with the targets to be achieved as soon as possible, but no later than the date specified

[b] Annual average determined by the following methodology: the nutrient data from both the photic composite and discrete bottom samples are averaged by station number and month; a calendar year average is obtained for each sampling location by averaging the average of each month; and finally, the separate annual averages for each location are averaged to determine the lake-wide average. The open-water sampling locations used to determine the annual average are MWDL1, MWDL2, MWDL6, and MWDL9 (see 1.B.4. Implementation, Task 4.2, Table 5-9a-i).

[c] Compliance date for wet and/or average hydrological conditions may change in response to approved TMDLs for wet/average hydrological conditions.

[d] Calculated as a 5-yr running average based on measurements taken at peak macrophyte growth as determined in the Aquatic Plant Management Plan (see 1.B.4. Implementation, Task 6C)

[e] Growing season is the period from May 1 through October 31 of each year. The open-water sampling locations used to determine the growing season average are MWDL1, MWDL2, MWDL6 and MWDL9 (see 1.B.4. Implementation, Task 4.2, Table 5-9a-i). The chlorophyll *a* data from the photic samples are averaged by station number and month; a growing season average is obtained for each sampling location by averaging the average of each month; and finally, the separate growing season averages for each location are averaged to determine the lake-wide average.

1.B. Big Bear Lake Nutrient Total Maximum Daily Load (TMDL) for Dry Hydrological Conditions

The TMDL technical report [Ref. #25] describes in detail the technical basis for the TMDL for Dry Hydrological Conditions that follow.

1. B. 1. Nutrient TMDL, WLAs and LAs and Compliance Dates – Dry Hydrological Conditions

A TMDL, and the WLAs and LAs necessary to achieve it, are established for total phosphorus for dry hydrological conditions only. As stated above, phosphorus and nitrogen are the nutrients that cause beneficial use impairment in Big Bear Lake. Dry hydrological conditions are defined by the conditions observed from 1999-2003; that is, average tributary inflow to Big Bear Lake ranging from 0 to 3,049 AF, average lake levels ranging from 6671 to 6735 feet and annual precipitation ranging from 0 to 23 inches. TMDLs, WLAs and LAs for wet and/or average hydrological conditions will be established as part of the TMDL Phase 2 activities once additional data have been collected (see 1.B.4. TMDL Implementation, Task 9).

The phosphorus TMDL for Big Bear Lake for dry hydrological conditions is shown in Table 5-9a-d. Wasteload allocations for point source discharges and load allocations for nonpoint source discharges are shown in Table 5-9a-e.

Table 5-9a-d

Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions

	Total Phosphorus (lbs/yr) [b]
TMDL[a]	26,012

[a] Compliance to be achieved as soon as possible, but no later than December 31, 2015.
[b] Specified as an annual average for dry hydrological conditions only.

Table 5-9a-e

Big Bear Lake
Phosphorus Wasteload and Load Allocations for Dry Hydrological Conditions

Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions	Total Phosphorus Load Allocation (lbs/yr)[a, b]
TMDL	26,012
WLA	475
Urban	475
LA	25,537
Internal Sediment	8,555
Internal macrophyte	15,700
Atmospheric Deposition	1,074
Forest	175
Resort	33

[a] Allocation compliance to be achieved as soon as possible, but no later than December 31, 2015.
[b] Specified as an annual average for dry hydrological conditions only.

1.B.2. Margin of Safety

The Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions includes an implicit margin of safety (MOS) as follows:

1. The derivation of numeric targets based on the 25th percentile of nutrient data;
2. The use of conservative assumptions in modeling the response of Big Bear Lake to nutrient loads.

1. B.3. Seasonal Variations/Critical Conditions

The critical condition for attainment of aquatic life and recreational uses in Big Bear Lake occurs during the summer and during dry years, when nutrient releases from the sediment are greatest and water column concentrations increase. Macrophyte biomass peaks in the summer/early fall. Recreational uses of the lake are also highest during the summer. This nutrient TMDL for Big Bear Lake is focused on the critical dry hydrological conditions and, in particular, on the control of the internal sediment loads that dominate during these periods. This is the first phase of TMDLs needed to address eutrophication in Big Bear Lake. The next phase will include collection of data needed to refine the in-lake and watershed models (see

1.B.4. TMDL Implementation, Task 6A) and to develop TMDLs that address other hydrological conditions (see 1.B.4. TMDL Implementation, Task 9). TMDLs for wet and average hydrological conditions will be developed to address external loading that contributes to the nutrient reservoir in the lake and thus eutrophic conditions, particularly during the critical dry periods. However, it is important to note again that since the TMDL for dry hydrological conditions was developed to meet the numeric targets under the critical, worst-case conditions, consistent compliance with these targets is expected to be achieved even in the absence of TMDLs for wet/average hydrological conditions, given the greater lake volume and dilution anticipated under wetter conditions.

The TMDL recognizes that different nutrient inflow and cycling processes dominate the lake during different seasons. These processes were simulated in the in-lake model using data collected during all seasons over a multi-year period**.** Thus, the model results reflect all seasonal variations. The phosphorus numeric target is expressed as an annual average, while the chlorophyll *a* numeric target is expressed as a growing season average. The intent is to set targets that will, when achieved, result in improvement of the trophic status of Big Bear Lake year-round.

Compliance with numeric targets will ensure water quality improvements that prevent excessive algae blooms and fish kills, particularly during the critical summer period when these problems are most likely to occur.

1.B.4. TMDL Implementation

Table 5-9a-f outlines the tasks and schedules to implement the TMDL for Dry Hydrological Conditions. Each of these tasks is described below.

Table 5-9a-f

Big Bear Lake Nutrient TMDL Implementation
Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
TMDL Phase 1		
Task 1	Establish New Waste Discharge Requirements for Nutrient Sources	February 29, 2008
Task 2	Establish New Waste Discharge Requirements for Lake Restoration Activities	February 28, 2009
Task 3	Revise Existing Waste Discharge Requirements	February 29, 2008
Task 4	Nutrient Water Quality Monitoring Program 4.1 Watershed-wide Nutrient Monitoring Plan(s) 4.2 Big Bear Lake Nutrient Monitoring Plan(s)	Plan/schedule due November 30, 2007. Annual reports due February 15
Task 5	*Atmospheric Deposition Determination*	Plan/schedule due August 31, 2008
Task 6	*Big Bear Lake – Lake Management Plan, including:* *6A. Big Bear Lake and Watershed Model Updates* 6B. Big Bear Lake In-Lake Sediment Nutrient Reduction Plan 6C. Big Bear Lake Aquatic Plant Management Plan	Plan/schedule due August 31, 2008. Annual reports due February 15
TMDL Phase 2		
Task 7	Review/Revision of Big Bear Lake Water Quality Standards 7.1 Review/Revise Nutrient Water Quality Objectives 7.2 Development of biocriteria 7.3 Development of natural background definition	December 31, 2015
Task 8	Review Big Bear Lake Tributary Data	December 31, 2008
Task 9	Develop TMDLs, WLAs and LAs for wet and/or average hydrological conditions	December 31, 2012
Task 10	Review of TMDL/WLAs/Las	Once every 3 years

Task 1: Establish New Waste Discharge Requirements for Nutrient Sources

On or before February 29, 2008, the Regional Board shall issue the following new waste discharge requirements

1.1 Waste Discharge Requirements (WDRs) or Conditional Waiver of WDRs to the US Forest Service to incorporate the nutrient load allocations, compliance schedule and monitoring and reporting requirements for Forested Areas.

Other nutrient discharges will be addressed and permitted as appropriate.

Task 2: Establish New Waste Discharge Requirements for Lake Restoration Activities

On or before February 28, 2009, the Regional Board shall issue the following new waste discharge requirements

NPDES Permit to the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake, and Big Bear Mountain Resorts for Lake restoration activities, including, but not limited to alum treatment and/or herbicide treatment. Requirements specified in these Waste Discharge Requirements, shall be developed using the Aquatic Plant Management Plan and Schedule submitted pursuant to Task 6C.

Task 3: Review and/or Revise Existing Waste Discharge Requirements

Waste Discharge Requirements (WDRs) have been issued by the Regional Board regulating discharge of various types of wastes in the Big Bear Lake watershed. On or before February 29, 2008, these WDRs shall be reviewed and revised as necessary to incorporate the nutrient wasteload allocations, compliance schedule and TMDL monitoring and reporting requirements.

3.1 Waste Discharge Requirements for the San Bernardino County Flood Control and Transportation District, the County of San Bernardino and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618036 (Regional Board Order No. R8-2002-0012). The current Order has provisions to address TMDL issues. In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.

3.2 State of California, Department of Transportation (Caltrans) Stormwater Permit

Provision E.1 of Order No. 99-06-DWQ requires Caltrans to maintain and implement a Storm Water Management Plan (SWMP). Annual updates of the SWMP needed to maintain an effective program are required to be submitted to the State Water

Resources Control Board.

Provision E.2 of Order No. 99-06-DWQ requires Caltrans to submit a Regional Workplan by April 1 of each year for the Executive Officer's approval. As part of the annual update of the SWMP and Regional Workplan, Caltrans shall submit plans and schedules for conducting the monitoring and reporting requirements specified in Task 4 and the special studies required in Task 6.

Task 4: Monitoring

4.1 Watershed-wide Nutrient Water Quality Monitoring Program

No later than November 30, 2007, the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake and Big Bear Mountain Resorts shall, as a group, submit to the Regional Board for approval a proposed watershed-wide nutrient monitoring program that will provide data necessary to review and update the Big Bear Lake Nutrient TMDL, to determine specific sources of nutrients and to develop TMDLs for other hydrological conditions. Data to be collected and analyzed shall address, at a minimum, determination of compliance with the phosphorus dry condition TMDL, including the WLAs and LAs, and with the existing total inorganic nitrogen (TIN) objective.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9a-g and shown in Figure 5-7, at the frequency specified in Table 5-9a-h. Modifications to the required sampling stations, sampling frequencies and constituents to be monitored (see below) will be considered upon request by the stakeholders, accompanied by a report that describes the rationale for the proposed changes and identifies recommended alternatives. In addition to water quality samples, every two weeks on a year-round basis, visual monitoring (including documenting flow type and stage) determinations shall be made at all stations shown in Table 5-9a-g. Flow measurements will be required each time water quality samples are obtained.

At a minimum, samples shall be analyzed for the following constituents:

- Total nitrogen
- Nitrate + nitrite nitrogen
- Total phosphorus
- Total dissolved phosphorus
- Suspended sediment concentration
- Chlorophyll *a*
- Dissolved oxygen
- Alkalinity
- Bedload concentration
- Total nitrogen in sediment
- Ammonia nitrogen
- Total dissolved nitrogen
- Ortho-phosphate (SRP)
- Temperature
- Turbidity
- pH
- Conductivity
- Hardness
- Grain size
- Total phosphorus in sediment

Note: Chlorophyll *a* to be collected and analyzed only from May 1- October 31 of each year at the frequencies described in Table 5-9a-h; chlorophyll *a* sampling not required at Bear Creek outlet.

In addition, the proposed plan shall include a proposed plan and schedule for development of a Big Bear Lake Sedimentation Processes Plan for the determination of nutrient loads associated with sediment. At a minimum, the proposed plan shall include the placement of sediment traps at the mouths of Rathbun, Knickerbocker, Grout and Boulder Creeks to determine the rate of influx of sediment and particulate nutrients to Big Bear Lake, as specified in Table 5-9a-g and shown in Figure 5-7, at the specified frequency indicated in Table 5-9a-h. Modifications to the required sampling stations, sampling frequencies and constituents to be monitored will be considered upon request by the stakeholders, accompanied by a report that describes the rationale for the proposed changes and identifies recommended alternatives. The proposed monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs shall be submitted by February 15 of each year.

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. Any such individual or group monitoring plan is due no later than November 30, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s) shall be submitted by February 15 of each year. The report shall summarize the data and evaluate compliance with the TMDL/WLAs/LAs.

Table 5-9a-g
Big Bear Lake Watershed
Minimum Required Sampling Station Locations

Station Number	Station Description
MWDC2	Bear Creek Outlet
MWDC3	Grout Creek at Hwy 38
MWDC4	Rathbun Creek at Sandalwood Ave.
MWDC5	Summit Creek at Swan Dr.
MWDC6	Rathbun Creek below the Zoo
MWDC8	Knickerbocker Creek at Hwy 18
MWDC13	Boulder Creek at Hwy 18

Note: Bear Creek outlet to be sampled monthly from March – November. At a minimum, samples shall be analyzed at the frequencies specified in Table 5-9a-h:

Table 5-9a-h
Big Bear Lake Watershed
Sampling Frequency

Flow type	Months monitoring is required	Frequency
Baseflow	January 1 – December 31	Once/month when baseflow is present;
Snowmelt	January 1 – May 31[1]	Varied -See note 2 below
Storm events	January 1 – December 31	3 storms per year[3]

[1] Sampling to begin after the first substantial snowfall resulting in an accumulation of 1.0 inch or more of snow

[2] Samples to be collected daily for the first three days of the snowmelt period. If ambient air temperatures remain above freezing after three days have passed, snowmelt sampling will then be performed once a week for the following three weeks or until the snowmelt period ceases. Snowmelt cessation will be determined by one of the following: a) ambient air temperatures drop below freezing during most of the day; or b) a storm/rain precipitation event occurs after the snowmelt event was initiated. Beginning March 15th of each year, snowmelt flows will most likely be continuous since ambient air temperatures will usually remain above freezing. From March 15th through May 31 of each year, snowmelt sampling events will be conducted daily for the first two days of a snowmelt event and then once a week thereafter until the spring runoff period has ended or the tributary station location shows no signs of daily flows for one week. Flow status will be evaluated in the afternoon, when ambient air temperatures are highest and flow potential is greatest.

[3] Two storm events to be sampled during October – March; 1 storm event to be sampled during April – September. For each storm event, eight samples across the hydrograph are to be collected.

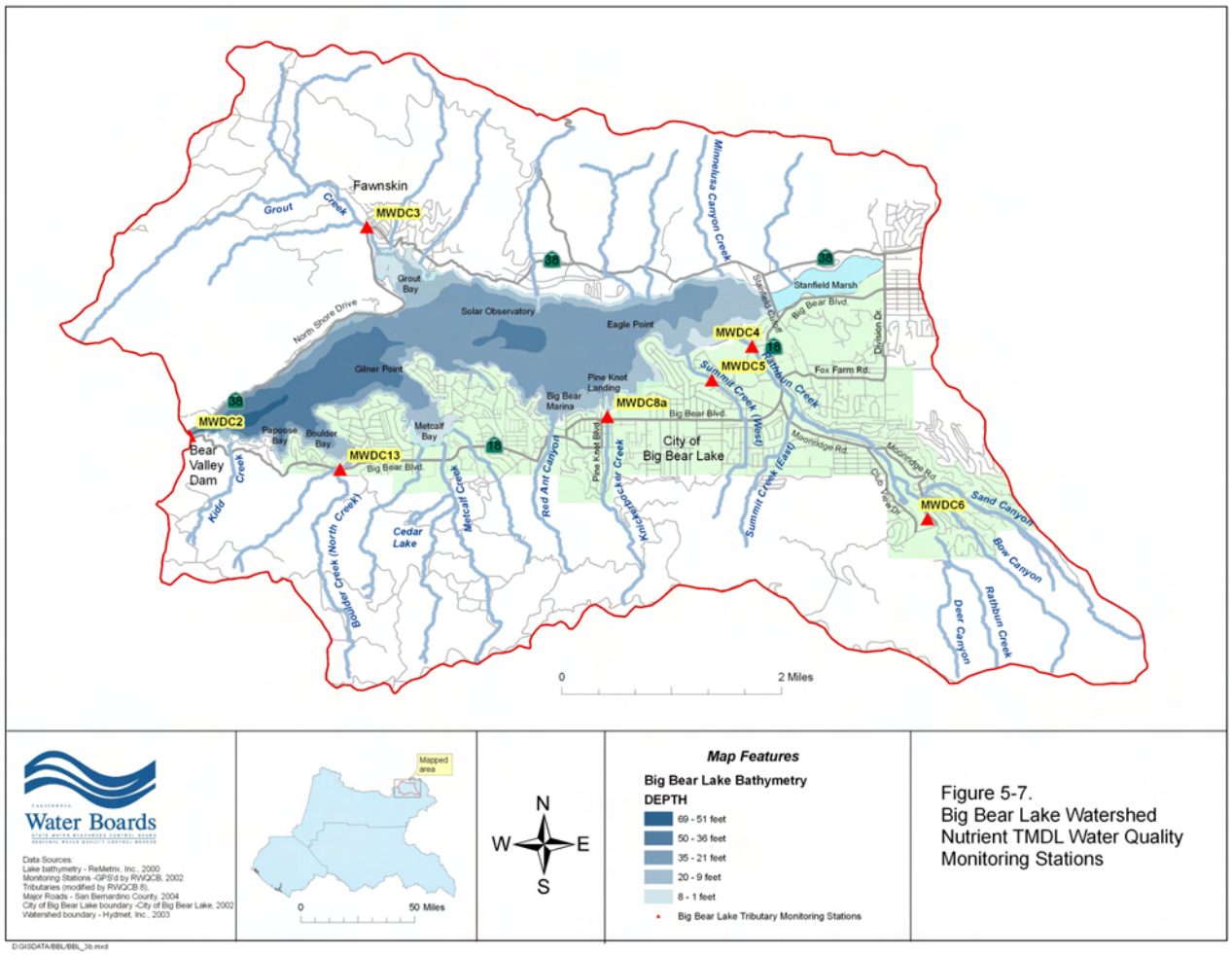


Figure 5-7 – Big Bear Lake Watershed Nutrient TMDL Water Quality Stations

4.2 Big Bear Lake: In-Lake Nutrient Monitoring Program

No later than November 30, 2007, the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake, and Big Bear Mountain Resorts shall, as a group, submit to the Regional Board for approval a proposed Big Bear Lake nutrient monitoring program that will provide data necessary to review and update the Big Bear Lake Nutrient TMDL, and to develop TMDLs for other hydrological conditions. Data to be collected and analyzed shall address, at a minimum: (1) determination of compliance with phosphorus and chlorophyll *a* numeric targets; (2) determination of compliance with the existing total inorganic nitrogen (TIN) objective; and (3) refinement of the in-lake model for the purposes of TMDL review and development.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9a-i and shown in Figure 5-8, at the specified frequency indicated in Table 5-9a-i. Modifications to the required sampling stations, sampling frequencies and constituents to be monitored (see below) will be considered upon request by the stakeholders, accompanied by a report that describes the rationale for the proposed changes and identifies recommended alternatives. With the exception of hardness, alkalinity, total organic carbon (TOC), dissolved organic carbon (DOC), and chlorophyll *a,* each sample to be analyzed shall be collected as a photic zone composite (from the surface to 2 times the secchi depth) and as a bottom discrete (0.5 meters off the surface bottom) sample. Hardness, alkalinity, TOC, DOC, and chlorophyll *a* shall be collected as photic zone composites. Dissolved oxygen, water temperature, turbidity, specific conductance, and pH shall be measured at 1-meter intervals from the surface to 0.5 meters from the bottom using a multi-parameter water quality meter. Water clarity shall be measured with a secchi disk.

At a minimum, in-lake samples must be analyzed for the following constituents:

- Specific conductance
- Water temperature
- Chlorophyll *a*
- Total nitrogen
- Nitrate +nitrite nitrogen
- Total phosphorus
- Total hardness
- Total dissolved phosphorus
- Dissolved organic carbon(DOC)
- Total dissolved nitrogen
- Dissolved oxygen
- Water clarity (secchi depth)
- Ammonia nitrogen
- Alkalinity
- Turbidity
- Ortho-phosphate (SRP)
- Total suspended solids (TSS)
- pH
- Total dissolved solids (TDS)
- Total organic carbon (TOC)

The monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs and numeric targets shall be submitted by February 15 of each year.

Table 5-9a-i

Big Bear Lake Minimum Required Sampling Station Locations

Station Number	Station Description
MWDL1	Big Bear Lake – Dam
MWDL2	Big Bear Lake – Gilner Point
MWDL6	Big Bear Lake – Mid Lake Middle
MWDL9	Big Bear Lake – Stanfield Middle

Frequency of sampling at all stations: for all constituents except TOC and DOC, monthly from March – November; bi-weekly (i.e., every other week) from June 1 through October 31. TOC and DOC to be monitored four times per year (quarterly) from January through December.

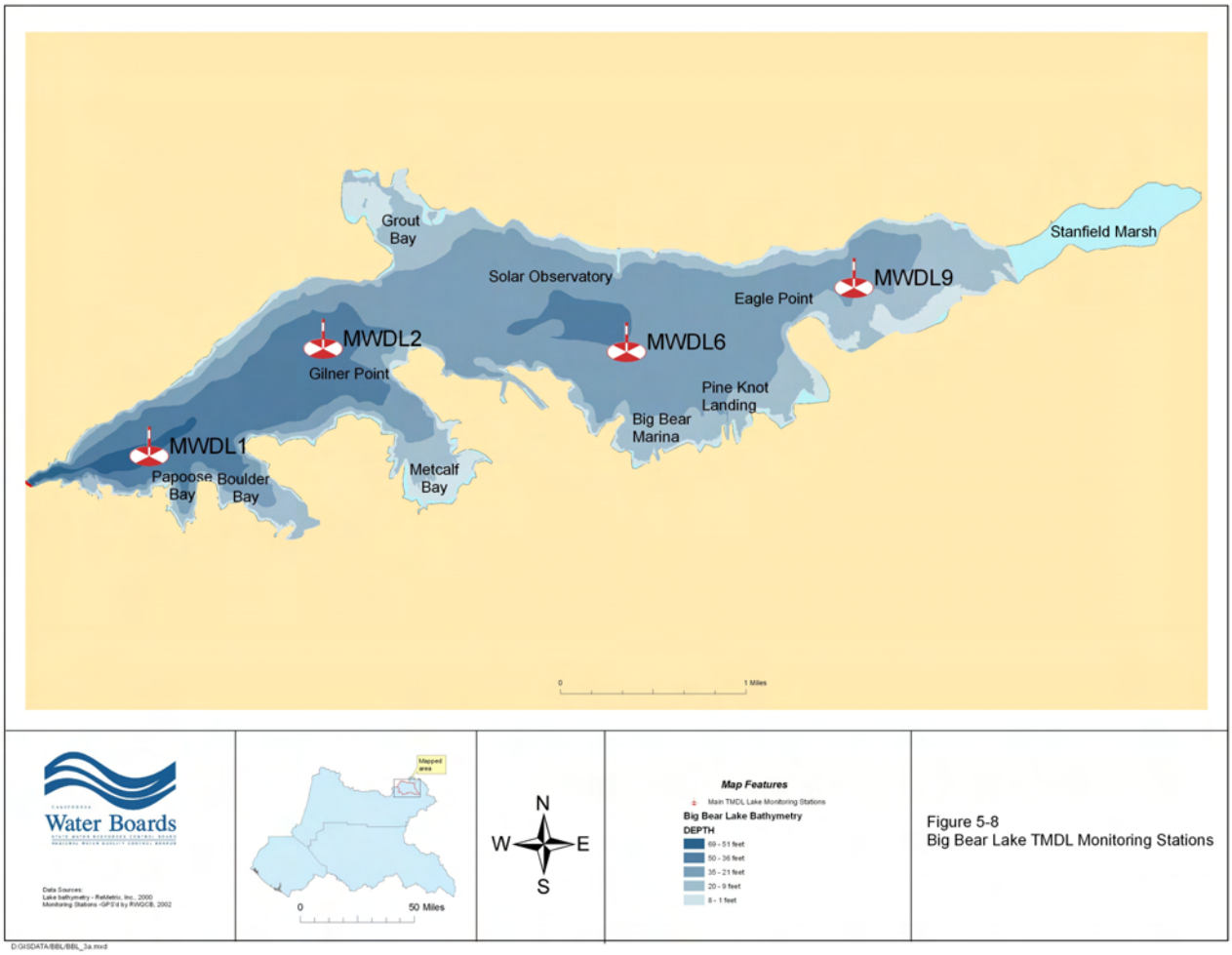


Figure 5-8 Big Bear Lake TMDL Monitoring Stations

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. Any such individual or group monitoring plan is due no later than November 30, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s), shall be submitted by February 15 of each year. The report shall summarize the data and evaluate compliance with the TMDL/WLAs/LAs and numeric targets.

Task 5: Atmospheric Deposition Determination

No later than August 31, 2008, the Regional Board, in coordination with local stakeholders, the South Coast Air Quality Management District and the California Air

Resources Board, shall develop a plan and schedule for quantifying atmospheric deposition of nutrients in the Big Bear Lake watershed.

Task 6: Big Bear Lake-Lake Management Plan

No later than August 31, 2008, the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake, and Big Bear Mountain Resorts, shall, as a group, submit to the Regional Board for approval a proposed Lake Management Plan for Big Bear Lake. The purpose of the plan is to identify a coordinated and comprehensive strategy for management of the lake and surrounding watershed to address restoration and protection of the lake's beneficial uses.The plan shall include the following:

A) A proposed plan and schedule for updating the existing Big Bear Lake watershed nutrient model and the Big Bear Lake in-lake nutrient model. The plan and schedule must take into consideration additional data and information that are or will be generated from the required TMDL monitoring programs (Tasks 4.1 and 4.2, above).

B) A proposed plan and schedule for in-lake sediment nutrient reduction for Big Bear Lake. The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to support development of a long-term strategy for control of nutrients from the sediment. The submittal shall also contain a proposed sediment nutrient monitoring program to evaluate the effectiveness of any strategies implemented.

C) The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to control noxious and nuisance aquatic plants. The plan shall also include a description of the monitoring conducted and proposed to track aquatic plant diversity, coverage, and biomass. Data to be collected and analyzed shall address, at a minimum, determination of compliance with the numeric targets for macrophyte coverage and percentage of nuisance aquatic vascular plant species (see 1.A., above).

In addition, at a minimum, the proposed plan shall also address the following:

- The plan shall be based on identified and acceptable goals for lake capacity, biological resources and recreational opportunities. Acceptable goals shall be identified in coordination with the Regional Board and other responsible agencies, including the California Department of Fish and Game and the U.S. Fish and Wildlife Service.
- The plan shall include a proposed plan and schedule for the development of biocriteria for Big Bear Lake. (This is intended to complement Regional Board efforts to develop biocriteria and to signal the parties' commitment to participate substantively.)
- The plan must identify a scientifically defensible methodology for measuring changes in the capacity of the lake.

- The proposed plan shall identify recommended short and long-term strategies for control and management of sediment and dissolved and particulate nutrient inputs to the lake.
- The plan shall also integrate the beneficial use survey information required to be developed pursuant to the Regional Board's March 3, 2005, Clean Water Act Section 401 Water Quality Standards Certification for Big Bear Lake Nutrient/Sediment Remediation Project, City of Big Bear Lake, County of San Bernardino, California. The purpose of the beneficial use survey is to correlate beneficial uses of the lake with lake bottom contours. The survey is required to be conducted throughout the lake. The survey will determine the location and the quality of beneficial uses of the lake and the contours of the lake bottom where these uses occur. The survey is expected to be used in regulating future lake dredge projects to maximize the restoration and protection of the lake's beneficial uses.

The Big Bear Lake – Lake Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting. Once approved, the plan shall be reviewed and revised as necessary at least once every three years. The review and revision shall take into account assessments of the efficacy of control/management strategies implemented and relevant requirements of new or revised TMDLs for Big Bear Lake and its watershed. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs and numeric targets shall be submitted by February 15 of each year.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group Big Bear Lake – Lake Management Plan and schedule for approval by the Regional Board. Any such individual or group plan must conform to the requirements specified above and is due no later than August 31, 2008. An individual or group plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs and numeric targets shall be submitted by February 15 of each year.

Task 7: Review and Revision of Big Bear Lake Water Quality Standards

By December 31, 2015, the Regional Board shall:

7.1 Review/revise as necessary the total inorganic nitrogen and total phosphorus numeric water quality objectives for Big Bear Lake. The Regional Board shall also consider the development of narrative or numeric objectives for other indicators of impairment (e.g., chlorophyll *a*, macrophyte coverage and species composition), in lieu of or in addition to review/revision of the numeric objectives for phosphorus and nitrogen.

7.2 Develop biocriteria for Big Bear Lake.

7.3 Develop a definition for natural background sources of nutrients (and other constituents) to Big Bear Lake and its tributaries.

Given budgetary constraints, completion of these tasks are likely to require substantive contributions from interested parties.

Task 8: Review of Big Bear Lake Tributary Data

No later than December 2008, the Regional Board shall review data collected on Rathbun Creek, Summit Creek and Grout Creek to determine whether beneficial uses of these tributaries are impaired by nutrients. If the Creeks are found to be impaired by nutrients, the Regional Board shall develop a TMDL development project plan and schedule. If these tributaries are found not to be impaired by nutrients, Regional Board shall schedule the delisting of the tributaries from the 303(d) list of impaired waters at the earliest opportunity.

Task 9: Development of TMDLs for Wet and/or Average Hydrological Conditions

No later than December 31, 2012, the Regional Board shall utilize additional water quality data and information collected pursuant to monitoring program requirements (Tasks 4 and 5) and model updates (Task 6A) to develop proposed nutrient TMDLs for Big Bear Lake for wet and/or average hydrological conditions. Completion of this task is contingent on the collection of requisite data for wet and/or average hydrological conditions.

Task 10: Review/Revision of the Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions (TMDL "Re-opener")

The basis for the TMDL for Dry Hydrological Condtions, the implementation plan and schedule will be re-evaluated at least once every three years[2] to determine the need for modifying the allocations, numeric targets and TMDL. Regional Board staff will continue to review all data and information generated pursuant to the TMDL requirements on an ongoing basis. Based on results generated through the monitoring programs, special studies and/or modeling analyses, changes to the TMDL may be warranted. Such changes will be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by these or other studies.

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[2] The three-year schedule is tied to the 3 year triennial review schedule.

Lake Elsinore/San Jacinto River Watershed (Amended by Resolution No. R8-2006-0023)

The Lake Elsinore/San Jacinto River Watershed is located in Riverside County and includes the following major waterbodies: Lake Hemet, San Jacinto River, Salt Creek, Canyon Lake and Lake Elsinore. The total drainage area of the San Jacinto River watershed is approximately 782 square miles. Over 90 percent of the watershed (735 square miles) drains into Canyon Lake. Lake Elsinore is the terminus of the San Jacinto River watershed. The local tributary area to Lake Elsinore, consisting of drainage from the Santa Ana Mountains and the City of Lake Elsinore, is 47 square miles.

Land use in the watershed includes open/forested, agricultural (including concentrated animal feeding operations such as dairies and chicken ranches, and irrigated cropland), and urban uses, including residential, industrial and commercial. Vacant/open space is being converted to residential uses as the population in the area expands. The municipalities in the watershed include the cities of San Jacinto, Hemet, Perris, Canyon Lake, Lake Elsinore and portions of Moreno Valley and Beaumont.

1. Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Load (TMDL)

Lake Elsinore and Canyon Lake are not attaining water quality standards due to excessive nutrients (nitrogen and phosphorus). Reports prepared by Regional Board staff describe the impact nutrient discharges have on the beneficial uses of Lake Elsinore and Canyon Lake [Ref. #26,27] Lake Elsinore was formed in a geologically active graben area and has been in existence for thousands of years. Due to the mediterranean climate and watershed hydrology, fluctuations in the level of Lake Elsinore have been extreme, with alternate periods of a dry lake bed and extreme flooding. These drought/flood cycles have a great impact on lake water quality. Fish kills and excessive algae blooms have been reported in Lake Elsinore since the early 20th century. As a result, in 1994, the Regional Board placed Lake Elsinore on the 303(d) list of impaired waters due to excessive levels of nutrients and organic enrichment/low dissolved oxygen.

Canyon Lake, located approximately 5 miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon Dam in 1928. Approximately 735 square miles of the 782 square mile San Jacinto River watershed drain to Canyon Lake. During most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake. While Canyon Lake does not have as severe an eutrophication problem as Lake Elsinore, there have been periods of algal blooms and anecdotal reports of occasional fish kills. Accordingly, in

1998, the Regional Board added Canyon Lake to the 303(d) list of impaired waters due to excessive levels of nutrients.
A TMDL technical report prepared by Regional Board staff describes the nutrient related problems in Canyon Lake and Lake Elsinore in greater detail and discusses the technical basis for the TMDLs that follow [Ref. # 28].

A. Lake Elsinore and Canyon Lake Nutrient TMDL Numeric Targets

Numeric targets for Lake Elsinore and Canyon Lake are based on reference conditions when beneficial uses in the lakes were not significantly impacted by nutrients. Table 5-9n shows both "causal" and "response" interim and final numeric targets for both lakes. Causal targets are those for phosphorus and nitrogen. Phosphorus and nitrogen are the primary limiting nutrients in Lake Elsinore and Canyon Lake, respectively. However, under certain conditions, nitrogen may be limiting in Lake Elsinore and phosphorus may be limiting in Canyon Lake. Targets for both nutrients are therefore necessary . Reduction in nitrogen inputs will be necessary over the long-term and only final targets are specified. Response targets include chlorophyll *a* and dissolved oxygen. These targets are specified to assess water quality improvements in the lakes. Finally, ammonia targets are specified to prevent un-ionized ammonia toxicity to aquatic life.

Table 5-9n

Lake Elsinore and Canyon Lake Nutrient TMDL Numeric Targets*

Indicator	Lake Elsinore	Canyon Lake
Total P concentration (Final)	Annual average no greater than 0.1 mg/L; to be attained no later than 2020	Annual average no greater than 0.1 mg/L; to be attained no later than 2020
Total N concentration (Final)	Annual average no greater than 0.75 mg/L; to be attained no later than 2020	Annual average no greater than 0.75 mg/L; to be attained no later than 2020
Ammonia nitrogen concentration (Final) [Ref. #4]	Calculated concentrations to be attained no later than 2020 Acute: 1-hour average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CMC (acute criteria), where $CMC = 0.411/(1+10^{7.204-pH}) + 58.4/(1+10^{pH-7.204})$ Chronic: thirty-day average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CCC (chronic criteria) $CCC = (0.0577/(1+10^{7.688-pH}) + 2.487/(1+10^{pH-7.688})) * \min(2.85, 1.45*10^{0.028(25-T)})$	Calculated concentrations to be attained no later than 2020 Acute: 1-hour average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CMC (acute criteria), where $CMC = 0.411/(1+10^{7.204-pH}) + 58.4/(1+10^{pH-7.204})$ Chronic: thirty-day average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CCC (chronic criteria) $CCC = (0.0577/(1+10^{7.688-pH}) + 2.487/(1+10^{pH-7.688})) * \min(2.85, 1.45*10^{0.028(25-T)})$
Chlorophyll *a* concentration (Interim)	Summer average no greater than 40 ug/L; to be attained no later than 2015	Annual average no greater than 40 ug/L; to be attained no later than 2015
Chlorophyll *a* concentration (Final)	Summer average no greater than 25 ug/L; to be attained no later than 2020	Annual average no greater than 25 ug/L; to be attained no later than 2020
Dissolved oxygen concentration (Interim)	Depth average no less than 5 mg/L; to be attained no later than 2015	Minimum of 5 mg/L above thermocline; to be attained no later than 2015
Dissolved oxygen concentration (Final)	No less than 5 mg/L 1 meter above lake bottom; to be attained no later than 2020	Daily average in hypolimnion no less than 5 mg/L; to be attained no later than 2020.

* compliance with targets to be achieved as soon as possible, but no later than the date specified

B. Lake Elsinore and Canyon Lake Nutrient TMDLs, Wasteload Allocations, Load Allocations and Compliance Dates

As discussed in the technical TMDL report, nutrient loading to Canyon Lake and Lake Elsinore varies depending on the hydrologic conditions that occur in the San Jacinto watershed. As part of the TMDL analysis and development, three hydrologic scenarios

and the relative frequency of each of these conditions (based upon an 87 year record of flow data at the USGS Gauging station downstream of Canyon Lake), were identified as shown in Table 5-9o. The resulting TMDLs, wasteload allocations and load allocations are based on 10-year running flow weighted average nutrient loads, taking into account the frequency of the three hydrologic conditions and the nutrient loads associated with each of them. Phosphorus and nitrogen TMDLs for Canyon Lake and Lake Elsinore are shown in Table 5-9p. The TMDLs, expressed as 10–year running averages, will implement the numeric targets and thereby attain water quality standards,. Phosphorus and nitrogen wasteload allocations for point source discharges and load allocations for nonpoint source discharges, also expressed as 10-year running averages, are shown in Tables 5-9q and 5-9r. No TMDLs, wasteload allocations or load allocations are specified for chlorophyll a, dissolved oxygen or ammonia. Chlorophyll a and dissolved oxygen targets are intended to serve as measures of the effectiveness of phosphorus and nitrogen reductions implemented to meet TMDL requirements. Until ammonia transformations, and nitrogen dynamics in general, are better understood, no ammonia TMDLs, wasteload allocations or load allocations are specified.

Table 5-9o
San Jacinto River Hydrologic Conditions with Relative Flow Frequency at the USGS Gauging Station Downstream of Canyon Lake (Station No. 1170500)

Hydrologic Condition	Representative Water Year	Years of Hydrologic Condition	Relative Frequency (%)	Description
Wet	1998	14	16	Both Canyon Lake and Mystic Lake overflow; flow at the USGS gauging station 11070500 17,000 AF or greater
Moderate	1994	36	41	No Mystic Lake overflow; Canyon Lake overflowed; flow at the USGS gauging station 11070500 less than 17,000 AF and greater than 2,485 AF
Dry	2000	37	43	No overflows from Mystic Lake or Canyon Lake; flow at the USGS gauging station 11070500 371 AF or less

Table 5-9p
Nutrient TMDLs and Compliance Dates for Lake Elsinore and Canyon Lake

TMDL	Final Total Phosphorus TMDL (kg/yr)[a, b]	Final Total Nitrogen TMDL (kg/yr) [a, b]
Canyon Lake	8,691	37,735
Lake Elsinore	28,584	239,025

[a] Final compliance to be achieved as soon as possible, but no later than December 31, 2020.
[b] TMDL specified as 10-year running average.

Table 5-9q

Canyon Lake
Nitrogen and Phosphorus Wasteload and Load Allocations[a]

Canyon Lake Nutrient TMDL	Final Total Phosphorus Load Allocation (kg/yr)[b, c]	Final Total Nitrogen Load Allocation (kg/yr) [b, c]
TMDL	**8,691**	**37,735**
WLA	486	6,248
Supplemental water	48	366
Urban	306	3,974
CAFO	132	1,908
LA	**8,205**	**31,487**
Internal Sediment	4,625	13,549
Atmospheric Deposition	221	1,918
Agriculture	1,183	7,583
Open/Forest	2,037	3,587
Septic systems	139	4,850

[a] The TMDL allocations for Canyon Lake apply to those land uses located upstream of Canyon Lake.
[b] Final allocation compliance to be achieved as soon as possible, but no later than December 31, 2020.
[c] TMDL and allocations specified as 10-year running average.

Table 5-9r

Lake Elsinore
Nitrogen and Phosphorus Wasteload and Load Allocations[a]

Lake Elsinore Nutrient TMDL	Final Total Phosphorus Load Allocation (kg/yr)[b, c]	Final Total Nitrogen Load Allocation (kg/yr)[c, d]
TMDL	**28,584**	**239,025**
WLA	3,845	7,791
Supplemental water [d]	3,721	7,442
Urban	124	349
CAFO	0	0
LA	**21,969**	**210,461**
Internal Sediment	21,554	197,370
Atmospheric Deposition	108	11,702
Agriculture	60	213
Open/Forest	178	567
Septic systems	69	608
CL Watershed [e]	2,770	20,774

[a] The Lake Elsinore TMDL allocations for urban, agriculture open/forest, septic systems and CAFOs only apply to those land uses located downstream of Canyon Lake.
[b] Final allocation compliance to be achieved as soon as possible, but no later than December 31, 2020.
[c] TMDL and allocations specified as 10-year running average.
[d] WLA for supplemental water should met as soon as possible as a 5 year running average.
[e] Allocation for Canyon Lake overflows

The TMDL distributes the portions of the waterbody's assimilative capacity to various pollution sources so that the waterbody achieves its water quality standards. The Regional Board supports the trading of pollutant allocations among sources, where appropriate. Trading can take place between point/point, point/nonpoint, and nonpoint/nonpoint pollutant sources. Optimizing alternative point and nonpoint control strategies through allocation tradeoffs may be a cost-effective way to achieve pollution reduction benefits. (See Section E. TMDL Implementation, Task 11, below).

C. Margin of Safety

The Canyon Lake and Lake Elsinore Nutrient TMDLs include an implicit margin of safety (MOS) as follows:

- the derivation of numeric targets based on the 25th percentile of data for Lake Elsinore; Canyon Lake numeric targets to be consistent with the Lake Elsinore targets;
- the use of multiple numeric targets to measure attainment of beneficial uses and thereby assure TMDL efficacy;
- the use of conservative literature values in the absence of site-specific data for source loading rates in the watershed nutrient model;
- the use of conservative assumptions in modeling the response of Lake Elsinore and Canyon Lake to nutrient loads; and
- requiring load reductions to be accomplished during hydrological conditions when model results indicate, in some instances, that theoretical loads could be higher.

D. Seasonal Variations/Critical Conditions

The Canyon Lake and Lake Elsinore Nutrient TMDLs account for seasonal and annual variations in external and internal nutrient loading and associated impacts on beneficial uses by the use of a 10-year running average allocation approach. This 10-year running average approach addresses variation in hydrologic conditions (wet, moderate and dry) that can dramatically affect both nutrient loading and lake response.

Compliance with numeric targets will ensure water quality improvements that prevent excessive algae blooms and fish kills, particularly during the critical summer period when these problems are most likely to occur.

E. TMDL Implementation

Typically, under dry and moderate conditions, the internal nutrient loading drives the nutrient dynamics in both Canyon Lake and Lake Elsinore. However, it is the extreme (albeit infrequent) loading that occurs during wet conditions that provides the nutrients to the lakes that remain in the lakes as internal nutrient sources in subsequent years. Given the complexity of the San Jacinto River watershed hydrology, control of nutrients input to the lakes is needed for all hydrologic conditions. Collection of additional monitoring data is critical to developing long-term solutions for nutrient control. With that in mind, the submittal of plans and schedules to implement the TMDLs should take into consideration the need to develop and implement effective short-term solutions, as well as allow for the development of long-term solutions once additional data have been generated.

Implementation of tasks and schedules as specified in Table 5-9s is expected to achieve compliance with water quality standards. Each of these tasks is described below.

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Table 5-9s

Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
TMDL Phase 1		
Task 1	Establish New Waste Discharge Requirements	March 31, 2006
Task 2	Revise Existing Waste Discharge Permits	March 31, 2006
Task 3	Identify Agricultural Operators	October 31, 2005
Task 4	Nutrient Water Quality Monitoring Program 4.1 Watershed-wide Nutrient Monitoring Plan(s) 4.2 Lake Elsinore Nutrient Monitoring Plan(s) 4.3 Canyon Lake Nutrient Monitoring Plan(s)	• Initial plan/schedule due December 31, 2005 • Annual reports due August 15 • Revised plan/schedule due December 31, 2006
Task 5	Agricultural Discharges – Nutrient Management Plan	Plan/schedule due September 30, 2007
Task 6	On-site Disposal Systems (Septic Systems) Management Plan	Dependent on State Board approval of relevant regulations (see text).
Task 7	Urban Discharges 7.1 Revision of Drainage Area Management Plan (DAMP) 7.2 Revision of the Water Quality Management Plan (WQMP) 7.3 Update of the Caltrans Stormwater Management Plan and Regional Plan 7.4 Update of US Air Force, March Air Reserve Base SWPPP	Plan/schedule due: 7.1 August 1, 2006 7.2 August 1, 2006 7.3 April 1, 2006 7.4 Dependent on Task 3 results. See text.
Task 8	Forest Area – Review/Revision of Forest Service Management Plans	Plan/schedule due September 30, 2007
Task 9	Lake Elsinore In-Lake Sediment Nutrient Reduction Plan	Plan/schedule due March 31, 2007
Task 10	Canyon Lake In-Lake Sediment Treatment Evaluation	Plan/schedule due March 31, 2007
Task 11	Watershed and Canyon Lake and Lake Elsinore In-Lake Model Updates	Plan/schedule due March 31, 2007
Task 12	Pollutant Trading Plan	Plan/schedule due September 30, 2007
Task 13	Review and Revise Nutrient Water Quality Objectives	December 31, 2009
Task 14	Review of TMDL/WLA/LA	Once every 3 years to coincide with the Regional Board's triennial review

Task 1: Establish New Waste Discharge Requirements

On or before March 31, 2006, the Regional Board shall issue new waste discharge requirements (NPDES permit) to Elsinore Valley Municipal Water District for supplemental water discharges to Canyon Lake that incorporate the appropriate interim and final wasteload allocations, compliance schedule and monitoring program requirements.

Other proposed nutrient discharges will be addressed and permitted as appropriate.

Task 2: Review and/or Revise Existing Waste Discharge Requirements

There are five Waste Discharge Requirements (WDRs) issued by the Regional Board regulating discharge of various types of wastes in the San Jacinto watershed. On or before March 31, 2006, each of these WDRs shall be reviewed and revised as necessary to implement the Lake Elsinore and Canyon Lake Nutrient TMDLs, including the appropriate nitrogen and phosphorus interim and final wasteload allocations, compliance schedules and/or monitoring program requirements.

2.1 Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside and the Incorporated Cities of Riverside County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618033 (Regional Board Order No. R8-2002-0011). The current Order has provisions to address TMDL issues (see Task 7.1, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.

2.2 Watershed-Wide Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with New Developments in the San Jacinto Watershed, Order No. 01-34, NPDES No. CAG 618005. It is expected that this Order will be rescinded once the Regional Board/Executive Officer approves a Water Quality Management WQMP) under Order No. R8-2002-0011 (see 2.1, above and Task 7.2, below)

2.3 General Waste Discharge Requirements for Concentrated Animal Feeding Operations (Dairies and Related Facilities) within the Santa Ana Region, NPDES No. CAG018001 (Regional Board Order No. 99-11).

2.4 Waste Discharge and Producer/User Reclamation Requirements for the Elsinore Valley Municipal Water District, Regional Water Reclamation Facility Riverside County, Order No. 00-1, NPDES No. CA8000027. Revised permit specifications will take into consideration the Lake Elsinore Recycled Water Pilot Project findings.

2.5 Waste Discharge Requirements for Eastern Municipal Water District, Regional Water Reclamation System, Riverside County, Order No. 99-5, NPDES No. CA8000188[1]. Revised permit specifications will take into consideration the Lake Elsinore Recycled Water Pilot Project findings.

2.6 Waste Discharge Requirements for US Air Force, March Air Reserve Base, Storm Water Runoff, Riverside County, Order No. R8-2004-0033, NPDES CA 00111007

Task 3: Identify Agricultural Operators

On or before October 31, 2005, the Regional Board shall develop a list of all known agricultural operators in the San Jacinto watershed that will be responsible for implementing requirements of this TMDL. The Regional Board will send a notice to these operators informing them of their TMDL responsibility and alerting them to potential regulatory consequences of failure to comply.

Task 4: Monitoring

No later than December 31, 2005, the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval monitoring program as required by Tasks 4.1, 4.2 and 4.3.

If modifications to the monitoring program are warranted, no later than December 31, 2006, the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a revised proposed Watershed nutrient monitoring program (Task 4.1), Lake Elsinore monitoring program (Task 4.2) and Canyon Lake nutrient monitoring program (Task 4.3).

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval for the monitoring program specified in tasks 4.1, 4.2 and 4.3. Any such individual or

[1] Contingent on Eastern Municipal Water District discharge of recycled water to Lake Elsinore.

group monitoring plan is due no later than December 31, 2005. If needed, any individual or group revised monitoring plan is due no later than December 31, 2006.

4.1 Watershed-wide Nutrient Water Quality Monitoring Program

The US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed watershed-wide nutrient monitoring program that will provide data necessary to review and update the Lake Elsinore and Canyon Lake Nutrient TMDL. Data to be collected and analyzed shall address, at a minimum: (1) determination of compliance with interim and/or final nitrogen and phosphorus allocations; and (2) determination of compliance with the nitrogen and phosphorus TMDL, including the WLAs and LAs.

At a minimum, the stations specified in Table 5-9t and shown in Figure 5-3, at the frequency specified in Table 5-9t, shall be considered for inclusion in the proposed monitoring plan. If one or more of these monitoring stations are not included, rationale shall be provided and proposed alternative monitoring locations shall be identified in the proposed monitoring plan. In addition to water quality samples, at a minimum, daily discharge (stream flow) determinations shall be made at all stations shown in Table 5-9t.

At a minimum, samples shall be analyzed for the following constituents:

- organic nitrogen
- nitrite nitrogen
- total phosphorus
- total hardness
- total suspended solids (TSS)
- biological oxygen demand (BOD)
- ammonia nitrogen
- nitrate nitrogen
- ortho-phosphate (SRP)
- total dissolved solids (TDS)
- turbidity
- chemical oxygen demand (COD)
- pH
- water temperature

The proposed monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the WLAs/LAs shall be submitted by August 15 of each year.

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. This individual monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s) shall be submitted by August 15 of each year. The report shall summarize the data and evaluate compliance with the WLAs/LAs.

It may be that implementation of these monitoring requirements will be required through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and implemented upon the Regional Board's approval.

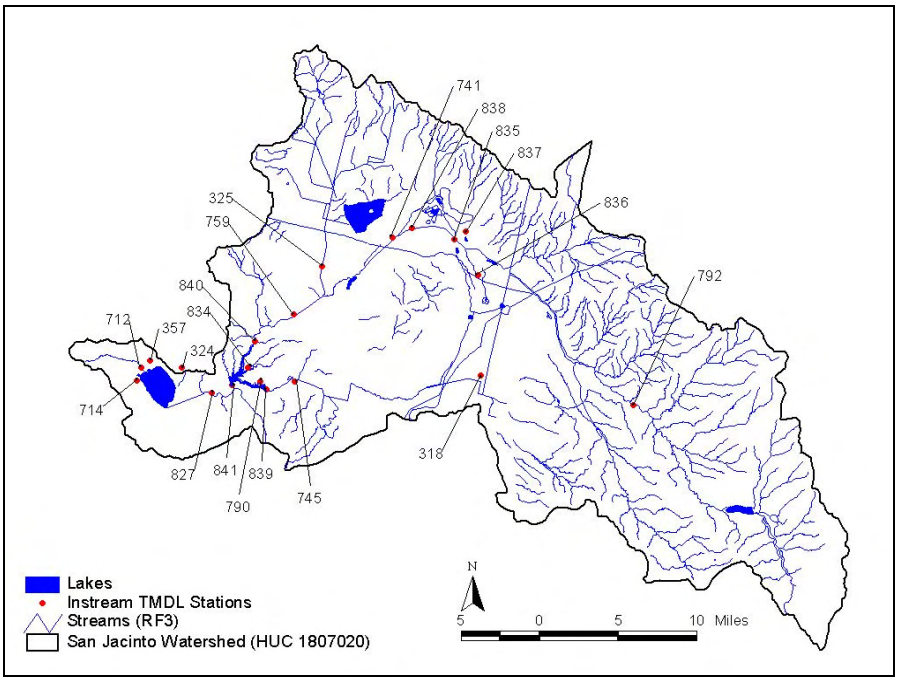

Figure 5-3 – San Jacinto River Watershed Nutrient TMDL Water Quality Stations Locations

Table 5-9t
Lake Elsinore and Canyon Lake Watershed
Minimum Required Sampling Station Locations

Station Number	Station Description
792	San Jacinto River @ Cranston Guard Station
318	Hemet Channel at Sanderson Ave.
745	Salt Creek @ Murrieta Road
759	San Jacinto River @ Goetz Rd
325	Perris Valley Storm Drain @ Nuevo Rd.
741	San Jacinto River @ Ramona Expressway
827	San Jacinto River upstream of Lake Elsinore
790	Fair Weather Dr. Storm Drain in Canyon Lake
357	4 Corners Storm Drain in Elsinore
714	Ortega Flood Channel in Elsinore
324	Lake Elsinore Outlet Channel
712	Leach Canyon Channel in Elsinore
834	Sierra Park Drain in Canyon Lake
835	Bridge Street and San Jacinto River
836	North Side of Ramona Expressway near Warren Road
837	Mystic Lake inflows
838	Mystic Lake outflows
841	Canyon Lake spillway

Frequency of sampling at all stations: dry season – none; wet season; minimum of 3 storms/year whenever possible and 8 samples across each storm hydrograph

4.2 Lake Elsinore: In-Lake Nutrient Monitoring Program

The US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed Lake Elsinore nutrient monitoring program that will provide data necessary to review and update the Lake Elsinore Nutrient TMDL. Data to be collected and analyzed shall address, at a minimum: determination of compliance with interim and final nitrogen, phosphorus, chlorophyll *a*, and dissolved oxygen numeric targets. In addition, the monitoring program shall evaluate and determine the relationship between ammonia toxicity and the total nitrogen allocation to ensure that the total nitrogen allocation will prevent ammonia toxicity in Lake Elsinore.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9u and shown in Figure 5-4, at the specified frequency indicated in Table 5-9u. With the exception of dissolved oxygen and water temperature, all samples to be analyzed shall be depth integrated.

The monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL shall be submitted by August 15 of each year.

Table 5-9u

Lake Elsinore Minimum Required Sampling Station Locations

Station Number	Station Description
LE 14	Lake Elsinore – inlet
LE 15	Lake Elsinore – four corners
LE 16	Lake Elsinore – mid-lake

Frequency of sampling at all stations: monthly October through May; bi-weekly June through September.

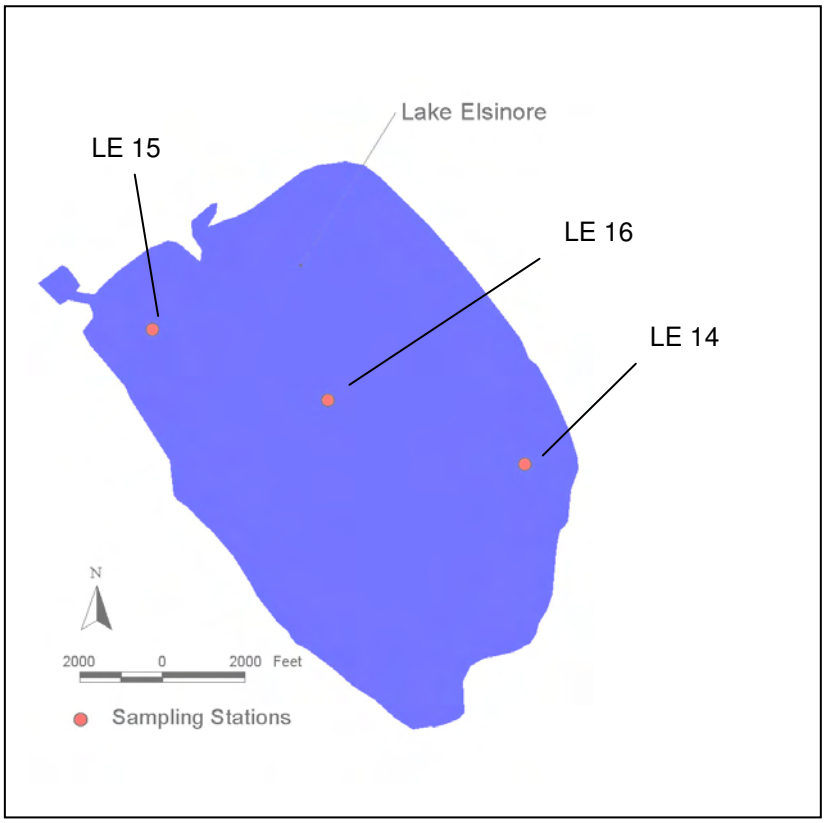

Figure 5-4 Lake Elsinore TMDL monitoring Stations

At a minimum, in-lake samples must be analyzed for the following constituents:

- specific conductance
- water temperature
- pH
- chlorophyll *a*
- organic nitrogen
- nitrite nitrogen
- organic phosphorus
- total hardness
- total dissolved solids (TDS)
- chemical oxygen demand (COD)
- dissolved oxygen
- water clarity (secchi depth)
- ammonia nitrogen
- nitrate nitrogen
- turbidity
- ortho-phosphate (SRP)
- total suspended solids (TSS)
- biological oxygen demand (BOD)

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. This individual monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s), shall be submitted by August 15 of each year. The report shall summarize the data and evaluate compliance with the numeric targets.

It may be that implementation of these requirements will be required through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and implemented upon the Regional Board's approval.

4.3 Canyon Lake Nutrient Monitoring Program

The US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed Canyon Lake nutrient monitoring program that will provide data necessary to review and update the Canyon Lake Nutrient TMDL. Data to be collected and analyzed shall address, at a minimum: determination of compliance with interim and final nitrogen, phosphorus, chlorophyll *a*, and dissolved oxygen numeric targets. In addition, the monitoring program shall evaluate and determine the relationship between ammonia toxicity and the total nitrogen allocation to ensure that the total nitrogen allocation will prevent ammonia toxicity in Canyon Lake.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9v and shown in Figure 5-5, at the specified frequency indicated in Table 5-9v. Discrete samples in Canyon Lake are to be collected in the epilimnion, hypolimnion and thermocline when and where appropriate.

The monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL shall be submitted by August 15 of each year.

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Table 5-9v

Canyon Lake Minimum Required Sampling Station Locations

Station Number	Station Description
CL 07	Canyon Lake – At the Dam
CL 08	Canyon Lake – North Channel
CL 09	Canyon Lake – Canyon Bay
CL 10	Canyon Lake – East Bay

Frequency of sampling at all stations: monthly October through May; bi-weekly June through September.

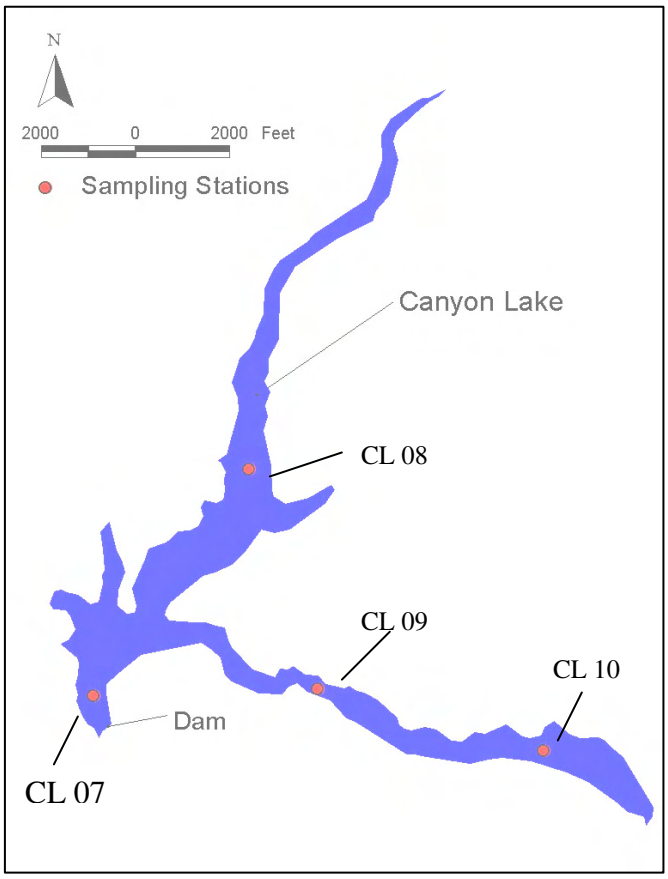

Figure 5-5 – Canyon Lake Nutrient TMDL Monitoring Station Locations

At a minimum, in-lake samples must be analyzed for the following constituents:

- specific conductance
- water temperature
- pH
- chlorophyll *a*
- organic nitrogen
- nitrite nitrogen
- organic phosphorus
- total hardness
- total dissolved solids (TDS)
- chemical oxygen demand (COD)
- dissolved oxygen
- water clarity (secchi depth)
- ammonia nitrogen
- nitrate nitrogen
- turbidity
- ortho-phosphate (SRP)
- total suspended solids (TSS)
- biological oxygen demand (BOD)

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. This individual plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s) shall be submitted by August 15 of each year. The report shall summarize the data and evaluate compliance with the numeric targets.

It may be that implementation of these requirements will be required through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and implemented upon the Regional Board's approval.

Task 5: Agricultural Activities

No later than September 30, 2007, the agricultural operators within the Lake Elsinore and Canyon Lake watershed (see Task 2), in cooperation with the Riverside County Farm Bureau, the UC Cooperative Extension, Western Riverside County Ag Coalition shall, as a group, submit a proposed Nutrient Management Plan (NMP). The Nutrient Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of a coordinated plan, one or more of the parties identified above may submit a proposed individual or group Nutrient Management Plan to conduct the above studies for areas within their jurisdiction. Any such individual or group plan shall also be submitted for Regional Board approval no later than September 30, 2007. This Nutrient Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

At a minimum, the NMP shall include, plans and schedules for the following. In order to facilitate any needed update of the numeric targets and/or the TMDLs and/or agricultural LA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule.

- implementation of nutrient controls, BMPs and reduction strategies designed to meet load allocations;
- evaluation of effectiveness of BMPs;
- development and implementation of compliance monitoring; and
- development and implementation of focused studies that will provide the following data and information
  - inventory of crops grown in the watershed;
  - amount of manure and/or fertilizer applied to each crop with corresponding nitrogen and phosphorus amounts; and
  - amount of nutrients discharged from croplands.

The Regional Board expects that the NMP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will issue appropriate waste discharge requirements.

Compliance with the agricultural load allocation may be achieved through a Regional Board approved pollutant trading program.

Task 6: On-site Disposal Systems (Septic System) Management Plan

No later than 6 months after the effective date of an agreement between the County of Riverside and the Regional Board to implement regulations adopted pursuant to Water Code Sections 13290-13291.7, or if no such agreement is required or completed, within 12 months of the effective date of these regulations, the County of Riverside and the Cities of Perris, Moreno Valley and Murrieta shall, as a group, submit a Septic System Management Plan to identify and address nutrient discharges from septic systems within the San Jacinto watershed. The Septic System Management Plan shall implement regulations adopted by the State Water Resources Control Board pursuant to California Water Code Section 13290 – 13291.7.

At a minimum, the Septic System Management Plan shall include plans and schedules for the development and implementation of the following. In order to facilitate any needed update of the numeric targets and/or the TMDLs and septic system LA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule.

- public education program;
- tracking system, including maintenance thereof;

- maintenance standards;
- enforcement provisions;
- monitoring program; and
- sanitary survey.

In lieu of a coordinated plan, one or more of the agencies with septic system oversight responsibilities may submit an individual or group Management Plan to develop the above Plan for areas within their jurisdiction. Any such individual or group plan shall also be submitted no later than March 31, 2006. This Septic System Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

Compliance with the septic systems load allocation may be achieved through a Regional Board approved pollutant trading program.

Task 7: Urban Discharges

Urban discharges, including stormwater runoff, are those discharges from the cities and unincorporated communities in the San Jacinto River watershed. These discharges are regulated under the Riverside County MS4 NPDES permit, the San Jacinto Watershed Construction Activities Storm Water permit, the State Board's General Permit for Storm Water Runoff from Construction Activities, and the State Board's General Permit for Storm Water Runoff from Industrial Activities. Nuisance and stormwater runoff from state highways and right of ways is regulated under the State of California, Department of Transportation (Caltrans) statewide general NPDES permit. Finally, nuisance and stormwater runoff from the March Air Reserve Base is also regulated through an NPDES permit.

7.1 Revision to the Drainage Area Management Plan (DAMP)

Provision XIII.B. of Order No. R8-2002-0011 (see 2.1, above) requires the permittees to revise their Drainage Area Management Plan (DAMP) to include TMDL requirements. By August 1, 2006, the permittees shall review and revise the DAMP and or WQMP (see 7.2 below) as necessary to address the requirements of these nutrient TMDLs. Further review and revision of the DAMP needed to address these TMDLs shall be completed in accordance with the requirements of Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing. The DAMP revisions shall include schedules for meeting the interim and final nutrient wasteload allocations. In order to facilitate any needed update of the numeric targets and/or the TMDLs and urban discharge WLA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The revised DAMP/WQMP shall also include a proposal for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the nutrient waste load allocation for urban runoff. The proposal must be implemented upon approval by the Regional Board after public notice and public hearing, or upon approval by the Executive Officer if no significant comments are received during the public notice period.

7.2 Revision of the Water Quality Management Plan (WQMP)

Provision VIII.B. of Order No. R8-2002-0011 (see 2.1, above) requires the permittees to develop and submit a WQMP by June 2004 for approval. On September 17, 2004, the Board approved a WQMP developed by the permittees. The approved WQMP includes source control BMPs, design BMPs and treatment control BMPs. Further revisions to the WQMP and/or the DAMP may be necessary to meet the WLA for urban runoff. By August 1, 2006, the permittees shall submit a revised WQMP and/or revised DAMP (see 7.1 above) that addresses the nutrient input from new developments and significant redevelopments to assure compliance with the nutrient wasteload allocations for urban runoff. The WQMP shall also address requirements currently in Order No. 01-34 (see 2.2, above). Once the WQMP is approved, Order No. 01-34 may be rescinded. Further review and revision of the WQMP necessary to assure that TMDL requirements are addressed shall be completed in accordance with the requirements of Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing.

7.3 Revision of the State of California, Department of Transportation (Caltrans) Stormwater Permit

Provision E.1 of Order No. 99-06-DWQ requires Caltrans to maintain and implement a Storm Water Management Plan (SWMP). Annual updates of the SWMP needed to maintain an effective program are required to be submitted to the State Water Resources Control Board.

Provision E.2 of Order No. 99-06-DWQ requires Caltrans to submit a Regional Workplan by April 1 of each year for the Executive Officer's approval. By April 1, 2006, Caltrans shall submit a Regional Workplan that includes plans and schedules for meeting the interim and final nutrient wasteload allocations, and provides a proposal for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the nutrient waste load allocations for urban runoff , which includes runoff from Caltrans facilities. In order to facilitate any needed update of the numeric targets and/or the TMDLs and urban discharge WLA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The proposal shall be implemented upon the Executive Officer's approval. Annual updates to the Regional Workplan shall include, as necessary, revised plans and schedules for meeting the interim and final nutrient wasteload allocations and revised proposals for evaluating the efficacy of control actions and compliance with the nutrient wasteload allocations.

7.4 Revision to the United States Air Force, March Air Reserve Base, Stormwater Permit

Order No. R8-2004-0033 specifies monitoring and reporting requirements for stormwater runoff from the US Air Force, March Air Reserve facility. Provision C.17

indicates that the order could be reopened to incorporate TMDL requirements. Provisions C.18.a and C.18.b require that March Air Reserve Base submit a report and revise the Stormwater Pollution Prevention Plan (SWPPP) to address any pollutants that may be causing or contributing to exceedances of water quality standards. Results from the TMDL nutrient monitoring program conducted pursuant to Task 3, shall serve as the basis for revision of the SWPPP and/or reopening the order.

Development of the Municipal permittee's WQMP and revisions to their DAMP, development of the Caltrans SWMP and Regional Workplan, and Revision to the March Air Reserve Base SWPPP, shall address the urban component of the nutrient TMDL.

Compliance with the urban wasteload allocation may be achieved through a Regional Board approved pollutant trading program.

Task 8: Forest Area –Identification of Forest Lands Management Practices

No later than September 30, 2007, the US Forest Service shall submit for approval a plan with a schedule for identification, development and implementation of Management Practices to reduce nutrient discharges emanating from the Cleveland National Forest and the San Bernardino National Forest . The Plan shall identify watershed-specific appropriate Best Management Practices (BMPs) that will be implemented to achieve the interim and final load allocations for forest/. The proposal shall include specific recommendations and a schedule for 1) evaluating the effectiveness of control actions implemented to reduce nutrient discharges from forest and 2) evaluating compliance with the nutrient load allocation from forest/open space. The revised watershed-specific Management Practices shall be implemented upon Regional Board approval at a duly noticed public meeting.

Compliance with the open space/forest load allocation may be achieved through a Regional Board approved pollutant trading program.

Task 9: Lake Elsinore Sediment Nutrient Reduction Plan

No later than March 31, 2007, the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, the State of California, Department of Transportation (Caltrans), the State of California, Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed plan and schedule for in-lake sediment nutrient reduction for Lake Elsinore. The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to prevent the

release of nutrients from lake sediments to support development of a long-term strategy for control of nutrients from the sediment. The submittal shall also contain a proposed sediment nutrient monitoring program to evaluate the effectiveness of any strategies that are implemented. The Lake Elsinore In-lake Sediment Nutrient Reduction Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group In-lake Sediment Nutrient Reduction Plan for approval by the Regional Board. Any such individual or group Plan is due no later than March 31, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting.

Compliance with the Lake Elsinore Sediment Nutrient Reduction Plan requirement may be achieved through a Regional Board approved pollutant trading program.

Task 10: Canyon Lake Sediment Nutrient Treatment Evaluation Plan

No later than March 31, 2007, the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed plan and schedule for evaluating in-lake sediment nutrient treatment strategies for Canyon Lake. The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to prevent the release of nutrients from lake sediments in order to develop a long-term strategy for control of nutrients from the sediment. The submittal shall also contain a proposed sediment nutrient monitoring program to evaluate the effectiveness of any strategies that are implemented. The Canyon Lake In-lake Sediment Nutrient Treatment Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group In-lake Sediment Nutrient Treatment Evaluation Plan for approval by the Regional Board. Any such individual or group Plan is due no later than March 31, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting.

Task 11: Update of Watershed and In-Lake Nutrient Models

No later than March 31, 2007, the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities

of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators shall, as a group, submit to the Regional Board for approval a proposed plan and schedule for updating the existing Lake Elsinore/San Jacinto River Nutrient Watershed Model and the Canyon Lake and Lake Elsinore in-lake models. The plan and schedule must take into consideration additional data and information that are generated from the respective TMDL monitoring programs. In order to facilitate any needed update of the numeric targets and/or the TMDLs/WLAs/LAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The plan for updating the Watershed and In-lake Models shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group plan for update of the Lake Elsinore/San Jacinto River Nutrient Watershed Model and the Canyon Lake and Lake Elsinore in-lake models. The plan and schedule must take into consideration additional data and information that are generated from the respective TMDL monitoring programs. In order to facilitate any needed update of the numeric targets and/or the TMDLs/WLAs/LAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. Any such individual or group Plan is due no later than March 31, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting.

Task 12: Pollutant Trading Plan

No later than September 30, 2007, the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators shall, as a group, submit to the Regional Board for approval a proposed Pollutant Trading Plan. At a minimum, this plan shall contain a plan, schedule and funding strategy for project implementation, an approach for tracking pollutant credits and a schedule for reporting status of implementation of the Pollutant Trading Plan to the Regional Board, The Pollutant Trading Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group Pollutant Trading Plan. Any such individual or group Plan is due no later than September 30, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting.

Task 13: Review and Revision of Water Quality Objectives

By December 31, 2009, the Regional Board shall review and revise as necessary the total inorganic nitrogen numeric water quality objectives for Lake Elsinore and Canyon Lake. In addition, the Regional Board shall evaluate the appropriateness of establishing total phosphorus and un-ionized ammonia numeric water quality objectives for both Lake Elsinore and Canyon Lake. Given budgetary constraints, completion of this task is likely to require substantive contributions from interested parties.

Task 14: Review/Revision of the Lake Elsinore/Canyon Lake Nutrient TMDL

The basis for the TMDLs and implementation schedule will be re-evaluated at least once every three years[2] to determine the need for modifying the load allocations, numeric targets and TMDLs. Regional Board staff will continue to review all data and information generated pursuant to the TMDL requirements on an ongoing basis. Based on results generated through the monitoring programs, special studies, modeling analysis, and/or special studies by one or more responsible parties, changes to the TMDL, including revisions to the numeric targets, may be warranted. Such changes would be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by these or other studies

(End of Resolution No. R8-2004-0037)

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[2] The three-year schedule will coincide with the Regional Board's triennial review schedule.

Middle Santa Ana River Watershed (Amended by Resolution No. R8-2005-0001)

The Middle Santa Ana River Watershed covers approximately 488 square miles and lies largely in the southwestern corner of San Bernardino County, and the northwestern corner of Riverside County. A small part of Los Angeles County (Pomona/Claremont area) is also included. This watershed is comprised of three sub–watersheds. The first sub-watershed is the Chino Basin Watershed, which includes portions of San Bernardino County, Los Angeles County, and Riverside County. Surface drainage in this area is directed to Chino Creek and Cucamonga/Mill Creek and is generally southward, from the San Gabriel Mountains toward the Santa Ana River and the Prado Flood Control Basin. The second sub–watershed, the Riverside Watershed, is located in Riverside County. Surface drainage in this area is generally westward from the City of Riverside to the Santa Ana River, Reach 3. The third sub–watershed, the Temescal Canyon Watershed, is also located in Riverside County. Surface drainage in this area is generally northward to Temescal Creek.

Land uses in the Middle Santa Ana River watershed include urban, agriculture, and open space. Although originally developed as an agricultural area, the watershed is being steadily urbanized. Incorporated cities in the Middle Santa Ana River watershed include Pomona, Chino Hills, Upland, Montclair, Claremont, Ontario, Rancho Cucamonga, Rialto, Chino, Fontana, Norco, Corona, and Riverside. In addition, there are several pockets of urbanized unincorporated areas. The current population of the watershed, based upon 2000 census data, is approximately 1.4 million people. The principal remaining agricultural area in the watershed is the area formerly known as the Chino Dairy Preserve. This area is located in the south–central part of the Chino Basin watershed and contains approximately 300,000 cows, which generate the waste equivalent of more than two million people. Recently, the cities of Ontario and Chino annexed the San Bernardino County portions of this area. The remaining portion of the former preserve, which is in Riverside County, remains unincorporated. Open space areas include National Forest lands and State Parks lands.

Middle Santa Ana River Watershed Bacterial Indicator Total Maximum Daily Loads(TMDLs)

Middle Santa Ana River Watershed waterbodies listed on the Clean Water Act Section 303(d) list of impaired waters due to violations of REC1 fecal coliform bacteria objectives are shown in Table 5-9w.

Table 5-9w – Middle Santa Ana River Watershed Waterbodies on the 303(d) List Due to Bacterial Contamination

Waterbody, Reach
Santa Ana River, Reach 3
Chino Creek, Reach 1
Chino Creek, Reach 2
Mill Creek (Prado Area)
Cucamonga Creek, Reach 1
Prado Park Lake

During storm events, these waterbodies receive and transport runoff from urban, agricultural, and open space areas. During dry weather, these waterbodies receive and transport nuisance runoff, primarily from urban areas. Based on monitoring results, and observed waterbody conditions (fish kills and waste-laden stormflows), the Regional Board placed these waterbodies on the 303(d) list of impaired waters due to levels of bacterial indicators that exceeded established objectives for REC1 uses. The listings took place from 1988 to 1998.
A TMDL technical report prepared by Regional Board staff describes the bacterial indicator related problems in the Middle Santa Ana River Watershed waterbodies in greater detail and discusses the technical basis for the TMDLs that follow [Ref. # 30].

A. Middle Santa Ana River Watershed Bacterial Indicator TMDL Numeric Targets

Bacterial indicator numeric targets for the Middle Santa Ana River Watershed waterbodies shown in Table 5-9x are based, in part, on the fecal coliform water quality objective specified in Chapter 4 for the protection of body-contact recreation (REC1) in inland surface waters.

Recognizing that, in the future, *Escherichia coli* (*E. coli*) may be incorporated into the Basin Plan as new bacterial water quality objectives for REC1, alternative numeric targets for *E. coli* are also specified[1]. These targets are based on *E. coli* criteria recommended by the U.S. Environmental Protection Agency [Ref #31]. The *E. coli* levels were chosen to roughly correspond to the health risk level associated with the fecal coliform objectives.

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[1] USEPA is requiring the states to evaluate and incorporate more appropriate bacterial indicators, including *E. coli*, as water quality standards based on its Ambient Water Quality Criteria for Bacteria – 1986. The Regional Board is participating in the efforts of the Storm Water Quality Standards Task Force (SWQSTF), which is evaluating USEPA's bacterial indicator recommendations and REC1 beneficial use designations for waterbodies within the Santa Ana Region, including the Middle Santa Ana River watershed waterbodies. This numeric target and resulting TMDLs, WLAs and LAs will be adjusted accordingly when and if recommendations from the SWQSTF are incorporated into the Basin Plan.

The numeric targets for both bacterial indicators incorporate an explicit 10% margin of safety to address uncertainties recognized in the development of the TMDLs.

These numeric targets are specified as follows:

> **Fecal coliform: log mean less than 200 organisms/100 mL based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30–day period**.
>
> ***E. coli*: log mean less than 126 organisms/100 mL based on five or more samples per 30–day period, and not more than 10% of the samples exceed 235 organisms/100mL for any 30 day period.**

The fecal coliform numeric targets (and other fecal coliform related provisions of these TMDLs) will become ineffective upon the replacement of the fecal coliform REC1 objectives in the Basin Plan with REC1 objectives based on *E. coli* Incorporation of new *E. coli* objectives will be considered through the Basin Planning process.

B. Middle Santa Ana River Watershed Bacterial Indicator TMDLs, Wasteload Allocations, Load Allocations and Compliance Dates

As discussed in the technical TMDL Report, the bacterial indicator TMDLs are expressed in terms of density since it is the number of organisms in a given volume of water (i.e., their density), and not their mass that is significant with respect to public health and the protection of beneficial uses. Similarly, the wasteload allocations for point source discharges (WLAs) and load allocations for nonpoint source discharges (LAs) are also based on density. The density–based WLAs and LAs do not add up to equal the TMDLs, since this is not scientifically valid. To achieve the density–based TMDLs, each WLA and LA must meet the density–based TMDL. As indicated in Table 5-9x, the TMDLs, WLAs and LAs also include a 10% margin of safety (see C., below) applied to the existing Basin Plan fecal coliform objective for REC1 for inland surface waters and to the alternative indicator *E. coli* criteria recommended by the U.S. Environmental Protection Agency. Again, the *E. coli* was chosen to correspond with the health risk level associated with the fecal coliform objectives.

WLAs are specified for urban discharges and discharges from Confined Animal Feeding Operations, including stormwater. LAs are specified for runoff from other types of agriculture and from natural sources (open space/undeveloped forest land). TMDLs, WLAs and LAs are specified for both dry weather discharges and wet weather discharges, with separate compliance schedules. An extended schedule for compliance with the wet weather TMDLs is specified in light of the expected increased difficulty in achieving compliance under these conditions.

Table 5-9x – Total Maximum Daily Loads, Waste Load Allocations, and Load Allocations for Bacterial Indicators in Middle Santa Ana River Waterbodies[a,b,c]

Indicato r	Total Maximum Daily Loads for Bacterial Indicators	Waste Load Allocation for Bacterial Indicators in Urban Runoff including stormwater discharges	Waste Load Allocation for Bacterial Indicators in Confined Animal Feeding Operations discharges	Load Allocation for Bacterial Indicators in Agricultural runoff discharges	Load Allocation for Bacterial Indicators from Natural Sources
Dry Summer Conditions: April 1 through October 31, as soon as possible, but no later than December 31, 2015					
Fecal coliform	5–sample/30–day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30–day period.
E. coli	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.
Wet Winter Conditions: November 1 through March 31, as soon as possible, but no later than December 31, 2025					
Fecal coliform	5–sample/30–day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30–day period.	5–sample/30–day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30–day period.
E. coli	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.	5–sample/30–day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30–day period.

[a] To be achieved as soon as possible, but no later than dates specified.
[b] TMDLs, WLAs and LAs, include a 10% Margin of Safety
[c] The fecal coliform TMDLs, WLAs, and LAs become ineffective upon the replacement of the REC1 fecal coliform objectives in the Basin Plan by approved REC1 objectives based on E. coli.

C. Margin of Safety

A 10% margin of safety is explicitly incorporated into the Bacterial Indicator TMDLs for the Middle Santa Ana River Watershed to account for unknowns, such as bacterial regrowth, bacteria dilution and organism die–off. As additional data on bacterial dynamics in the Middle Santa Ana River watershed are developed, the margin of safety can be adjusted accordingly.

D. Seasonal Variations/Critical Conditions

The Basin Plan REC1 fecal coliform objectives apply year-round; no distinctions based on climate or other conditions that may affect actual REC1 use are specified[2]. As shown in Table 5-9x, different compliance dates are specified for dry season discharges and wet season discharges. This ensures that dry season recreational beneficial uses are addressed on a priority basis. Additional time is allowed to address complexities associated with the control of wet weather discharges.

E. TMDL Implementation

Implementation is expected to result in compliance with the water quality objectives/numeric targets for fecal coliform and with the numeric targets for *E. coli*. The intent is to ensure protection of the REC1 beneficial uses of Middle Santa Ana River Watershed waterbodies. Collection of additional monitoring data is critical to developing long-term solutions for bacterial indicator control, as well as to consider whether changes to the TMDL are appropriate. With that in mind, the requirements for submittal of plans and schedules to implement the TMDLs take into consideration the need to develop and implement effective short-term solutions, as well as allow for the development of long-term solutions once additional data have been generated.

Implementation of tasks and schedules as specified in Table 5-9y is expected to achieve compliance with the TMDLs and, thereby, water quality standards. Each of these tasks is described below.

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[2] The SWQSTF may recommend changes to the REC1 objectives to reflect conditions, such as high flows, that affect REC1 use. Any such changes will be considered through the Basin Planning process

Table 5-9y – Middle Santa Ana River Watershed Bacterial Indicator TMDL Implementation Plan/Schedule Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
TMDL Phase 1		
Task 1	Revise Existing Waste Discharge Requirements	February 28, 2008
Task 2	Identify Agricultural Operators	June 30, 2007
Task 3	Develop Watershed-Wide Bacterial Indicator Water Quality Monitoring Program Implement Watershed-Wide Bacterial Indicator Water Quality Monitoring Program	November 30, 2007 Upon Regional Board approval Seasonal reports due May 31 and December 31 of each year Triennial reports due every 3 years beginning with first report due February 15, 2010.
Task 4	Urban Discharges 4.1 Develop and Implement Bacterial Indicator Urban Source Evaluation Plan 4.2 San Bernardino County MS4: Revise Municipal Storm Water Management Program (MSWMP) 4.3 Riverside County MS4: Revise Drainage Area Management Plan (DAMP) 4.4 San Bernardino County MS4: Revise Water Quality Management Plan (WQMP) 4.5 Riverside County MS4: Revise Water Quality Management Plan (WQMP)	Plan/schedule due 4.1 November 30, 2007 4.2 Dependent on Task 4.1 results (see text) 4.3 Dependent on Task 4.1 results (see text) 4.4 Dependent on Task 4.1 results (see text) 4.5 Dependent on Task 4.1 results (see text)
Task 5	Agricultural Discharges 5.1 Develop and Implement Bacterial Indicator Agricultural Source Evaluation Plan 5.2 Develop and Implement Bacterial Indicator Agricultural Source Management Plan	Plan/schedule due 5.1 November 30, 2007 5.2 Dependent on Task 5.1 results (see text)
Task 6	Review of TMDLs/WLAs/LAs	Once every 3 years to coincide with the Regional Board's triennial review, or more frequently as warranted

Task 1: Review and/or Revise Existing Waste Discharge Requirements

There are three Waste Discharge Requirements (WDRs) issued by the Regional Board regulating discharge of various types of wastes in the watershed. On or before **February 28, 2008**, each of these WDRs shall be reviewed and revised as necessary to implement the TMDLs, including the appropriate wasteload allocations, compliance schedules and/or monitoring program requirements.

1.1 Waste Discharge Requirements for the San Bernardino County Flood Control and Transportation District, the County of San Bernardino and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618036 (Regional Board Order No. R8-2002-0012). The current Order has provisions to address TMDL issues (see Task 4, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.

1.2 Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside and the Incorporated Cities of Riverside County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618033 (Regional Board Order No. R8-2002-0011). The current Order has provisions to address TMDL issues (see Task 4, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.

1.3 General Waste Discharge Requirements for Concentrated Animal Feeding Operations (Dairies and Related Facilities) within the Santa Ana Region, NPDES No. CAG018001 (Regional Board Order No. 99-11). Updated waste discharge requirements for Concentrated Animal Feeding Operations are expected to be considered by the Regional Board in 2005. These requirements will include appropriate TMDL requirements.

Other waste discharge requirements may be reviewed and/or revised to address bacterial indicator discharges as appropriate.

Task 2: Identify Agricultural Operators

On or before **June 30, 2007**, the Regional Board shall develop a list of all known agricultural owners/operators in the Middle Santa Ana River watershed that will be responsible for implementing requirements of these TMDLs. The Regional Board will send a notice to these operators informing them of their TMDL responsibility and alerting them to the potential regulatory consequences of failure to comply.

To implement the agricultural load allocations for non-Concentrated Animal Feeding Operations, monitoring program requirements specified in Task 3 and the agricultural source evaluation studies (Task 5), the Regional Board may issue waste discharge requirements or a waiver of such waste discharge requirements that is conditioned on satisfactory compliance with these TMDL elements.

Task 3: Watershed-Wide Bacterial Indicator Water Quality Monitoring Program

No later than **November 30, 2007**, the US Forest Service, the County of San Bernardino, the County of Riverside, the cities of Ontario, Chino, Chino Hills, Montclair, Rancho Cucamonga, Upland, Rialto, Fontana, Norco, Riverside, and Corona, Pomona and Claremont and agricultural operators in the watershed, shall as a group, submit to the Regional Board for approval a proposed watershed-wide monitoring program that will provide data necessary to review and update the TMDLs. Data to be collected and analyzed shall address, at a minimum, determination of compliance with the TMDLs, WLAs and LAs.

At a minimum, the stations specified in Tables 5-9z and 5-9aa and shown in Figure 5-6, at the frequency specified in Tables 5-9z and 5-9aa, shall be considered for inclusion in the proposed monitoring plan. If one or more of these monitoring stations are not included, the rationale shall be provided and proposed alternative monitoring locations shall be identified in the proposed monitoring plan. The proposed monitoring plan shall also include a plan to compile streamflow measurements at existing USGS stream gauging stations.

At a minimum, samples shall be analyzed for the following constituents:

- Fecal Coliform
- Escherichia Coli (E. coli)
- Total Suspended Solids
- pH
- Temperature
- Electrical Conductivity
- Dissolved Oxygen
- Turbidity

The proposed monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. Seasonal reports summarizing and including copies of the data collected during the dry season and wet season monitoring periods shall be submitted by May 31 and December 31 of each year. In order to facilitate review and update of the numeric targets and/or the TMDLs, WLAs, LAs, a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs/LAs shall be submitted every three years, beginning with the first report due February 15, 2010.

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. Any such individual or group monitoring plan is due no later than **November 30, 2007** and shall be implemented upon Regional Board approval at a duly noticed public

meeting. Seasonal reports summarizing and including copies of the data collected during the dry season and wet season monitoring periods shall be submitted by May 31 and December 31 of each year. In order to facilitate review and update of the numeric targets and/or the TMDLs, WLAs, LAs, a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs/LAs shall be submitted every three years, beginning with the first report due **February 15, 2010**.

It may be that implementation of these monitoring requirements will be required through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and shall be implemented upon the Regional Board's approval.

Table 5-9z – Watershed Minimum Required Weekly Sampling Station Locations

Station Number	**Station Description**
C1	Icehouse Canyon Creek
C2	Chino Creek at Schaeffer Avenue
C3	Prado Park Lake at lake outlet
C7	Chino Creek at Central Avenue
C8	Chino Creek at Prado Golf Course
M2	Cucamonga Creek at Regional Plant No. 1
M5	Mill Creek at Chino–Corona Road
S1	Santa Ana River at MWD Crossing
S3	Santa Ana River at Hamner Avenue
T1	Temescal Wash at Lincoln Avenue
TQ1	Tequesquite Arroyo at Palm Avenue

Frequency of sampling:
dry season: weekly
wet season: two 30-day sampling periods during which a minimum of 5 samples are to be collected (at least one sample weekly) and if possible, a minimum of 5 of those samples must be from storm events.

Table 5-9a-a --Additional Watershed Storm Event Sampling Locations

Station Number	Station Description
M3	Bon View Avenue @ Merrill Avenue
M4	Archibald Avenue @ Cloverdale Avenue
G1	Grove Channel @ Pine Avenue
E1	Euclid Avenue Channel @ Pine Avenue

Frequency of sampling: wet weather – one sample/storm event for 5 storm events/year; dry weather – none.

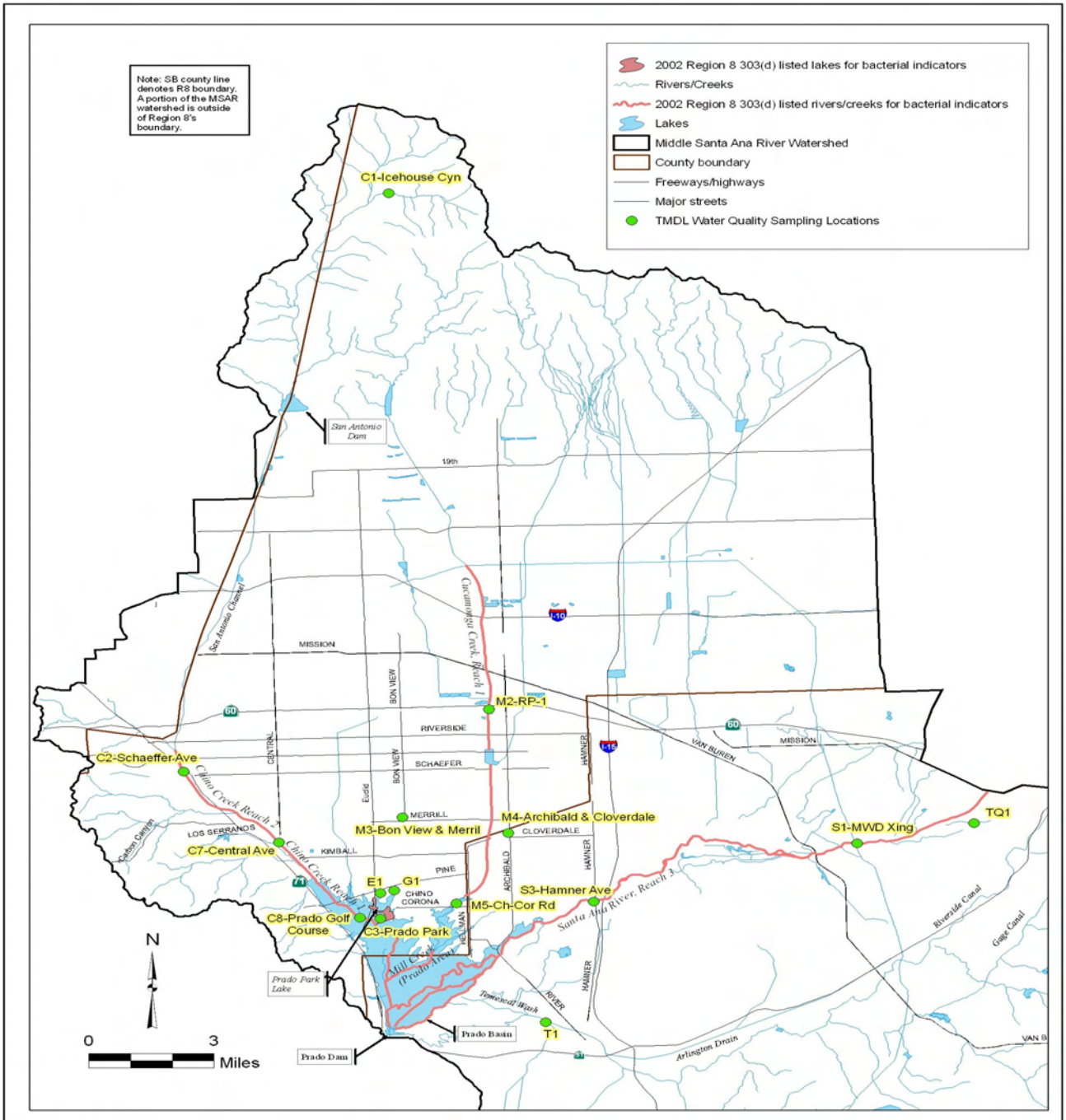

FIGURE 5-6: TMDL WATER QUALITY SAMPLING LOCATIONS

CALIFORNIA Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

Map created January 2005
Map created by: HB

Data Sources:
Middle Santa Ana River Watershed:
based on Calwater v. 2.2.1 boundaries -
CA Spatial Information Library (2004),
Santa Ana River reach designations,
and GDT streets (SWRCB, 2002)
County: CA Spatial Information Library (2004)
Rivers/creeks, and lakes:
CA Spatial Information Library (1998)
2002 303(d) listed water bodies:
SWRCB (2003)

File name: wbr_tmdl_2.mxd

Task 4: Urban Discharges

Phase I urban discharges, including stormwater runoff, include those from the cities and unincorporated communities in the Middle Santa Ana River Watershed. These discharges are regulated under the MS4 NPDES permits identified in Tasks 1.1 and 1.2 (Review and Revise Existing Waste Discharge Requirements), above. The requirements of these NPDES permits differ somewhat and therefore the TMDL implementation requirements that pertain to the permittees under each permit also vary slightly, as shown below[3].

4.1 Develop and Implement Bacterial Indicator Urban Source Evaluation Plans

On or before **November 30, 2007**, the County of San Bernardino, the County of Riverside, the cities of Ontario, Chino, Chino Hills, Montclair, Rancho Cucamonga, Upland, Rialto, Fontana, Norco, Riverside, and Corona, Pomona and Claremont shall develop a Bacterial Indicator Urban Source Evaluation Plan(s) (USEP). This plan shall include steps needed to identify specific activities, operations, and processes in urban areas that contribute bacterial indicators to Middle Santa Ana River Watershed waterbodies. The plan shall also include a proposed schedule for completion of each of the steps identified. The proposed schedules can include contingency provisions that reflect uncertainty concerning the schedule for completion of the SWQSTF work and/or other investigations that may affect the steps that are proposed. The USEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

4.2 Revise the San Bernardino County Municipal Storm Water Management Program (MSWMP)

Provision XVI.3. of Order No. R8-2002-0012 (see 1.1, above) requires the permittees to revise their Municipal Storm Water Management Program (MSWMP) to include TMDL requirements. Revisions to the MSWMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the MSWMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the MSWMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval, a plan and schedule to review and revise the MSWMP as necessary to incorporate measures to address the results of

[3] The San Bernardino MS4 permit requires the development and implementation of a Municipal Stormwater Management Program (MSWMP) to address stormwater discharges from existing urban activities. For the Riverside County MS4 permit, the Drainage Area Management Plan (DAMP) addresses stormwater discharges from existing urban activities.

the USEP and/or other studies. Further review and revision of the MSWMP needed to address these TMDLs shall be completed in accordance with the requirements of Order No. R8-2002-0012 or amendments thereto that are adopted by the Regional Board at a public hearing. The MSWMP revisions shall include schedules for meeting the bacterial indicator wasteload allocations based on the schedule established in these TMDLs. In order to facilitate any needed update of the numeric targets and/or the TMDLs and urban discharge WLAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The permittees shall also provide a proposal and schedule for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the bacterial indicator waste load allocations for urban runoff. The plan and schedule to review the MSWMP must be implemented upon approval by the Regional Board after public notice and public hearing, or upon approval by the Executive Officer if no significant comments are received during the public notice period.

4.3 Revise the Riverside County Drainage Area Management Plan (DAMP)

Provision XIII.B. of Order No. R8-2002-0011 (see 1.2, above) requires the permittees to revise their Drainage Area Management Plan (DAMP) to include TMDL requirements. Revisions to the DAMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the DAMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the DAMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval, a plan and schedule to review and revise the DAMP as necessary to incorporate measures to address the results of the USEP and/or other studies. Further review and revision of the DAMP needed to address these TMDLs shall be completed in accordance with the requirements of Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing. The DAMP revisions shall include schedules for meeting the bacterial indicator wasteload allocations based on the schedule established in these TMDLs. In order to facilitate review and update of the numeric targets and/or the TMDLs and urban discharge WLAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The revised DAMP shall also include a proposal and schedule for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the bacterial indicator waste load allocations for urban runoff. The plan and schedule to review and revise the DAMP must be implemented upon approval by the Regional Board after public

notice and public hearing, or upon approval by the Executive Officer if no significant comments are received during the public notice period.

4.4 Revise the San Bernardino County Water Quality Management Plan (WQMP)

Provision XII.B. 1. of Order No. R8-2002-0012 requires the permittees to develop and submit a WQMP for new developments and significant redevelopments by January 2004 for the Executive Officer's approval. Revisions to the WQMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the WQMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the WQMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval a plan and schedule to review and revise the WQMP that addresses the bacterial indicator input from new developments and significant redevelopments to assure compliance with the bacterial indicator wasteload allocations for urban runoff. Further review and revision of the WQMP necessary to address TMDL requirements, shall be completed in accordance with the requirements of Order No. R8-2002-0012 or amendments/updates thereto that are adopted by the Regional Board at a public hearing.

4.5 Revise the Riverside County Water Quality Management Plan (WQMP)

Provision VIII.B. of Order No. R8-2002-0011 (see 1.2, above) requires the permittees to develop and submit a WQMP for new developments and significant redevelopments by June 2004 for approval. On September 17, 2004, the Board approved a WQMP developed by the permittees. The approved WQMP includes source control BMPs, design BMPs and treatment control BMPs. Further revisions to the WQMP may be necessary to meet the WLA for urban runoff. Such revisions may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the WQMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the WQMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval a plan and schedule for review and revision of the WQMP that addresses the bacterial indicator input from new developments and significant redevelopments to assure compliance with the bacterial indicator wasteload allocations for urban runoff. Further review and revision of the WQMP necessary to address TMDL requirements, shall be completed in accordance with the requirements of

Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing.

If the results of studies conducted pursuant to Tasks 3 and 4.1 above demonstrate that either the Phase II non-traditional small MS4 discharges covered under the statewide Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Systems (Order No. 2003-0005-DWQ) or industrial discharges from facilities covered by the statewide Industrial Stormwater General Permit (Order 97-03-DWQ) or any Regional Board individual industrial permit, are responsible, to a significant degree, for exceedances of the urban WLAs, the Regional Board will take the appropriate regulatory steps to address these discharges.

Task 5: Agricultural Discharges

Agricultural discharges include stormwater runoff, wastewater release and tailwater runoff from agricultural land uses. Tailwater runoff is irrigation water that runs off of agricultural land. Agricultural land uses include concentrated animal feeding operations and irrigated and dry-land farming in the Middle Santa Ana River Watershed. Concentrated animal feeding operations are regulated under WDRs (see Task 1.3,above); irrigated agriculture and dry-land farming are not currently regulated.

5.1 Develop and Implement Bacterial Indicator Agricultural Source Evaluation Plans

On or before **November 30, 2007**, concentrated animal feeding facility operators and agricultural operators in the Middle Santa Ana River Watershed shall develop and implement Bacterial Source Agricultural Source Evaluation Plans (AGSEP). These plans shall include steps needed to identify specific activities, operations, and processes in agricultural areas that contribute bacterial indicators to Middle Santa Ana River Watershed waterbodies. The plan shall also include a proposed schedule for completion of each of the steps identified. The proposed schedules can include contingency provisions that reflect uncertainty concerning the schedule for completion of the SWQSTF work and/or other investigations that may affect the steps that are proposed. The AGSEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

The Regional Board expects that the AGSEP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will utilize appropriate waste discharge requirements including those for concentrated animal feeding operations (see 1.3, above), or other Water Code authorities.

In lieu of a coordinated source evaluation plan, one or more of the parties identified above may submit a proposed individual or group AGSEP to conduct the above studies for areas within their jurisdiction. Any such individual or group plan shall also be submitted for Regional Board approval no later than. **November 30, 2007**. This AGSEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

5.2 Develop and Implement a Bacterial Indicator Agricultural Source Management Plan

Based on the results of Task 5.1 or other studies conducted in the watershed, concentrated animal feeding operators and agricultural operators within the Middle Santa Ana River Watershed shall, as a group, submit a proposed Bacterial Indicator Agricultural Source Management Plan (BASMP). Because of uncertainties regarding the timing of completion of these studies and in recognition that readily identifiable steps may be taken to reduce bacterial discharges from agricultural lands, it is not feasible to identify an explicit date whereby the development and implementation of the BASMP is to be accomplished. Instead, the Executive Officer shall notify agricultural operators of the need to submit the proposed BASMP in whole or to submit plans and schedule to address a subset of tasks identified in the AGSEP. Within 90 days of notification by the Executive Officer, the proposed BASMP, or a subset thereof, shall be submitted. The BASMP, or subset thereof, shall be implemented upon Regional Board approval at a duly noticed public meeting. At a minimum, the BASMP shall include, plans and schedules for the following:

A. implementation of bacterial indicator controls, BMPs and reduction strategies designed to meet load allocations;
B. evaluation of effectiveness of BMPs; and
C. development and implementation of compliance monitoring program(s).

The Regional Board expects that the BASMP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will utilize appropriate waste discharge requirements or other Water Code authorities.

In lieu of a coordinated plan, one or more of the parties identified above may submit a proposed individual or group BASMP to develop and implement the above plan for areas within their jurisdiction. Any such individual or group plan shall also be submitted for Regional Board approval. Because of uncertainties regarding the timing of completion of these studies and in recognition that readily identifiable steps may be taken to reduce bacterial discharges from agricultural lands, it is not feasible to identify an explicit date whereby the development and implementation of the BASMP is to be accomplished. Instead, the Executive Officer shall notify agricultural operators of the need to submit the proposed BASMP in whole or to submit plans and schedule to address a subset of tasks

identified in the AGSEP. Within 90 days of notification by the Executive Officer, the proposed BASMP, or a subset therefore, shall be submitted. This BASMP, or a subset thereof, shall be implemented upon Regional Board approval at a duly noticed public meeting.

Task 6: Review/Revision of the Bacterial Indicator TMDL (TMDL "Re-opener")

The basis for the TMDLs and implementation schedule will be re-evaluated at least once every three years[4] to determine the need for modifying the load and wasteload allocations, numeric targets and TMDLs. Regional Board staff will continue to review all data and information generated pursuant to the TMDL requirements on an ongoing basis. Based on results generated through the monitoring programs, special studies, modeling analysis, efforts of the Storm Water Quality Standards Task Force[5] and/or special studies by one or more responsible parties, changes to the TMDLs, including revisions to the numeric targets, WLAs and LAs, may be warranted. Such changes would be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by the results of monitoring and/or other relevant studies

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[4] The three-year schedule will coincide with the Regional Board's triennial review schedule.

[5] Stakeholders formed the Storm Water Quality Standards Task Force (Task Force) in 2002 to support review and update of the bacterial quality objectives for REC1 waters and to review the REC1 designations themselves to assure their accuracy. Participants include representatives from the Santa Ana Watershed Project Authority, (SAWPA) flood control agencies from the 3 counties within the Santa Ana Region, POTW dischargers and stormwater staff from various municipalities in the watershed. Environmental groups, Regional Board staff and USEPA staff are also participants. SAWPA staff serve as facilitators for the Task Force.

BAY PROTECTION AND TOXIC CLEANUP PROGRAM

Legislation enacted in 1989 added Chapter 5.6, Bay Protection and Toxic Cleanup, to Division 7 of the California Water Code (Sections 13390-13396). These new sections require the State Board and Regional Boards to establish programs for the maximum protection of beneficial uses of bays and estuaries, focusing on water quality problems due to toxic substances. In part, the State Board was directed to formulate and adopt a water quality control plan for Enclosed Bays and Estuaries and a workplan for the development of sediment quality objectives. When setting waste discharge requirements, the Regional Boards must implement the water quality control plan and any sediment quality objectives which may be adopted by the State Board.

The Bay Protection and Toxic Cleanup Program (BPTCP) must also include plans to identify and remediate "toxic hot spots." These are areas in the enclosed bays, estuaries or adjacent waters where the contamination affects the interests of the state and "…where hazardous substances have accumulated in the water or sediment to levels which (1) may pose a substantial present or potential hazard to aquatic life, wildlife, fisheries or human health, or (2) may adversely affect the beneficial uses of bay, estuary or ocean waters as defined in water quality control plans, or (3) exceeds adopted water quality or sediment quality objectives." Criteria for the assessment and priority ranking of toxic hot spots are to be developed by the State Board in coordination with the California Department of Fish and Game and the California Office of Environmental Health Hazard Assessment (OEHHA). The ranking criteria will be used by the Regional Board to prioritize toxic hot spots based on the severity of the problem.

The BPTCP consists of both short- and long-term activities. The short-term activities include:

- Develop and maintain a program to identify toxic hot spots, plan for their cleanup or mitigation, and amend Water Quality Control Plans and policies to abate toxic hot spots;
- Develop and implement regional monitoring and assessment programs;
- Develop numeric sediment quality objectives;
- Develop and implement Toxic Hot Spot Cleanup Plans;
- Revise waste discharge requirements, if necessary, to conform to the Basin Plan; and
- Develop a comprehensive database containing information pertinent to describing and managing toxic hot spots.

Long-term activities of the BPTCP include:

- (Continue to) develop numeric sediment quality objectives;
- Develop and implement strategies to prevent the formation of new Toxic Hot Spots and to reduce the severity of effects from existing Toxic Hot Spots;
- Periodic review and update of a Water Quality Control Plan for enclosed bays and estuaries; and
- Maintain the comprehensive database.

The BPTCP is a comprehensive effort to regulate toxic pollutants in enclosed bays and estuaries and is not intended to be a monitoring program resembling the State Mussel Watch Program or the Toxic Substances Monitoring Program (see Chapter 6 for descriptions of these programs). The BPTCP program does, however, use the data from the State Mussel Watch Program and the Toxic Substances Monitoring Program to identify Toxic Hot Spots.

The Santa Ana Region, State Mussel Watch data and data provided by the Orange County Environmental Management Agency have been used to identify toxic hot spots in Newport Bay and Anaheim Bay/Huntington Harbour. Tables 5-10 and 5-11 lists the known toxic hot spots and potential toxic hot spots, respectively. The Regional Board, in coordination with the State Board and the California Department of Fish and Game are currently in the process of confirming these toxic hot spots and potential toxic hot spots using a battery of toxicity tests on both the water column and sediment. Once confirmed, the list of toxic hot spots and potential toxic hot spots will be ranked according to the ranking criteria. The priority ranking will be included in the regional Toxic Hot Spot Cleanup Plan(s) which will include identification of likely contaminant sources and appropriate remedial actions.

GROUNDWATER CONTAMINATION FROM VOLATILE ORGANIC COMPOUNDS

In 1984, the legislation passed Assembly Bill 1803 which instructed the California Department of Health Services, Office of Drinking Water, to develop and implement a program to require the sampling of public drinking water supply wells for volatile organic compounds. The Department was instructed to provide the results to the appropriate Regional Board. The initial data indicated extensive organic contamination of groundwater supplies throughout the state. As a result, in 1985, the State Board and the Regional Water Quality Control Boards initiated the Well Investigation Program. The intent of the Well Investigation Program was to identify the parties responsible for the organic contamination of municipal drinking water supply wells so that those parties could be made accountable for cleanup.

In order to identify the responsible parties, the Regional Board followed an intensive investigation program for each contaminated public drinking water supply well on a priority basis. This program included:

- Field reconnaissance for potential sources
- Record searches
- Hydrogeological assessments
- Questionnaires, meetings, and inspections
- Requests for preliminary soil investigations and follow-up soil and groundwater investigations of potential sources
- Requests for cleanup
- Enforcement actions, where appropriate

In the late1980's the Well Investigation Program was expanded to include private drinking water supply wells and agricultural and industrial supply wells that were located in areas where organic contamination posed a threat to public drinking water supply wells. In the late 1980's the Well Investigation Program represented the largest single funded program in the Region. However, due to severe budget cuts statewide, the Well Investigation Program was scaled down and eventually discontinued in 1992. Investigation and cleanup of sites identified by the Well Investigation Program are currently being overseen by the Regional Board's Spills, Leaks, Investigations, and Cleanup (SLIC) program.

Currently (1993), there are more than 300 water supply wells identified in the Region which contain organic compound contaminants. The loss of many drinking water supply wells and the threat of loss of additional existing drinking water supply wells due to organic compound contamination is a serious problem in several areas of the Region, most notably the Bunker Hill, Chino, and Santa Ana Forebay Groundwater Basins.

Perchloroethylene (PCE) and trichloroethylene (TCE) are the major contaminants in the Bunker Hill I Subbasin, which underlies northern San Bernardino. The City of San Bernardino lost 25% of its water supply in the early 1980s when 14 wells operated by the City were found to contain concentrations of perchloroethylene above the state and federal drinking water Maximum Contaminant Level (MCL). The Newmark Wellfield was placed on the federal Superfund list in 1988, and EPA assumed lead responsibility for investigating the extent of the contamination and identifying long-term cleanup measures. The Regional Board has identified no specific source of the contamination; potential sources include dry cleaners, airports, and a World War II munitions facility. Interim groundwater extraction and treatment at existing municipal supply wells using air stripping and granulated activated carbon (GAC) facilities funded by the California Department of Toxic Substances Control. These facilities have the capacity to treat 37.6 million gallons per day (MGD). The treated water is used as a potable water supply to replace the water lost as a result of the solvent contamination.

Table 5-10

Known Toxic Hot Spots
Santa Ana Region

Waterbody Name	Pollutants Involved
Lower Newport Bay	Cd, Pb, As, Se, Zn, Cu
Upper Newport Bay Ecological Reserve	Pb, Cu, Cd
Anaheim Bay	Cd, Cu, Pb, Cr
Huntington Harbour	Cd, Pb, Se, Cr, Cu
Bolsa Bay	Cr, Cu, Pb

Table 5-11

Potential Toxic Hot Spots
Santa Ana Region

Waterbody Name	Pollutants Involved
Lower Newport Bay	Chlorpyrifos, Dacthal, PCB, Chlorbenside, DDT, Lindane, Ronnel, Hexachlorbenzene, Chlordane, Endosulfan, Toxaphene, Aldrin, Heptachlorepoxide, Heptachlor
Upper Newport Bay Ecological Reserve	Dacthal,DDT,PCB,Endosulfan,Chlordane, Chlorpyrifos, Diazinon, Lindane, Heptachlorepoxide, Hexchlorbenzene
Anaheim Bay	Aldrin, Chlordane, Lindane, Chlorbenside, PCB, DDT, Chlorpyrifos, Endosulfan, Heptachlorepoxide, Hexachlorbenzene
Huntington Harbour	Aldrin, Chlorbenzide, DDT, Lindane, Endosulfan, Chlordane, Chlorpyrifos, Dieldrin, Endrin, Toxaphene, Heptachlorepoxide

The Bunker Hill II Subbasin underlying Redlands has been contaminated with TCE and dibromochloropropane (DBCP). It is estimated that the TCE plume covers an area of approximately twenty square miles. Twenty-six water supply wells are impacted by TCE or DBCP, including five municipal water supply wells where the concentration of TCE or DBCP exceeds the MCL. No responsible parties have been identified yet, however, potential sources for the TCE plume include an airport, commercial and industrial facilities, and a former rocket motor testing facility. DBCP, a soil fumigant, was used extensively by the citrus industry prior to the 1960's and the DBCP contamination in the Bunker Hill II Subbasin is believed to be the result of this past legal agricultural use. A 3.0 MGD GAC facility at the Rees Well, which began operation in 1989, treats the contaminated water and provides potable water for the City of Redlands. In addition, an 8.6 MGD wellhead treatment facility at the Texas Street Well Field began operation in 1993. The facility, which was funded by the State Board and the State Department of Toxics, removes TCE and DBCP and also provides potable water back to the City of Redlands.

Forty-four water supply wells in the Chino Basin, primarily the Chino II Subbasin, contain TCE and PCE. To date, only one facility, the former GE Flatiron Plant in Ontario, has been confirmed as a source of organic compound contamination that has impacted a water supply well. In 1993, prior to exploring final cleanup options, GE will be implementing plume containment and interim cleanup activities on the almost two mile long, one-half mile wide TCE plume. Other potential sources in the Chino Basin include the California Institute for Men, the Chino Airport, and the Ontario Airport. Potential responsible parties are in the process of conducting investigative studies.

Organic contamination from TCE, PCE, dichloroethylene (DCE), and dichloroethane (DCA) has been found in water supply wells in Orange County in the Santa Ana Forebay and Irvine Forebay Groundwater Basins. A wellhead treatment unit (air stripping) was installed at the City of Orange Well No. 13 and began operation in 1993. The Regional Board staff oversees investigations at numerous sites in the Forebay area where past discharges of industrial solvents have occurred. Twenty-one of these sites have been identified to date as sources of volatile organic compounds in groundwater. Site investigations are being conducted to identify the extent of contamination and to clean up the effects of the discharges.

The Regional Board has been successful in identifying many sites throughout the region where volatile organic compounds have impacted groundwater. However, with the exception of the former GE Flatiron facility in the Chino Basin, there has been no other direct cause-and-effect relationship drawn between a contaminated drinking water supply well and a specific source. In most cases, records of compounds used at facilities have not been maintained and information regarding past disposal practices is not available, making it difficult to pinpoint specific

sources. In addition, considering that most sources of the volatile organic compounds found in water supply wells are probably industrial discharges that may have occurred as long as 30 years ago, and considering the complex factors affecting the fate of volatile organic compounds in soil and groundwater and the changes in groundwater flow patterns from pumping, etc., it is difficult to backtrack contamination from water supply wells to specific sites which may be sources of local groundwater contamination.

DEPARTMENT OF DEFENSE FACILITIES

There are six major Departments of Defense (DoD) facilities in the Santa Ana Region, two of which are currently scheduled for closure. Table 5-12 identifies these facilities and the water quality problems of each.

Significant groundwater contamination has been detected at a number of these facilities. Contamination is severe enough at three of these facilities to have them placed on EPA's National Priorities List (NPL) for remediation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly referred to as Superfund).

For these three National Priorities List facilities (Norton and March Air Force Bases and Marine Corps Air Station – El Toro), the EPA is the lead environmental regulatory agency for oversight of investigation and cleanup. CERCLA requires EPA to consider applicable or relevant and appropriate state laws and regulations when establishing cleanup. CERCLA requires EPA to consider applicable or relevant and appropriate state laws and regulations when establishing cleanup standards for remedial activities. To ensure that the state's concerns are properly addressed, two Cal/EPA agencies, the Regional Board and the Department of Toxic Substances Control (DTSC) also perform a significant oversight role in the investigations and cleanup of these facilities.

The US EPA, DoD, and the state agencies have signed Federal Facility Agreements (FFA) for each of the National Priorities List facilities. The intent of the FFA is to ensure that: (1) environmental impacts are investigated; (2) remedial actions are defined; (3) procedural framework or schedules are established; (4) cooperation among agencies is facilitated; (5) adequate assessment it performed; and (6) compromise is reached.

The US EPA is not involved in the investigation and cleanup of DoD facilities that are not on the National Priorities List (Marine Corps Air Station-Tustin, Naval Weapons Station-Seal Beach, and Armed Forces Reserve Center-Los Alamitos). However, many of these facilities have significant contamination. In these cases, the two state agencies enter info Federal Facility Site Remediation Agreements

Table 5-12

Summary of Water Quality Problems from
Department of Defense (DoD) Facilities

Santa Ana Region

DoD Facility	Receiving Water Affected	Water Quality Problem Identified to Date
Norton Air Force Base [1]	Bunker Hill I Subbasin	trichloroethylene (TCE) plume landfills; Superfund listing
March Air Force Base	Perris North Subbasin	trichloroethylene (TCE) plume; fuel plume; landfills; Superfund listing
Marine Corps Air Station - El Toro	Irvine Forebay Subbasin	trichloroethylene (TCE) plume; fuel plume; benzene plume; landfills; proposed Superfund Listing
Marine Corps Air Station - Tustin [1]	Irvine Pressure Subbasin	volatile organic compound (VOC) plume; fuel plume
Naval Weapons Station - Seal Beach	Santa Ana Pressure Subbasin	fuel plume; landfills
Armed Forces Reserve Center - Los Alamitos	Santa Ana Pressure Subbasin	fuel plume; landfills

[1] Facilities which are scheduled to be closed. These bases are given high cleanup priority.

(FFSRAs) with DoD. FFSRAs are very similar to the above-mentioned Federal Facility Agreements, with the exception that US EPA is not a party. The Regional Board and Department of Toxic Substances Control have already entered into an agreement with DoD for the Naval Weapons station – Seal Beach and are near the end of negotiations on Federal Facility Site Remediation Agreements for Marine Corps Air Station – Tustin.

The Department of Toxic Substances Control has been identified as the "lead" state agency and the Regional Board as "support" agency for all of the above facilities. A Memorandum of Understanding has been signed by the State Board and Department of Toxic Substances Control which describes the roles of each agency. The Regional Board's oversight role is with regard to the investigation and cleanup of water resources that have been impacted or are threatened by waste discharges from the facilities. The Regional Board's responsibility also extends to source areas (landfills, contaminated soil, etc.) that currently, or may in the future, pose a threat to water quality. DTSC's role is to address all other environmental aspects including health risk assessment, air emissions, community relations, etc.

The State Board and DTSC have entered into a two-year cooperative agreement with the Department of Defense for cleanup and oversight reimbursement. All work performed by the State agencies with regard tot he investigation and cleanup of environmental problems at these facilities is fully reimbursed by DoD.

LEAKING UNDERGROUND STORAGE TANKS

The Underground Storage Tank Program was enacted in 1983 and took effect January 1,1984. The authority for the program is found in the Health and Safety Code, Division 20, Chapter 6.7, and the regulations for the program are found in the California Code of Regulations, Title 23, Division 3, Chapter 16. In 1988, the State Board and the Department of Health Services (now Department of Toxic Substances Control) issued the Leaking Underground Fuel Tank (LUFT) field manual which prescribes specific methods for evaluating the effects of underground storage tank leaks.

There are approximately 2,000 known cases of leaking underground storage tanks (USTs) in the Region. Approximately 35% of the cases involve instances where only soil contamination is present, 35% are cases which have been closed. The majority of the releases from these underground storage tanks are gasoline and the constituent of most concern is benzene, a known carcinogen. A smaller percentage of the underground storage tank releases involve chlorinated industrial solvents, which are suspected carcinogens. As anticipated, the majority of the sites where these releases have occurred are automotive service stations, with tanks from industrial facilities contributing a smaller, but significant, minority. To date, these groundwater impacts have not grown to the point where drinking water supply wells have been affected. The Regional Board maintains and regularly updates the

Leaking Underground Storage Tank Information Systems (LUSTIS) database, which identifies all known underground storage tank release sites in the Region.

Implementation of the underground storage tank program includes direct Regional Board oversight of leaking underground storage tank cleanups. It also involves coordination of oversight activities with local agencies under contract with the State Board through the Local Oversight Program. Local agencies have the authority, pursuant to Section 25297.1 of the Health and Safety Code, to act on behalf of the Regional Board in requiring investigations and cleanup of underground storage tanks cases. The local agencies also implement the permitting, construction, inspections, and monitoring portion of the Underground Tank Regulations. The Orange County Health Care Agency, the County of Riverside Department of Environmental Health, and the County of San Bernardino Department of Environmental Health Services handle approximately 80% of the active cases in the Region, with several cities managing their own programs. The local agencies' caseload consists of soil cases, while the Regional Board maintains responsibility for the highly complex cases where groundwater has been affected.

As specified in State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges," the investigation and cleanup of releases from underground storage tanks involves several steps including: (1) preliminary site assessment and workplan submittal; (2) pollution characterization; (3) remediation; and (4) post-remedial action monitoring. Soil contamination cleanup levels are determined on a case-by-case basis and are established to prevent continued leaching from the affected soils at levels which may cause the underlying groundwater to exceed applicable water quality objectives. Cleanup goals for groundwater contamination cases are generally established at drinking water standards (Maximum Contaminant Levels or Action Levels).

In most areas of the Santa Ana Region, the uppermost portions of the aquifers are considered to be in hydrologic contact with deeper portions which are currently utilized for drinking water supplies. In the pressure zone of Orange County, the uppermost sediments are fine-grained materials which are unable to sustain sufficient pumping rates. However, due to the large volume of water held within these sediments, the close vertical proximity of these areas to underlying pumping locations, and the existence of pathways for movement into the deeper aquifers, the shallow waters in this area are considered as contributing to the sources of drinking water in Orange County. Leaking underground storage tank cleanups must be conducted accordingly.

Underground Storage Tank Cleanup Fund

The State Board, Division of Clean Water Programs, administers the Underground Storage Tank Cleanup Fund. The Cleanup Fund can be used as a mechanism to satisfy federal financial responsibility requirements and pay for corrective action and

third party liability costs resulting from a leaking petroleum UST. The Fund can also pay for direct cleanup (by local agency or Regional Board) of UST sites requiring emergency and prompt action on abandoned or recalcitrant sites. This fund, collected by the Board of Equalization, is supported by a 0.6 cents per gallon fee for gasoline. The Fund has been established to provide reimbursement to tank owners or operators for the costs of cleanup of the effects of unauthorized releases of petroleum. Up to one million dollars ($1,000,000) can be provided per site, with the first ten thousand dollars ($10,000) being provided by the claimant. With certain qualifications, expenditures made to remediate an unauthorized petroleum release since January 1, 1988 can be reimbursed and letters of credit can be issued for the funding of ongoing remediation activities.

The Regional Boards provide technical support to both the applicants who file claims against the UST Cleanup Fund and the State Board staff who verify the corrective action work covered by the claim. For claims that involve future work, the Regional Boards will oversee site investigation and cleanup on cases for which they are the lead agency.

ABOVEGROUND STORAGE TANKS

The state's Aboveground Petroleum Storage Act was enacted in 1989 and amended in 1991. The Act became effective on January 1, 1990 (Health and Safety Code, Chapter 6.67).

The purpose of the regulation is to protect the public and the environment from the serious threat of millions of gallons of petroleum-derived chemicals stored in thousands of aboveground storage tanks. The Regional Board inspects aboveground petroleum storage tanks, which were used to store crude oil and its fractions after January 1991, to assure compliance with a federally required site-specific Spill Prevention, Control, and Countermeasure Plan. In the event that a release occurs which threatens surface or groundwater, the Act allows the state to recover reasonable costs incurred in the oversight and regulation of cleanup.

Storage statements are required from facilities with aboveground storage tanks, describing the nature and size of their tanks. Filing fees are required which are intended to fund inspections, training, and research. Approximately 280 aboveground storage tanks are under regulation in the Santa Ana Region as of May 1, 1993. Their number is continually expanding as aboveground storage tanks are increasingly used to replace underground storage tanks. A list of aboveground storage tanks is available from the Regional Board.

DISPOSAL OF HAZARDOUS AND NONHAZARDOUS WASTE TO LAND

Hazardous and nonhazardous waste disposal can, if not properly managed and regulated, diminish the beneficial uses of the waters of the Region. These are typically losses to groundwater beneficial uses, but in some cases, surface waters

can also be affected by disposal operations or contaminated soil in the vadose zone.

The Regional Board regulates landfills receiving municipal solid wastes and surface impoundments receiving hazardous or designated liquid wastes. Although these sites are closely regulated and monitored, some water quality problems have been detected and are being addressed. There are no hazardous solid waste disposal facilities currently operating in the Region.

The laws and regulations governing the disposal of both hazardous and nonhazardous solid wastes have been revised and strengthened in the last few years. The US EPA, DTSC, the State Board, and Regional Water Quality Control Boards are implementing the federal RCRA regulations. Described below is Regional Board implementation of RCRA and the following state programs: Title 23, Division 3, Chapter 15; Toxic Pits Cleanup Act; and Solid Waste Assessment Tests.

Resource Conservation and Recovery Act

The state implements the Resource Conservation and Recovery Act (RCRA) in California through the Department of Toxic Substances Control (DTSC) and the Regional Boards. Chapter 15 monitoring requirements have been implemented through the adoption of waste discharge requirements for both hazardous and nonhazardous waste disposal sites covered by RCRA. The discharge requirements for both hazardous waste sites are part of a state RCRA permit issued by the DTSC. The Regional Board and the Integrated Waste Management Board issues state permits for nonhazardous waste disposal sites.

The Resource Conservation and Recovery Act of 1976 provided for the development of federal and state programs for the regulation of land disposal of waste materials and the recovery of materials and energy resources from the waste stream. The Act regulates not only the generation, transportation, treatment, storage, and disposal of hazardous wastes, but also nonhazardous solid waste disposal facilities. In addition, the 1976 Act called for phasing out the use of open dumps for disposal of solid wastes in favor of sanitary landfills.

The most recent and significant amendments to RCRA (1984) impose a variety of new, more stringent requirements both on hazardous and nonhazardous waste generators, transporters, and the owners/operators of treatment, storage, and disposal facilities within the existing regulated community. Significant provisions include bans on land disposal of certain wastes, restrictions and placement of liquids in landfills, and establishment of minimum technological requirements for landfills and surface impoundments.

Subtitle C of RCRA contains requirements related to the identification and listing of hazardous wastes and standards applicable to generators, transporters, owners, and owner/operators of treatment, storage, and disposal facilities. Primary

responsibility for the implementation of Subtitle C rests with the DTSC, with Regional Board participation as necessary.

Subtitle D of RCRA establishes a framework for federal, state, and local government cooperation in controlling the management of nonhazardous solid waste. The federal role in this arrangement is to establish the overall regulatory direction by providing minimum nationwide standards for protecting human health and the environment and to provide technical assistance to states for planning and developing their own environmentally sound waste management practices. The actual planning and direct implementation of solid waste programs under subtitle D. however, remain largely state and local functions, and the act authorizes states to devise programs to deal with state-specific conditions and needs. US EPA approved the state's proposed solid waste management program, and delegated authority to the state to implement the program in October 1993. In September 1993, the Santa Ana Region adopted a blanket Waste Discharge Requirement (WDR) amendment for all affected landfills in the Region which implements both Subtitle D and Chapter 15.

Subtitle D includes the Criteria for Classification of Solid Waste Disposal Facilities and Practices (40 CFR Part 257). The criteria establish minimum national performance standards necessary to ensure that "no reasonable probability of adverse effects on health or the environment" will result from solid waste disposal facilities or practices.

Part 258 of subtitle D establishes minimum national criteria for municipal solid waste landfills including those used for sludge disposal and disposal of nonhazardous waste combustion and ash. Part 258 also sets forth minimum federal criteria for municipal solid waste landfills, including location restrictions, facility design and operating criteria, groundwater monitoring requirements, financial assurance requirements, and closure and post-closure care requirements. The rule establishes differing requirements for existing and new units, (*e.g.,* existing units are not required to remove wastes in order to install liners).

Subtitle D provides that states with approved water management programs that wish to run the program will have flexibility in implementing these criteria. A municipal solid waste landfill unit that does not meet the Part 258 Criteria will be considered to be engaged in the practice of "open dumping" in violation of Section 4005 of RCRA. Municipal solid waste landfill units that receive sewage sludge and fail to satisfy those criteria will be deemed to be in violation of Sections 309 and 405(e) of the Clean Water Act.

Title 23, Division 3, Chapter 15

The most important regulation used by the Regional Board in regulating hazardous and nonhazardous waste disposal is California Code of Regulations (CCR) Title 23,

Division 3, Chapter 15 (formerly Subchapter 15). These regulations include very specific siting, construction, monitoring, and closure requirements for all existing and new waste disposal facilities. Chapter 15 also contains a provision requiring landfill operators to provide assurances of financial responsibility for initiating and completing closure, and for corrective action to address all known or reasonably foreseeable releases from their waste management units. Detailed technical criteria are provided for establishing water quality protection standards, monitoring programs, and corrective action programs for releases from waste management units. Chapter 15 defines waste types to include hazardous wastes (Class I), designated wastes (Class II), and nonhazardous solid wastes (Class III). Hazardous wastes are defined by DTSC in Title 22 of the California Code of Regulations.

Designated wastes are defined as:

1. Those non hazardous wastes consisting of or containing contaminants which under ambient landfill conditions could be released at concentrations that could cause water quality degradation, or

2. Those wastes which are hazardous according to Title 22, but are not considered hazardous by the federal RCRA definition and have been granted a variance from hazardous waste management requirements by DTSC.

Nonhazardous solid wastes are those normally associated with domestic and commercial activities. The California Integrated Waste Management Board (CIWMB) is the lead agency responsible for non-water quality-related issues relating to nonhazardous waste management in California (Division 7 of Title 14 of the CCR). CIWMB has the overall responsibility for landfill operations and ensuring that nonhazardous wastes are collected and disposed of in a manner which protects public health and safety as well as the environment. Inert wastes can be regulated by the Regional Board if necessary to protect water quality.

The Regional Board has regulated nonhazardous municipal solid waste facilities (Class III) since the mid-1970s. Many of the smaller, older facilities have closed, and waste is now typically disposed of at larger regional nonhazardous solid waste facilities. The Regional Board is responsible for the review and revision of waste discharge requirements for both active and inactive permitted sites to assure consistency with the current regulations. These responsibilities include the upgrading of groundwater monitoring systems to identify violations of water quality protection standards, and the establishment of corrective action programs where standards are violated.

A significant task faced by the Regional Board in implementing Chapter 15 at nonhazardous solid waste facilities is defining what constitutes designated wastes. Many wastes which are not hazardous still contain constituents of water quality concern that can become mobile in a nonhazardous solid waste facility, and can

produce leachates that could pose a threat to beneficial uses of the water of the state. The criteria for determining whether a nonhazardous waste is a designated waste are based on water quality objectives for waters located in the vicinity of the sites, the containment features of the solid waste facility, and the solubility/mobility of the waste constituents. To assist in the identification of designated waste criteria, the Regional Board will rely on a methodology acceptable to the Executive Officer and other relevant technical data.

Landfill Expansion

A steady increase in the rate of solid waste generation in the region is causing landfills to reach capacity sooner than expected. This situation has man it necessary not only to plan for the closure of some existing landfills, but also to anticipate the need for expansions of existing facilities and the construction of new ones. To minimize the problems associated with the rapid filling and subsequent closure of solid waste disposal facilities, the Regional Board supports efforts to reduce the volume of wastes disposed of at landfills. To reduce the potential for household hazardous wastes entering municipal landfills, the Regional Board also supports public education and household hazardous waste disposal and recycling programs.

The Regional Board conducts many other activities related to the disposal of wastes. Examples of these activities are review and approval of site design plans and construction oversight for new or expanding facilities, implementation of strict drainage and erosion control measures at landfills, soil and groundwater cleanup activities at contaminated disposal sites, and closure/post-closure plan review, approval, and closure construction oversight.

Toxics Pits Cleanup Act

The Toxics Pits Cleanup Act of 1984 (TPCA) required that all impoundments containing liquid hazardous wastes or free liquids containing hazardous waste must be either reconstructed with a liner/leachate collection system or be dried out by July 1, 1988. These facilities must also be closed by removing all contaminants or by capping to contain any residual soil contamination. In 1985, there were 11 sites in the Santa Ana Region with ponds subject to TPCA. As of 1993, 2 facilities are continuing to operate following upgrades to meet TPCA requirements, eight facilities have closed, and discharges at the remaining facility have ceased. Lead responsibility for closure of the remaining site has been assumed by the DTSC, with participation continued by the Regional Board.

Solid Waste Assessment Tests

Section 13273 was added to the Water Code in 1985, requiring all operations of both active and inactive nonhazardous landfills to complete a Solid Waste

Assessment Test (SWAT). The purpose of the SWAT is to determine whether hazardous or toxic substances above regulatory thresholds, or any other constituents which may threaten water quality, are migrating from the facility. Funding for the SWAT program is provided by the California Integrated Waste Management Board.

There were 159 sites identified in the region subject to this program. Pursuant to a list adopted by the State Board, 150 sites statewide were to be evaluated each year through the year 2001 (approximately 10 sites per year in the Santa Ana Region). These sites were according to their perceived threat to water quality. Active sites, those overlying high quality aquifers, and those already known to have adversely impacted groundwater were replaced in the highest ranks (Rank 1 through 4).

Program funding was eliminated in 1991, but was restored in 1992 for a period of three years to allow for review of reports for sites in Ranks 1 through 5 only. These reviews must be completed by 1995. Although landfill site evaluations, which seek to identify adverse impacts to both surface and groundwater quality, can be required pursuant to Chapter 15 whenever necessary, it appears that the SWAT program will be fully funded after 1995. A revised SWAT ranking list will be created prior to implementation of the program for Rank 6 and beyond.

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CHAPTER 6

MONITORING AND ASSESSMENT

INTRODUCTION

The effectiveness of a water quality control program cannot be judged without information supplied by a comprehensive monitoring and assessment program. The State Board, the Regional Boards, and other federal, state, and local agencies monitor water quality throughout the state. Coordination among the agencies is essential to identify data gaps and supplement monitoring efforts as necessary. The results of these programs show where water quality problems exist now and where problems can be expected based on quality trends over time. Monitoring activities in the Santa Ana Region were described as part of Chapter 5 (Plan Assessment) in the 1983 Basin Plan. In this Plan, the discussion has been expanded and updated. New programs have been added and obsolete programs have been deleted. Additionally, this chapter provides a brief description of the databases being used to store and analyze the data collected. This chapter also describes the periodic water quality assessments which are conducted on a statewide basis, using the monitoring data collected.

STATE MONITORING PROGRAMS

The State Board is the lead agency for statewide monitoring activities. The State Board coordinates extensively with the California Departments of Fish and Game, Water Resources, Health Services, and various federal agencies in its monitoring activities. The objectives of the State's surveillance and monitoring program are as follows:

- To measure the achievement of water quality goals and objectives specified in the Basin Plan;
- To measure the specific effects of water quality changes on established beneficial uses;
- To measure background conditions of water quality;
- To determine long-term trends in water quality;
- To locate and identify sources of water pollution that pose an acute, accumulative, and/or chronic threat to the environment;
- To provide information needed to compare receiving water quality to mass emissions of pollutants from waste discharge;

- To provide data for determining compliance with permit conditions and to support enforcement actions, if necessary;

- To measure wasteloads discharged to receiving waters and to identify their effects, and in water quality limited segments, to prepare wasteload allocations necessary to achieve water quality control;

- To provide data needed to carry on the continuing planning process;

- To measure the effects of water rights decisions on water quality and to guide the State Board in its responsibility to regulate unappropriated water for the control of quality;

- To provide a clearinghouse for the collection and dissemination of water quality data gathered by other agencies and private parties cooperating in the program; and

- To prepare reports on water quality conditions as required by federal and state regulations and other users requesting water quality data.

The monitoring program provides for collection and analysis of samples and the reporting of water quality data. It includes laboratory support and quality assurance, storage of data for rapid and systematic retrieval and preparation of reports and data summaries. Most important is the interpretation and evaluation of data leading to recommendations for action.

The State monitoring program focuses on fresh and marine surface waters. The goal of the State monitoring program is to provide an overall, continuing assessment of water quality in the state. Historically, conventional parameter such as minerals, nutrients, and dissolved oxygen were considered to be the most important parameters. More recently, toxic substances have received increasing attention in federal and state water pollution control activities. The State and Regional Boards are intensifying their efforts to investigate the presence of toxic substances in surface waters and the effects of these substances on aquatic biota.

The State program consists of a toxicity monitoring program, the Inland Surface Waters Toxicity Testing Program, and two toxic substances monitoring programs – the Toxic Substances Monitoring Program and State Mussel Watch.

Inland Surface Waters Toxicity Testing Program

The goal of this program, which was initiated in 1990, is to evaluate the extent, magnitude, nature and sources of toxicity in the waters of the State. Emphasis is on those waters where toxicity is associated with unregulated discharges such as runoff from agriculture, mining or urban areas. As part of this program, a toxicity

testing facility at the University of California, Davis was established to conduct State and Regional Board studies. The Regional Board performs the sampling of the waterbodies in the region and supplies the testing facility with the samples.

The toxicity test measures the combined effects of toxics in the water and is not used to separate and identify a specific toxic substance. Toxicity is determined by using water column examples from a waterbody under lab conditions. Appropriate test organisms are observed for their response by using growth, reproduction or mortality as indicators. Two types of toxicity tests are used, acute and chronic, which involve measuring responses in different life stages of the test organisms.

In the Santa Ana Region, Big Bear Lake and its tributaries, the Anaheim and Newport Bay Watersheds, Lake Elsinore, and some creeks have been sampled for toxicity as part of this program.

Toxic Substances Monitoring Program

The Toxic Substances Monitoring Program (TSMP) was initiated in 1976 by the State Board. The TSMP was organized to provide a uniform statewide approach to the detection and evaluation of the occurrence of toxic substances in fresh and estuarine waters of the state. The TSMP primarily targets waterbodies with known or suspected impaired water quality and is not intended to give an overall water quality assessment. Data obtained from the TSMP is used to focus the Regional Board's attention on those waterbodies impacted by toxic pollutants. Special TSMP or other studies are then conducted to investigate the source(s) of the pollutants. The State Board has contracted with the Department of Fish and Game to perform the monitoring and chemical analyses associated with this program.

The presence of toxic substances often cannot be determined by water column sampling due to the low concentrations of toxicants in the water. Also, a number of toxic substances are not water soluble, but can be found associated with sediment or organic matter. The process of bioaccumulation acts to concentrate toxicants through the aquatic food web, sometimes many hundreds of times the levels actually in water. Therefore, in the TSMP the flesh of fish and other aquatic organisms (mainly crayfish) is analyzed to indicate whether any toxic substance is present. Fish livers are analyzed for metals, including arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc; fish muscle tissue (filet) is analyzed for mercury and selenium. In addition, fish filet and crayfish tail are analyzed for 45 synthetic organic compounds, which include pesticides and PCBs (Table 6-1). When very small-sized fish are available, only whole-body analyses are conducted.

The objectives of the Toxic Substances Monitoring Program are as follows:

- To develop statewide baseline data and to demonstrate trends in the occurrence of toxic elements and organic substances in the aquatic biota;
- To assess impacts of accumulated toxicants upon the usability of State waters by man;
- To assess impacts of accumulated toxicants upon the aquatic biota; and
- Where problem concentrations of toxicants are detected, to attempt to identify sources of toxicants and to relate concentrations found in the biota to concentrations found in the water.

Based upon the priorities identified by the Regional Board and the TSMP, the number and location of the sampling stations and the constituents investigated vary each year. When the program began, streams and lakes were ranked according to various criteria established to indicate their importance to the state in terms of water quality. The priority I, or highest priority, waterbodies were included in the first phase of monitoring. The Santa Ana River was included in this list and the station at Prado Dam has been sampled annually since the program began. The monitoring was expanded to include four other stations on the Santa Ana River and two of its tributaries, Chino and Cucamonga Creeks. A number of sites in the Newport Bay Watershed have also been sampled, largely in response to findings by the State Mussel Watch Program (see below) of high levels of organics and metals in the Bay itself. The results of this TSMP sampling led to an intensive study of toxics in San Diego Creek in 1985. Several stations were added to the program to monitor Anaheim Bay and its tributaries because of similar concerns. A number of the lakes in the region, including several park lakes, have also been sampled in this program. Table 6-2 lists the TSMP sampling sites in the Santa Ana Region (1978-1991).

Reports which describe the statewide TSMP sampling program sites, the constituents investigated, and the results have been published annually since 1977. A ten-year data summary was published in 1987.

State Mussel Watch Program

The State Mussel Watch (SMW) program is the state's long term marine water quality monitoring program, initiated in 1977. The SMW program provides the state with data showing trends in coastal and estuarine water quality. The Regional Board uses the data from SMW to establish the presence or absence of toxic substances and to monitor the variation in the concentrations detected at the various locations. Using this information, the Regional Board then attempts to locate the sources of the contamination. As with the Toxic Substances Monitoring Program, the State Board contracts with the Department of Fish and Game to perform the sampling and analysis.

- The primary goal of the SMW program are as follows:
- To provide long-term monitoring of certain toxic substances levels in coastal marine waters;

- To provide an important element in comprehensive water quality monitoring strategy; and
- To identify on a year-to-year basis specific areas where concentrations of toxic materials are higher than normal.

Mussels were chosen for the State Mussel Watch program because: (1) they are common along the California coast; (2) they are immobile in nature, permitting a localized measurement of water quality; (3) they have the ability to concentrate pollutants above ambient seawater levels; and (4) they provide a time-averaged sample. Where freshwater tributaries are suspected sources of toxics, freshwater clams are used. The trace metals analyzed in mussel and clam tissues are similar to those investigated by the Toxic Substances Monitoring Program and include aluminum, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc. Synthetic organic compounds analyzed are listed in Table 6-1.

As with the Toxic Substances Monitoring Program, the number and location of SMW sites investigated varies each year, according to program needs and resource constraints. Several key areas in the Santa Ana Region are frequently sampled in this program (See Table 6-3). Anaheim Bay/Huntington Harbour area sampling locations include the Anaheim Navy Harbor, Anaheim Navy Marsh, Anaheim Bay at Edinger Street, and Anaheim Bay at Warner Avenue. In the Newport area, the most frequently sampled stations include Newport Bay Island, Newport Bay at Hwy 1 Bridge, Newport Bay at Crows Nest, Rhine Channel, and Newport Bay/Upper Rhine Channel. As with the TSMP, statewide SMW reports are published annually and a ten-year data summary for 1977-1987 is available.

REGIONAL MONITORING PROGRAMS

The regional monitoring programs are grouped with local agencies' programs because they are, for the most part, cooperative efforts. The sampling frequency, sampling stations, constituents, and other details vary from year to year, depending on needs and budgets of the Regional Board and local agencies.

The regional monitoring effort consists of the following:

1. Surface Water Monitoring
2. Groundwater Monitoring
3. Compliance Monitoring
4. Complaint Investigation
5. Intensive Surveys
6. Aerial Surveillance
7. Stormwater Monitoring

Surface Water Monitoring

With the exception of the annual sampling of the Santa Ana River at Prado Dam, the Regional Board's surface water monitoring program is not strictly formalized. The sampling frequency, locations, constituents, and other details vary from year to year depending on identified problems and needs, and on staff and funding availability. A number of other agencies conduct surface water monitoring programs in the region, including water purveyors, wastewater dischargers, and flood control agencies. The Regional Board makes every effort to coordinate its monitoring activities with these other agencies to maximize the collection and exchange of data, as well as the use of resources.

This Basin Plan specifies water quality objectives applicable to Reach 3 of the Santa Ana River for TDS, nitrogen, and other constituents which are set on the baseflow of the River (see Chapter 4). To determine compliance with these objectives, the Basin Plan requires that sampling of the River be conducted annually at Prado Dam. As directed by the Basin Plan, Board staff conducts the sampling during August, when the quantity and quality of baseflow is most consistent. Staff then reports the results to the Board. The results of this program are used to assess the effectiveness of the Board's regulatory programs and to determine whether changes, such as revisions to the TDS and nitrogen wasteload allocations, are necessary.

Groundwater Monitoring

The regional groundwater monitoring program depends upon the cooperation of local agencies to ensure that data are collected. The Region's municipal water supply districts sample their potable water wells to assure that the public health regulations are met. The sample results are also submitted to the Regional Board.

This Region relies greatly on groundwater computer models for basin planning studies. The groundwater quality data is collected by numerous agencies. The Regional Board contributes to the collection effort. All data will be collected in a computer database compiled by the Santa Ana Watershed Project Authority.

Compliance Monitoring

Under this program, data is collected and used to determine compliance with discharge requirements and receiving water standards, and to support enforcement actions and waste discharge prohibitions. The data are collected from self-monitoring reports generated by waste dischargers and from compliance monitoring reports prepared by Regional Board staff.

Self-monitoring reports submitted to the Regional Board are reviewed, and if violations are noted, appropriate action is taken, ranging from administrative

enforcement to judicial abatement, depending on the circumstances. Self-monitoring report data have also been used to develop pollutant loads and to measure general water quality conditions in the receiving water.

Table 6-1

Synthetic Organic Compounds Analyzed
in the State Mussel Watch
and Toxic Substances Monitoring Programs

Aldrin	p,p'-DDMU	delta-Lindane
Chlorbenside	o,p'-DDT	Total Lindane [2]
alpha-Chlordane	p,p'-DDT	Methoxychlor
gamma-Chlordane	Total DDT	Methyl Parathion
cis-Chlordane	Diazinon	Oxadiazon [2]
trans-Clordane	Dieldrin	PCB 1248
Oxychlordane	Endrin	PCB 1254
Total Chlordane	Endosulfan [1]	PCB 1260
cis-Nonachlor	Endosulfan [2]	Total PCB
trans-Nonachlor	Endosulfan Sulfate	Pentachlorophenol [1]
Chlorpyrifos	Total Endosulfan	Phenol [1]
Dacthal	Ethyl Parathion	Ronnel [1]
Dicofol [2]	Heptachlor	Tetrachlorophenol [1]
p,p'-DDE	Heptachlor Epoxide	Tetradifon [1]
o,p'-DDE	Hexachlorobenzene	Toxaphene
o,p'-DDD	alpha-Lindane	Tributylin [1]
p,p'-DDD	beta-Lindane	
p,p'-DDMS	gamma-Lindane	

1 These constituents are analyzed only in the State Mussel Watch Program

2 These constituents are analyzed only in the Toxic Substances Monitoring Program

Table 6-2

Toxic Substances Monitoring Program Stations
(Santa Ana Region)

Stations	Station Nos.	Map No. [1]	Year Sampled													
			78	79	80	81	82	83	84	85	86	87	88	89	90	91
Anaheim Bay Watershed																
Bolsa Chica Channel/Westminster Ave.	801.11.08	1									X	X	X			
E.G.G. Wintersburg Chnl/Beach Blvd.	801.11.90	2										X				
E.G.G. Wintersburg Chnl/Gothard St.	801.11.02	3									X		X			
Huntington Harbour/Anaheim Bay	801.11.00	4													X	
Ocean View Chnl/Beach Blvd.	801.11.03	5									X	X				
Ocean View Chnl/Brookhurst St.	801.11.91	6										X				
Ocean View Chnl/Newhope St.	801.11.92	7										X				
Westminster Chnl/Graham St.	801.11.01	8									X	X				
Newport Bay Watershed																
Newport Bay	801.11.97	9													X	
Peters Canyon Channel	801.11.96	10												X	X	X
San Diego Ck/Barranca Pkwy	801.11.09	11										X			X	X
San Diego Ck/Laguna Rd.	801.11.13	12										X				
San Diego Ck/Michelson Dr.	801.11.07	13						X	X	X	X	X	X	X	X	X
San Diego Ck/Upper Newport Bay	801.11.04	14							X	X	X					
Other																
Anza Channel	801.26.03	15												X	X	

1 See Figure 6-1 for station locations.

Table 6-2

Toxic Substances Monitoring Program
Stations
(Santa Ana Region)
(Continued)

			Year Sampled													
Stations	Station Nos.	Map No. [1]	78	79	80	81	82	83	84	85	86	87	88	89	90	91
Big Bear Lake	801.71.10	16											X	X		
Big Bear Lake/Boulder Bay	801.71.08	17							X							
Canyon Lake	802.12.01	18												X		
Carbon Canyon Park Lake	801.13.90	19										X				
Chino Creek/d/s Euclid Ave.	801.21.02	20							X	X	X		X			
Chino Creek/u/s Pine Ave.	801.21.03	21									X					
Craig Park Lake	845.61.91	22										X				
Cucamonga-Mill Ck/McCarty Rd.	801.21.04	23												X		
Delhi Channel	801.11.05	24								X						
Irvine Park Lake	801.12.01	25										X				
Lake Elsinore	802.31.00	26						X	X							
Lake Evans	801.26.01	27									X					
Lake Mathews	801.33.00	28									X					
Los Coyotes Park Lake	845.61.90	29										X				
Mason Park Lane	801.11.93	30										X				
Mile Square Park Lake #1	801.11.94	31										X				
Mile Square Park Lake #2	801.11.95	32										X				
Prado Lake	801.21.90	33												X		

1 See Figure 6-1 for station locations.

Table 6-2

Toxic Substances Monitoring Program Stations
(Santa Ana Region) (Continued)

			Year Sampled													
Stations	Station Nos.	Map No.[1]	78	79	80	81	82	83	84	85	86	87	88	89	90	91
Santa Ana River/Featherly Park	801.13.03	34								X						
Santa Ana River/Hammer Ave.	801.21.05	35											X			
Santa Ana River/Imperial Hwy	801.13.00	36								X						
Santa Ana River/Prado Dam	801.25.00	37	X	X	X	X	X	X	X	X	X		X	X	X	X
Santa Ana River/USGS Gage	801.21.09	38								X			X			
Yorba Park Lake	801.13.91	39										X				

1 See Figure 6-1 for station locations.

Table 6-3

State Mussel Watch Stations
(Santa Ana Region)

Stations	Station Nos.[1]	Year Sampled															
		77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
Anaheim Bay Watershed																	
Anaheim Navy Harbor	707							X		X	X	X		X	X	X	
Anaheim Navy Marsh	708							X			X	X		X	X	X	
Anaheim Navy Marsh 2	708.5														X	X	
Anaheim Bay Entrance	709						X										
Anaheim Fuel Docks N	710				X	X											
Anaheim Fuel Docks S	710.2									X	X			X			
Launch Ramp Docks	711						X										
Peters Landing	712						X										
Anaheim Edinger St.	713							X		X	X				X	X	
Anaheim Bay - Warner Ave.	715							X		X	X			X	X	X	
Anaheim Harbor Ln.	717										X				X	X	
G.G. Wintersburg Channel	727															X	
Newport Bay Watershed																	
Newport Pier	720										X						
Newport Entrance Channel	721						X	X		X	X			X			
Newport Bay Police Docks	722				X		X				X						
Newport Bay El Pasco Dr.	722.4										X						

1 See Figure 6-2, 6-3, and 6-4 for station locations.

Table 6-3

State Mussel Watch Stations
(Santa Ana Region) (Continued)

		Year Sampled															
Stations	Station Nos. [1]	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
Newport Bay Island	723						X		X	X	X			X	X	X	
Newport Bay Turning Basin	723.4										X			X	X	X	
Newport Hwy 1 Bridge	724						X	X		X	X			X		X	
Newport Bay Dunes Duck	724.4										X						
Newport Crows Nest	725						X	X		X	X	X	X	X	X	X	
Newport Upper Rhine	726						X	X		X	X	X	X	X			
Newport Bay Rhine Channel	726.2										X				X		
Newport Bay Rhine Channel End	726.4										X					X	
Newport Pier	731				X												
Newport W. Jetty	732			X	X												
Newport W. Jetty End	733				X												
Newport E. Jetty	734				X												
San Diego Ck./MacArthur	728.4									X	X				X	X	
San Diego Ck./Michelson	728.7															X	
Peters Cyn/Barranca	728.9															X	
Other																	
Corona Del Mar	735	X	X	X		X										X	
Santa Ana River/Prado Dam	719.1																X
Temescal Ck/Nickels Road	719.8																X

1 See Figure 6-2, 6-3, and 6-4 for station locations.

Figure 6-1
Toxic Substances Monitoring Program
Santa Ana Region Stations

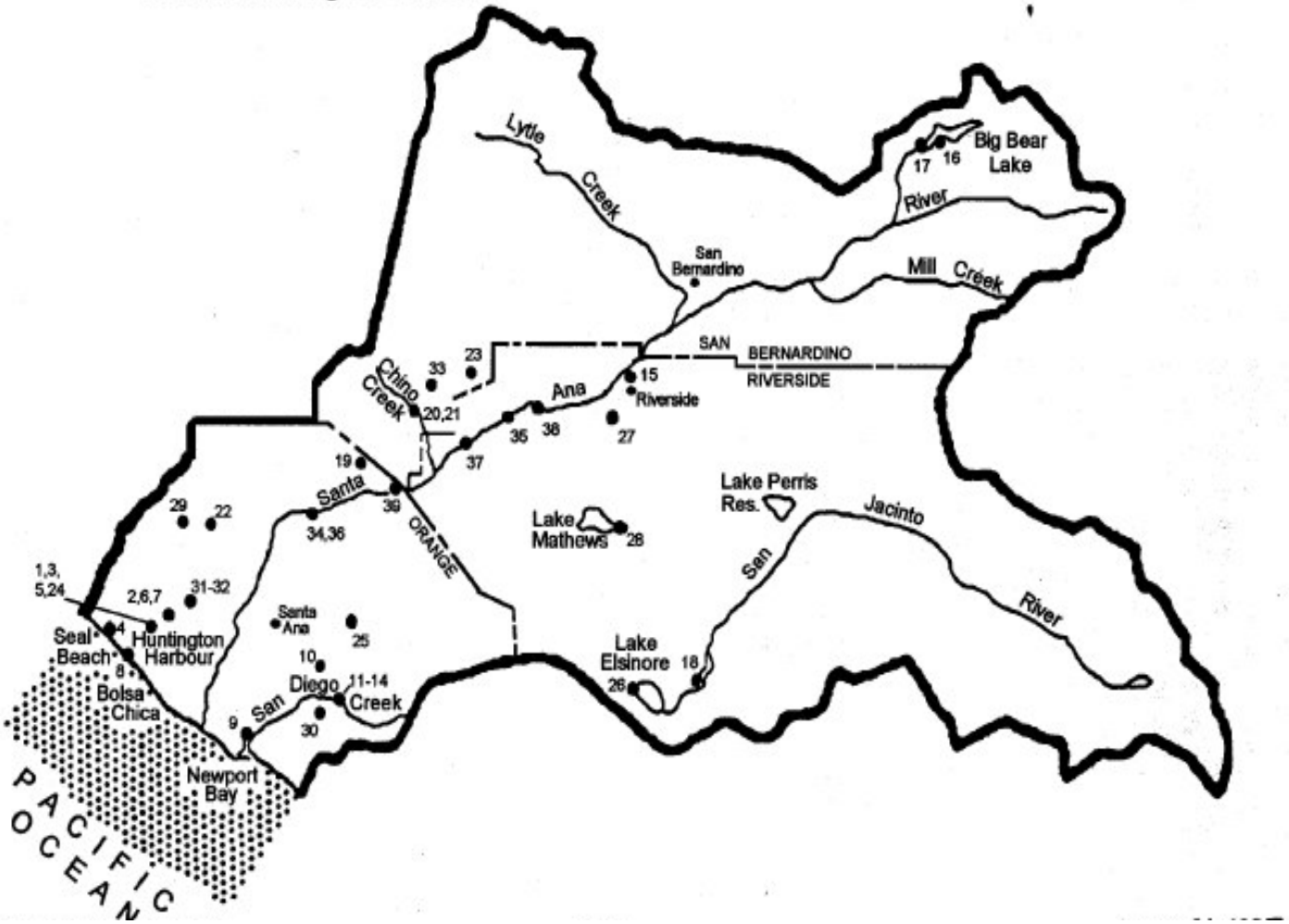


Figure 6-2
State Mussel Watch Stations
Anaheim Bay/Huntington Harbour Watershed

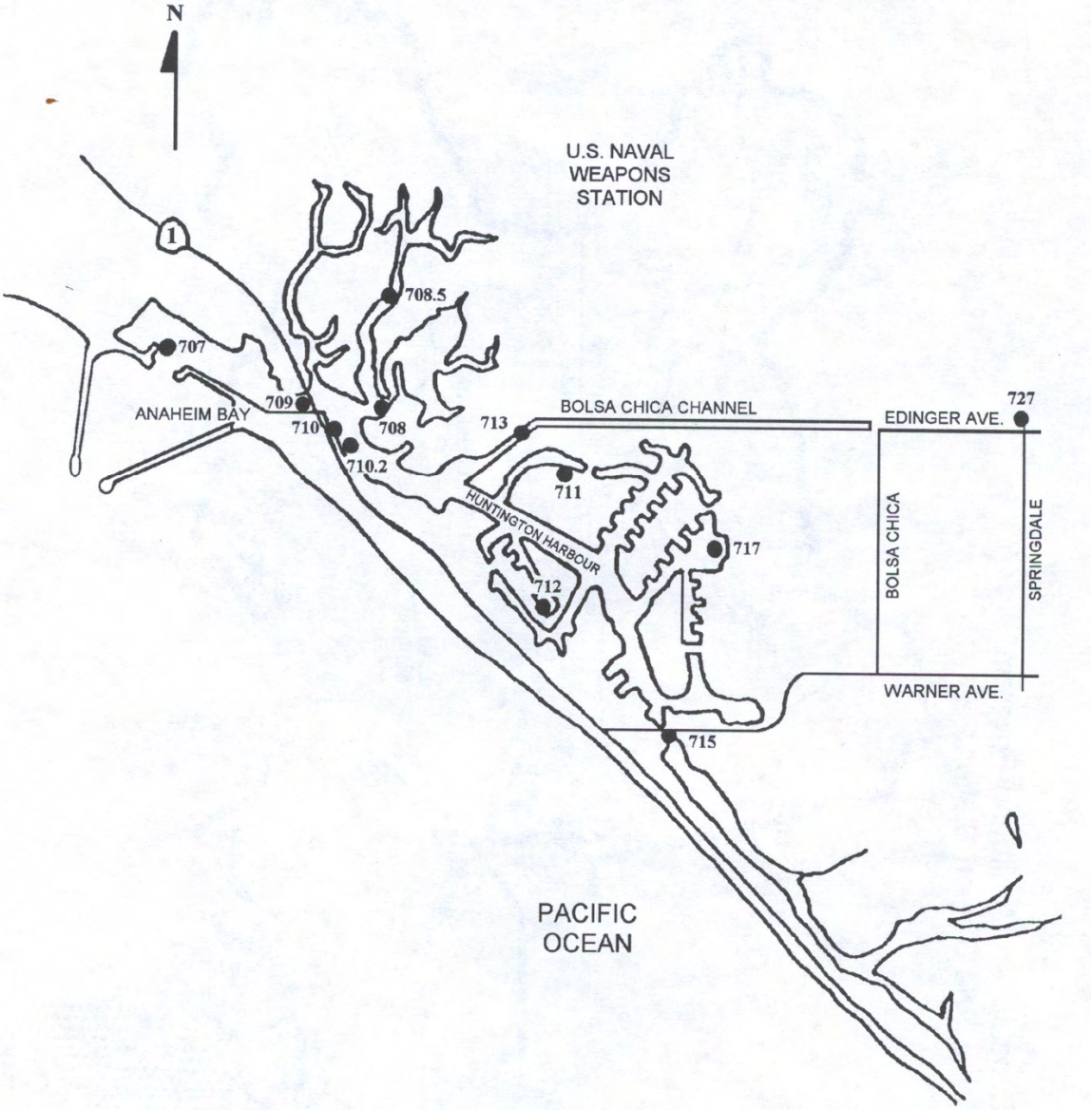


Figure 6-3
State Mussel Watch Stations
Newport Bay Watershed

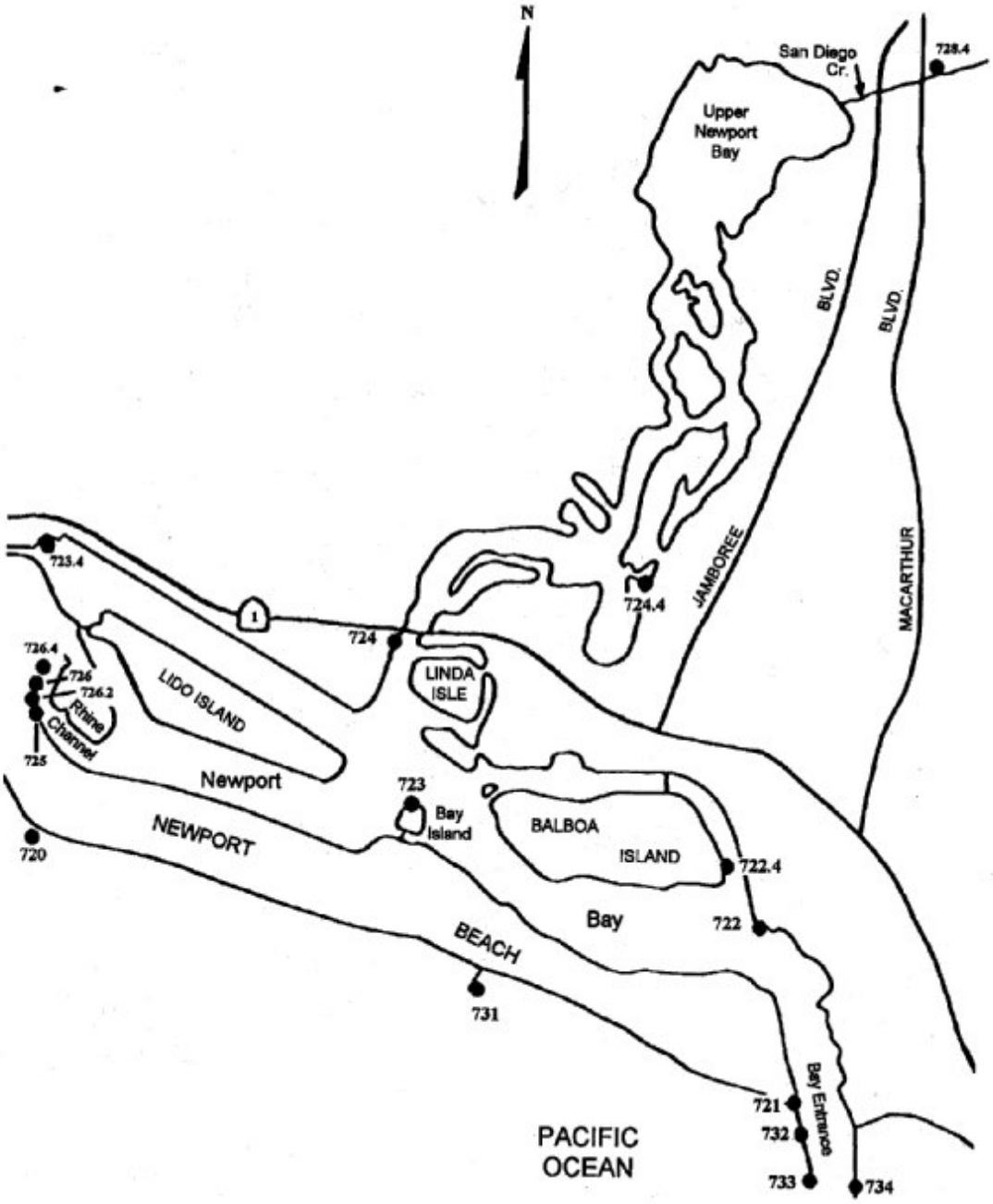
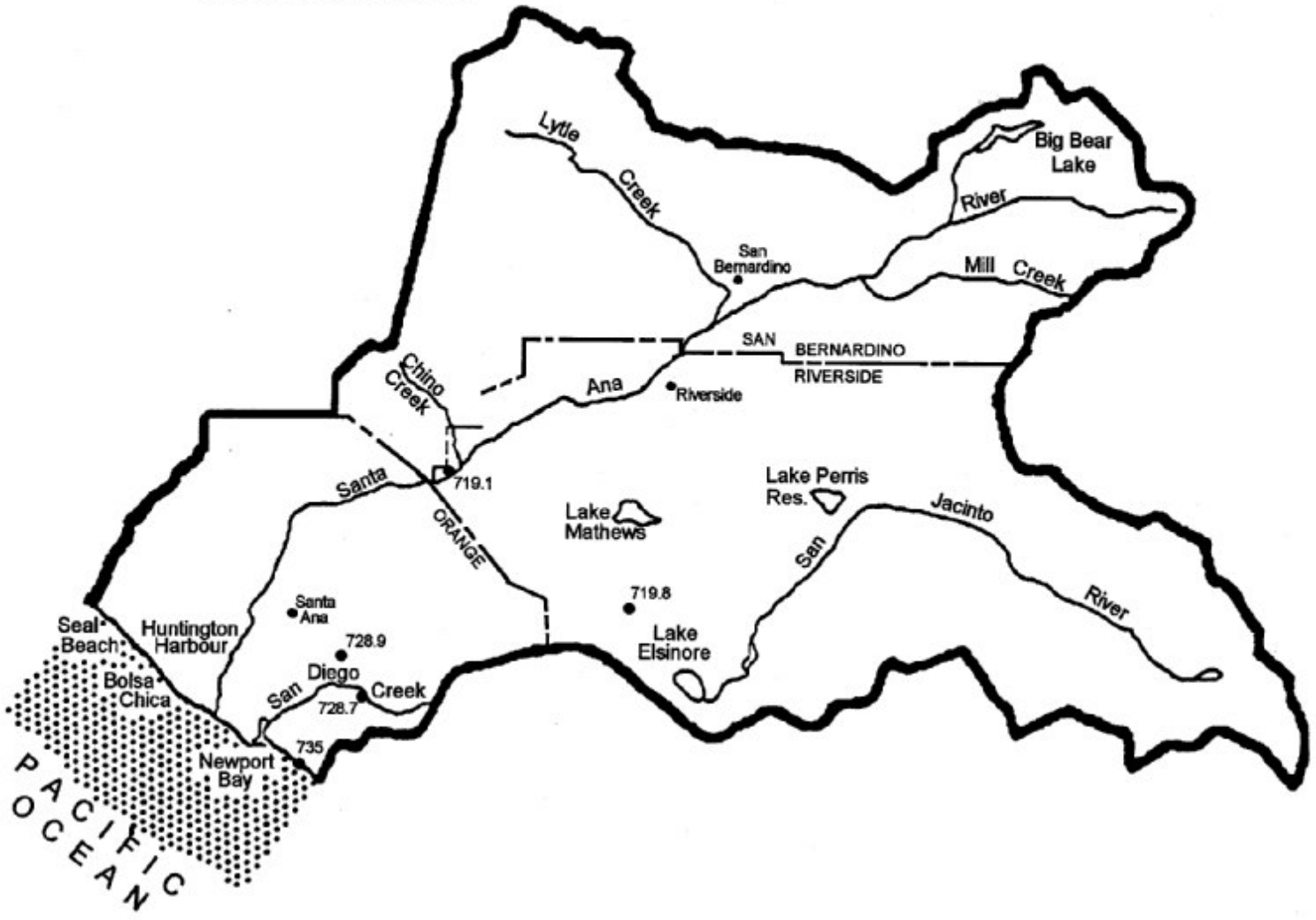


Figure 6-4
State Mussel Watch
Additional Stations



Compliance Monitoring (Continued form page 6-6)

The lowest concentration by which permit compliance is reliably measured is called the Practical Quantification Level (PQL). The PQL is used and taken into account when establishing waste discharge limits. PQLs will be developed using all available information, and will be established based upon information obtained from regional laboratories.

The Regional Board requires the initiation of a Toxicity Reduction Evaluation (TRE) if a discharge consistently exceeds its chronic toxicity effluent limit. The Regional Board, to date, has interpreted the "consistency exceeds" trigger as the failures of three successive monthly toxicity tests, each conducted on separate samples. Initiation of the TRE has also been conditioned on a determination that a sufficient level of toxicity exists to permit effective application of the analytical techniques required by a TRE. The Regional Board also encourages the development of scientifically sound toxicity test quality control and standardized interpretation criteria to improve the accuracy and reliability of chronic toxicity demonstrations.

Compliance monitoring also involves staff inspections of regulated and unregulated sites and includes observations made by staff members and/or results of analyses performed on samples collected by staff members.

Complaint Investigation

This program involves the investigation of complaints from citizens and public governmental agencies regarding the discharge of wastes or creation of nuisance conditions. It is a Regional Board responsibility which includes field studies, preparation of reports and letters, and other necessary follow-up actions to document observed conditions and to initiate appropriate corrective actions.

Intensive Surveys

Intensive monitoring surveys provide detailed water quality data to locate and evaluate violations of receiving water standards and to make wasteload allocations. They usually involved localized, intermittent sampling at higher than normal frequency. These surveys are performed in water quality-limited segments or hydrologic units which require additional sampling data to supplement the routine monitoring program results. The surveys are specially designed to evaluate water quality problems.

Beneficial use surveys are executed to aid in the review of the Basin Plan's water quality standards. This periodic review, entitled a "triennial review," is required in the

Clean Water Act. Intensive surveys have been performed on the middle Santa Ana River, Lake Elsinore, Lytle Creek, Mill Creek, San Diego Creek, Newport Bay, Huntington Harbour, and Strawberry Creek.

The Clean Lakes Program is specified in Section 314 of the Clean Water Act, and requires that all publicly owned freshwater lakes be identified and classified according to their trophic conditions. If a lake's condition is not known, a Clean Lakes Program survey may be performed to assess its water quality condition. If the trophic quality of the lake is determined not to protect its beneficial uses, the pollution sources and potential restorative measures are to be identified. The above actions may be conducted under a Clean Lake grant received from the federal government. Clean lake grant-funded studies of Lake Elsinore and Big Bear Lake are currently in progress.

Aerial Surveillance

Aerial surveillance is used primarily to gather photographic records of discharges and water quality conditions in the Region. Aerial surveillance is particularly effective because of the overall view of a facility that is obtained and because many facilities can be observed in a short period of time.

Municipal Stormwater Monitoring

The stormwater permitting program has been established to protect the water quality of the waterbodies which receive stormwater runoff. See Chapter 5 for a complete description of this program. Sampling of first-flush phenomena has indicated that stormwater discharges contain significant amounts of pollutants. Therefore, the Region's municipal stormwater permits require the permittees to develop comprehensive management and monitoring programs. Because each permit generally covers a large number of waterbodies, the required monitoring program is in two phases.

Phase I requires the discharger to sample those receiving waters where the beneficial uses are threatened or impaired due to runoff of stormwater and urban nuisance water. Under Phase II the dischargers will be required to develop stormwater management and monitoring programs for the remaining waterbodies included under the permit.

Stormwater discharges from urbanized areas consist mainly of surface runoff emanating from residential, commercial, and industrial areas. In addition, there are stormwater discharges from agricultural and other land uses. The constituents of concern in these discharges include: total and fecal coliform, enterococcus, total suspended solids, biochemical oxygen demand, chemical oxygen demand, total organic carbon, oil and grease, heavy metals, nutrients, base/neutral and acid extractibles, pesticides, herbicides, petroleum hydrocarbon products, and/or those causing extremely high or low pH.

The objectives of the stormwater monitoring programs are to: 1) define the type, magnitude, and sources of pollutants in the stormwater discharges within the permittee's jurisdiction so that appropriate pollution prevention and correction measures can be identified; 2) evaluate the effectiveness of pollution prevention and correction measures; and 3) evaluate compliance with water quality objectives established for the stormwater system or its components.

QUALITY ASSURANCE / QUALITY CONTROL

The purpose of the Quality Assurance Program is to ensure that data generated from environmental measurement studies are technically sound and legally defensible. A State Quality Assurance (QA) Program Plan was prepared under authority of the State Board in April 1990 describing how the State and Regional Boards will implement and manage the QA program. This Plan was approved by the State Board and the US EPA, Region IX, to meet requirements for federal funding.

The federal regulation requiring the State to develop and implement a QA Program is written in EPA Order 5360.1, April 3, 1993. The mandate is identified in 40 CFR 30.503 (July 1, 1987) requiring State agencies involved in environmentally-related measurement projects to develop and implement a Quality Assurance Program for programs partially or fully supported by Federal funds.

This mandate further requires that a QA Program Plan be developed that describes how a State agency will implement and manage a QA Program. It also requires that a QA Project Plan be prepared and approved prior to the start of any field or laboratory activities. A State's QA Program Plan must be approved by the federal award official before federal funds can be released. QA Project Plans are approved by a state's designated QA Officer and are available for federal review.

The State Board has appointed a QA Program Manager to direct and coordinate the overall program. Each State Board division and Regional Board has appointed a QA Officer to administer their respective QA responsibilities. The State and Regional Boards jointly administer the program but the State Board has lead responsibility for managing the overall program and reporting to EPA.

The Regional Board's QA Officer interacts with project managers on the required preparation of QA Project Plans for studies involving field and laboratory activities. The Project Plans should outline project objectives, data quality objectives in which management decisions will be based, and field and laboratory procedures that will be used to achieve the objectives. Once completed, the Plan must be reviewed and approved by an agency QA Officer or, when problems arise, by the State Board QA Program Manager before any field work can begin. Guidelines on Plan preparation have been distributed to the State and Regional Board QA Officers.

ASSESSMENT PROGRAMS

There are several statewide water quality assessments which are performed periodically. The assessments are used to evaluate the effectiveness of the Regional Boards' water quality programs to determine if making any changes are needed.

Water Quality Assessment

The Water Quality Assessment (WQA) is a catalog of the State's waterbodies and their water quality condition. The WQA identifies the water quality condition as good, intermediate, impaired or unknown. The data used to categorize waterbodies in the WQA are obtained from the various monitoring programs identified previously. All Regional Boards adopted their regional WQA at public meetings and submitted them to the State Board for inclusion in the State WQA. In addition, for impaired and high priority waters, factsheets were prepared to provide additional detail. The State Board intends the WQA to be updated on a regular basis, generally every two years.

The WQA serves many different purposes. The WQA, a public document, reports the condition of the State's waterbodies in a summary format. The lists of impaired waterbodies, included in the WQA, satisfy several Clean Water Act listing requirements. These federal lists are identified by the applicable Clean Water Act (CWA) section or Code of Federal Regulation (CFR) number. These include:

- CWA 303(d) – Water Quality Limited Segments where water quality objectives will not be met even with the Best Available Treatment/Best Control Technology (BAT/BCT)

- CFR 131.11 – Segments which may be affected by or warrant concern due to toxics

- CWA 314 – Lake Priorities

- CWA 319 – Nonpoint Source Impacted Waters

- CWA 304(l) ("Long List") – Waters designated as impaired because narrative or numeric objectives are violated or beneficial uses are impaired similar to CWA Section 303(d).

- CWA 304(s) ("Short List") – Waters not meeting water quality objectives because of toxics from point source discharges

- CWA 304(m) ("Mini List") – Waters not meeting water quality objectives because of toxics from either point or nonpoint sources.

WQA Water Quality Condition Classification

For each region, the individual waterbodies are listed. They are identified by water resource type, ***i.e.***, bays and harbors, wetlands, coastal waters, estuaries, lakes and reservoirs, groundwater, rivers and streams, and saline lakes. An entire waterbody may be classified with one water quality condition or divided by segments into more than one.

Good: waters that support and enhance the designated beneficial uses. Waterbodies classified as good may be designated a high priority if a threat to water quality is present.

Intermediate: waters that support designated beneficial uses while there is occasional degradation of water quality. Waterbodies suspected of impairment but for which there is inadequate data to conclude impairment are also given this classification.

Impaired: waters not reasonably expected to attain or maintain applicable water quality standards. Standards include both numeric and narrative water quality objectives and the beneficial uses the objectives are intended to protect.

Unknown: waters with unknown water quality where limited or no direct observations are available.

The WQA also provides the foundation for the State Board's Clean Water Strategy process. The current regional WQA and the associated factsheets are included as Appendix VII.

Clean Water Strategy

The Clean Water Strategy (CWS) is a process that the State Board implemented to assure that staff and fiscal resources are directed at the highest priority water quality issues throughout California. The primary objective of the CWS is to more effectively define and respond to priorities as revealed by the best available water quality information. A CWS goal is to link State and Regional Board programs together in directing actions on individual waterbodies.

The CWS relies on the Water Quality Assessment condition ratings to provide the technical information necessary to identify waterbodies needing protection or prevention actions, additional assessment or cleanup activities. In addition to the Water Quality Assessment, the regions determined the relative resource value of their waterbodies to recognize the relative importance of individual waters when compared to each other. The regions developed priority waterbody lists which are based upon the severity of their water quality problems or needs and relative resource values, from which the State Board assembled a statewide priority list based upon the same criteria.

There are six phases involved in implementing the Clean Water Strategy. As of this date, phases 1 and 2 have been completed. The State Board has begun a pilot study to determine the feasibility of phases 3 through 6.

Phase 1: Obtain the best information
2: Compare and prioritize waterbody concerns
3: Prioritize actions to address concerns
4: Allocate new resources
5: Implement strategy goals
6: Review results

305(b) Report

The 305(b) Report, also known as the National Water Quality Inventory Report, is a summary of all states' water quality reports compiled by the Environmental protection Agency. The report is prepared biennially from information that states are required to submit pursuant to Section 305(b)(1) of the Clean Water Act.

The State Board prepares the State report using information taken from the WQA. The State 305(b) Report includes: (a) a description of the water quality of major navigable waters in the State during the preceding years; (b) and analysis of the extent to which significant navigable waters provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water; (c) an analysis of the extent to which elimination of the discharge of pollutants is being employed or will be needed; and (d) estimates of the environmental impact, the economic and social costs necessary to achieve the "no discharge" objective of the Clean Water Act, the economic and social benefits of such achievement, and the dates of such achievement. The report also recommends programs which must be implemented to achieve the CWA goals.

DATA MANAGEMENT

Regional Modeling Efforts

SAGIS/ADSS: The Santa Ana Watershed Project Authority Planning Department has devised a modeling program and system called the Advanced Decision Support System (ADSS) to aid in the development of long-range plans to meet water quality and quantity objectives (ARC/INFO is the trademark of the Environmental Systems Research Institute's copyrighted program. Although this product is mentioned in the Basin Plan, the Santa Ana Regional Board is not endorsing any commercial products). The ADSS creates a central data storage facility standardizing data collection, storage, and retrieval. The core of the ADSS is the Santa Ana

Geographic Information Systems (SAGIS). SAGIS is an ARC/INFO[1]-based water resource analysis and graphic tool written in ARC Marco Language. SAGIS includes a library of various geographic overlays to create custom base maps for water resource data. The system also allows the user to view data stored in tabular form and plot the results versus time. SAGIS will produce a variety of water quality and quantity analysis maps and plots. SAGIS includes a comprehensive landuse database of the Santa Ana River Basin to project future water needs.

Regional Databases

STORET: STORET, which stands for STOrage and RETrieval, is a national database system that contains environmental monitoring data relating to the water quality within this Regional Board's boundaries and throughout the United States. These data are the result of field and laboratory analyses performed on samples gathered from streams, lakes, estuaries, groundwater, and other waterbodies. The STORET system resides on an IBM 3090 mainframe computer maintained by the US EPA at the National Computer Center in North Carolina.

The original database has evolved into a more comprehensive system capable of performing a broad range of analyses, as well as serving as the depository for data. In California, stations are sampled, in part, by the following agencies: California Department of Water Resources, U.S. Geographical Survey, California Department of Health Services, and the Regional Boards. The Regional Boards, as well as the State Board, EPA, and other regulatory agencies utilize the STORET database to examine the causes and effects of water pollution, to measure compliance with water quality objectives and maintenance of beneficial uses, and to determine water quality trends.

SABRINA: Another part of the ADSS is the Santa Ana Relational Database Management System, or SABRINA. Developed by SAWPA, SABRINA is a menu-driven application written in a database language and stores the data used by SAGIS.

[1] ARC/INFO is the trademark of the Environmental Systems Research Institute's copyrighted program. Although this product is mentioned in the Basin Plan, the Santa Ana Regional Board is not endorsing any commercial products.

REFERENCES

California Regional Water Quality Control Board – Santa Ana Region, “Newport Bay Clean Water Strategy – A Report and Recommendations for Future Actions,” September, 1989.

California State Water Resources Control Board, “California State Mussel Watch, Ten Year Data Summary 1977-1987, WQMR No. 87-3,” May, 1988.

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California Sate Water Resources Control Board, “Toxic Substances Monitoring Program, 1988-89, 91-1WQ,” June, 1991.

California State Water Resources Control Board, “Toxic Substances Monitoring Program, Ten year Summary Report 1978-1987, 90-1WQ,” August, 1990.

California Regional Water Quality Control Board, Santa Ana Region, “Newport Bay Clean Water Strategy, A Report and Recommendations for Future Action,” September, 1989.

United Sates Environmental Protection Agency, “STORET Documentation for Menu-Driven User Interface,” February, 1992.

CHAPTER 7

WATER RESOURCES AND WATER QUALITY MANAGEMENT

INTRODUCTION

Numerous water resource management studies and projects, focused on water quality and/or water supply, are in progress in the Region under the auspices of a variety of parties. Some of these activities bear directly on the implementation of this Plan and were briefly described earlier (Chapter 5). Others may lead to future Basin Plan amendments to incorporate appropriate changes, such as revised regulatory strategies for POTWs or other dischargers. Excellent examples of these programs are the extensive, multi-agency effort in the Chino Basin to evaluate water resource management alternatives and the implementation of groundwater desalters by the Santa Ana Watershed Project Authority (SAWPA) to address the severe TDS and nitrate quality problems in that Basin. Such investigations, and the implementation of appropriate physical solutions, are an essential and integral part of the effort to restore and maintain water quality in the Region.

Funding for these investigations and projects comes from a variety of sources. Local and regional agencies contribute substantial funds and staff resources. State and federal funds, in the form of loans or grants administered principally by the State Water Resources Control Board or the US EPA, are an important source of support. Volunteer efforts by citizens' groups and private landowners also contribute significantly.

The purpose of this chapter, which is new to the Basin Plan, is strictly informational – the intent is to provide an overview of some of these studies, the agencies conducting them and funding mechanisms. This discussion is necessarily brief and incomplete but should convey a sense of the scope and significance of the participation of others in water resources management in the Region.

SANTA ANA WATERSHED PROJECT AUTHORITY

The activities of the Santa Ana Watershed Project Authority (SAWPA) have been and remain exceptionally important to the management and protection of water resources in the Region. For this reason, SAWPA warrants special discussion.

As noted in Chapter 1, SAWPA is a joint powers agency which conducts water-related investigations and planning studies, and builds physical facilities where needed for water supply, wastewater treatment or water quality remediation. SAWPA is comprised of the five major water supply and/or wastewater management agencies in the Region: Chino Basin Municipal Water District (CBMWD); Eastern Municipal Water District (EMWD); Orange County Water

District (OCWD); San Bernardino Valley Municipal Water District (SBVMWD); and Western Municipal Water District (WMWD).

Since the early 1970's, SAWPA has played a key role in the development and update of the Basin Plan for the Santa Ana Region. SAWPA continues to sponsor, participate in, and/or oversee numerous water quality planning studies. Ongoing studies include the Chino Basin Water Resources Management Study, the Colton-Riverside Conjunctive Use Project, an investigation of water quality in Lake Elsinore, and studies of nitrogen and organic carbon in the Prado Basin. These studies are briefly described later in this chapter.

SAWPA also plays a crucial role in the implementation of the Basin Plan through the construction of physical facilities. SAWPA built and now operates the Arlington Desalter and is in the process of implementing two such facilities in the Chino Basin. As described in Chapter 5, these desalters are key parts of this Plan's strategy to address salt problems in the upper Santa Ana Basin. Additional desalters for the Riverside/Colton and Temescal areas are being considered.

SAWPA is responsible for the construction of the West Riverside County Regional Wastewater Treatment Facility and, with the cities of San Bernardino and Colton, for the Rapid Infiltration and Extraction treatment facility, which will provide wastewater treatment equivalent to tertiary for those cities. SAWPA built and is now planning expansion of the Santa Ana Regional Interceptor, or SARI line, which transports highly saline wastes out of the Basin (see also Chapter 5). SAWPA constructed and operates treatment facilities for contaminated groundwater at the Stringfellow site. SAWPA has also played a key role in the implementation of the Lake Elsinore Stabilization Project.

As noted in Chapter 6, SAWPA has undertaken to act as a clearinghouse for region-wide data on water quality, landuse, population, etc., by implementing database and geographical information systems including SABRINA, SAGIS (Santa Ana Geographic Information System) and the Advanced Decision Support System.

NATIONAL WATER RESEARCH INSTITUTE

The National Water Research Institute (NWRI) was founded through funding provided by the Joan Irvine Smith and Athalie R. Clarke Foundation, the County Sanitation Districts of Orange County, the Irvine Ranch Water District, the Municipal Water District of Orange County, Orange County Water District, and the San Juan Basin Authority. The Institute was created to identify and support independent research projects throughout the United States which will lead to improved water quality and water supplies.

The Institute's research priorities include water quality improvement and recycling, watershed management, health risk assessment, membrane research,

and the development of public policy. The Institute uses a number of strategies to fulfill these objectives, including:

- working with local, state, and national water resource organizations to identify research needs;
- encountering broad-based participation in joint venture partnership which support water research;
- providing opportunities for members of the national water research community to meet and exchange ideas;
- developing technical and institutional strategies which ensure that research results are implemented in a timely, cost-effective manner;
- educating the general public about the need for water conservation and research; and
- serving as a catalyst to encourage development of centers of excellence in water research.

The Institute is independently governed by a Board of Directors consisting of one member from each of the contributing agencies. The NWRI and its partners establish joint ventures to sponsor research projects. NWRI has funded numerous projects which benefit the region including research on water quality and wildlife enhancement in the Prado Wetlands, television documentaries focusing on water resources issues on the lower Santa Ana River, investigation of several wastewater treatment technologies, and the treatment of contaminants in groundwater.

INLAND SURFACE WATERS

Big Bear Watershed

Big Bear Lake is located in the San Bernardino Mountains in central San Bernardino County. The close proximity of the Lake and mountains to the urban communities within Los Angeles, San Diego, Riverside, and San Bernardino Counties has made it a heavily utilized recreational attraction. During winter, the mountains surrounding Big Bear Lake are visited by hundreds of thousands of skiers and sightseers, while the summer months bring thousands of tourists to enjoy the pleasures of the Lake and the beautiful forested landscape. The Lake is also an important wildlife resource, providing habitat for a wide variety of plants and animals, including rare and endangered species.

A cooperative effort to ensure proper management and protection of this resource is in progress. A number of agencies, private organizations, and

individuals have joined in the development of the Big Bear Valley Coordinated Resource Management Plan (CRMP). A geographic information system will be developed to integrate information on plant and animal habitats, tributaries, and other relevant data. The intent is to use this system as a guide in making land use decisions.

The participants include:

- East Valley Resource Conservation District
- City of Big Bear Lake
- Big Bear Municipal Water District
- County of San Bernardino Planning Department
- Santa Ana Regional Water Quality Control Board
- California Department of Forestry
- California Department of Fish and Game
- California Department of Health Services
- Natural Heritage Foundation
- Big Bear Area Regional Wastewater Agency
- Big Bear City Community Services District
- Bear Mountain Ski Area
- Snow Summit Ski Area
- U.S. Fish and Wildlife Services
- U.S. Army Corps of Engineers
- U.S. Soil Conservation Service
- USDA Forest Service

Lake Elsinore

Lake Elsinore is a heavily used recreational waterbody located in the San Jacinto Watershed in southwest Riverside County. As noted in Chapter 1, the lake periodically goes dry, resulting in fish kills and adverse impacts on recreational opportunities. Projects to stabilize the level of the Lake are now being completed or considered. Among these is consideration of the use of reclaimed water to maintain water levels.

SAWPA is overseeing a study of the Lake, funded by a Clean Water Act Section 314 Clean Lakes Program grant. The objectives of the study, which is to be completed by December 1993, are to:

- determine Lake Elsinore's current water quality and its effect on its beneficial uses;

- analyze the potential effects of reclaimed water upon the Lake; and

- prepare a water quality management plan.

The study is a one-year program consisting of water quality sampling and analysis. The Lake's water quality will be compared to the water quality of reclaimed water distributed by Eastern Municipal Water District. A water quality management plan will be prepared and should specify: (1) ways to maximize the Lake's water quality; (2) the feasibility of the proposed improvements; (3) a technical plan; and (4) a schedule with implementation milestones.

Santa Ana River Mainstream Project

Because of rapid growth and development in Orange, Riverside, and San Bernardino Counties, the current flood control system is inadequate to manage the runoff in these areas. The three counties are working collaboratively with the U.S. Army Corps of Engineers (Corps) to design and construct the Santa Ana River Mainstream project (Mainstream Project). The Mainstream Project will provide increased flood protection to communities within those counties, and will include specific environmental restoration projects.

The Mainstream Project will cover 75 miles from the Santa Ana River headwaters to its mouth. The project will provide the upper and lower Santa Ana River Basin various levels of flood protection ranging from a 100-year to 190-year flood flows.

The Corps will construct structural improvements including Seven Oaks Dam, Mill Creek Levee, San Timoteo Creek, Prado Dam, Oak Street Drain in Corona, 23 miles of the lower Santa Ana River, and Santiago Creek. Prado Dam and the spillway will be raised an additional thirty feet in height. Ninety-two acres of currently degraded marshland located within the Santa Ana River Salt Marsh will be restored increasing the marsh's value as a wetland habitat. In addition, a large portion of Santa Ana Canyon will be purchased and a resource, habitat, and floodplain management plan will be developed to ensure that that part of the Canyon will not undergo any landuse changes.

Santa Ana River Total Inorganic Nitrogen/Total Organic Carbon

Modeling work done for the update of the total dissolved solids and nitrogen management plans for the upper Santa Ana Basin (see Chapter 5) demonstrated the presence of a "nitrogen sink" in the Prado Basin. This sink effectively removes a major portion of the nitrate present in the Santa Ana River. In order to optimize this phenomenon, Orange County Water District and SAWPA have undertaken a study to evaluate the natural biochemical processes impacting total inorganic nitrogen (TIN) and total organic carbon (TOC) concentrations in the water as it flows through constructed wetlands. Based on the study's findings and conclusions, ways to enhance the natural processes to maximize total inorganic nitrogen removal will be recommended.

Multipurpose Corridor

Eastern Municipal Water District is leading the conceptual development of a natural multipurpose corridor to be located within the San Jacinto River and Salt Creek riparian corridors. The multipurpose corridor would connect adjacent communities, as well as agricultural regions, wildlife habitats, and rural areas. A planning task force has endorsed the idea of establishing such a passageway. The task force is hoping the corridor will lead to other benefits such as the development of:

- A water resource management plan, including groundwater basin recharge and emergency storage, general water quality improvement, storm flow storage, and erosion and flood control;

- coordinated landuse planning, including parks, water conservation measures, recreational areas, buffer zones, shared utility easements, and cost-effective resource management; and

- enhancement of the local environment for both wildlife and people.

Water Harvesting Demonstration Project

The development of demonstration water harvesting facilities within the San Jacinto watershed has been proposed by Eastern Municipal Water District (EMWD). The objective would be to capture surface water flows, consisting of rainfall runoff and stormwater discharges, which would normally flow unimpeded in the river. EMWD is considering this project because rapid urban development has decreased the amount of surface area available for percolation of rainfall and other runoff into the aquifers.

The District is interested in implementing the water capture plan to supplement their reclaimed water supplies. EMWD could use the harvested runoff directly for irrigation or site percolation ponds in locations where the groundwater basin would be recharged for domestic beneficial uses. Initiation of the program will entail a review of the physical and chemical properties of the runoff, hydrology, operational and maintenance controls of the reuse facilities, economics, compliance with the Basin Plan's water quality objectives, and permitting issues.

Several project locations were identified during a feasibility study and include existing storm drains, conveyance pipelines, and recharge facilities. Facilities currently under consideration are the Buena Vista and San Jacinto Retention Basins and the San Jacinto Reservoir. Conceptual projects include the Salt Creek and San Jacinto Northwest Improvement Plan, and the Lake Hemet Municipal Water District Cooperative Program.

Multipurpose Wetlands

EMWD and the U.S. Bureau of Reclamation are cooperating in a Multipurpose Wetlands Research and Demonstration Study. The objective is to evaluate the effectiveness and feasibility of integrating constructed wetlands with conventional wastewater treatment facilities.

The agencies have constructed a wetlands research facility located on four acres of Hemet/San Jacinto Regional Water Reclamation Facility. It is being used to determine future design and operating criteria for demonstration wetlands at the Reclamation Facility and to refine the design and operating criteria for future EMWD wetlands projects.

EMWD is interested in the use of desalters to reclaim brackish groundwater for water supply or groundwater recharge purposes. A pilot study at the Wetlands Research Facility is being conducted to evaluate the feasibility of using the reject stream from the desalters in vegetated saline marshes. If they prove feasible, these marshes would provide wildlife habitat as well as additional use of brackish water.

A 20-to-30-acre demonstration project at the Reclamation Facility is expected to begin in the fall of 1993. It will include an integrated system of 5 separate wetlands treatment units, a combined open water and marsh habitat area, and a combined final polishing wetland. One of the objectives of this project is to evaluate the ability of a constructed wetland system to provide treatment of secondary wastewater which is equivalent to that of conventional tertiary treatment facilities, and to remove nitrogen and low levels of metals and organic compounds.

A 20-acre demonstration project at the San Jacinto Wildlife Area is also planned. The intent is to provide additional treatment of wastewater, while maximizing brooding habitat for a variety of birds.

GROUNDWATERS

Chino Basin Water Resources Management Study

The purpose of this study is to develop a comprehensive plan for water resources management in the Chino Basin. The objectives are to coordinate the management of imported and local water supplies, including wastewater, and to develop plans and projects which will maximize the use of these resources, assure reliable, good quality supplies, and protect or improve local water quality.

This study is being conducted by a consortium of agencies, including the Chino Basin Municipal Water District, SAWPA, the Metropolitan Water District of Southern California (MWD), the Chino Basin Watermaster (which represents municipal and agricultural water users in the Basin), and the Regional Board.

A significant feature of this study is the development of a new integrated ground and surface water model for the Chino Basin. The model is calibrated for both TDS and nitrogen. This model is much more detailed and refined than the Basin Planning Procedure (BPP) (see Chapter 5) and will supplant the use of the BPP in this area. The new model will be used to evaluate the water quality (and quantity) effects of alternative water resource management plans. These analyses will then be used to select a recommended plan.

The Chino Basin water resources management plan is expected to include the following: management of rising groundwater contributions to the Santa Ana River; use and protection of groundwater supplies; the expansion of wastewater reclamation; optimization of capture of local runoff for recharge purposes; and reduction of water demand through water conservation.

MWD has proposed a groundwater storage program in the Chino Basin, whereby State Water Project water would be recharged in the Basin for use during emergency, drought, and other conditions when the Project water is not available. As proposed, the recharge would occur directly, via spreading or injection of State Project Water, and indirectly, through exchange of Chino Basin groundwater for surface water delivered to local water supply agencies. The Chino Basin study will evaluate opportunities to increase seasonal storage and optimize local and imported water use.

In part because of the involvement and varied interests of so many parties, the development and implementation of the water resources management plan is likely to be very complex. The Regional Board's requirements must also be satisfied. Further, Chino Basin is adjudicated and the requirements of the adjudication must be met or modified, if all the parties agree to the management plan.

The results and recommendations of this study may lead to changes in the Basin Plan. Such changes would be accomplished through appropriate Basin Plan amendments.

Colton-Riverside Basins Water Resources Management Plan

Under the auspices of SAWPA, a project task force has been formed to develop a water resources conjunctive use plan for the Colton and Riverside groundwater subbasins. The task force members are:

- Western Municipal Water District
- San Bernardino Valley Municipal Water District
- Orange County Water District
- Eastern Municipal Water District
- Elsinore Valley Municipal Water District

- San Bernardino Valley Water Conservation District
- Yucaipa Valley Water District
- Jurupa Community Services District
- City of Riverside
- City of San Bernardino
- City of Colton
- City of Rialto
- SAWPA

Many other parties have interest in the development and implementation of the management plan, including the Regional Board, which is participating in the study in an advisory role.

The purpose of the plan is to integrate the management of imported water, wastewater, and stormwater in the two subbasins. The overall objective is to maximize the use of local water resources with equitable sharing of the costs among all parties, including water purveyors, regional water management agencies, and wastewater dischargers. The term “conjunctive use” refers to this coordinated management of water supply sources that the yield from these sources is greater than the sum of the yields resulting from independent management of the sources.

Some of the goals identified are to: restore the quality of the Colton and Riverside subbasins; ensure a reliable potable water supply; reduce dependence on imported water; maximize both the use of local groundwater and reuse of wastewater; minimize the cost of wastewater treatment; and redistribute base flow in the Santa Ana River to allow more capture of the flows by Orange County Water District.

Four projects, designated A, B, C, and D, have been identifies to accomplish these goals. Project A involves the improvement of wastewater quality discharged to the Santa Ana River through improvements at the Colton, Rialto, and San Bernardino wastewater treatment plants, and the construction of a pipeline to relocate the wastewater discharge points downstream of the Colton subbasin. Project B involves the production of high-TDS groundwater from the Riverside subbasin with the goal of creating capacity for recharge with higher quality water (such as stormwater, State Project water, and Bunker Hill subbasin groundwater) and seasonal storage of wastewater. Project C would improve groundwater quality in the Colton subbasin by pumping and export of groundwater and recharge with higher quality local runoff, State Project water, Bunker Hill groundwater, and San Bernardino wastewater. Recharge would be accomplished via run-of-river “T” levees. Project D is a Riverside subbasin restoration and water supply project. Groundwater would be extracted and high quality stormwaters, imported water, Bunker Hill groundwater, and reclaimed wastewater would be percolated in a system of “T” levees in the Santa Ana River. The mix of waters recharged would be controlled to produce a water

supply quality that is consistent with both drinking water standards and wastewater discharge limitations.

These projects will be considered and implemented in phases. Wastewater treatment plant improvements (Project A) are already in progress. As in the Chino Basin (see preceding discussion), the involvement and interests of the many parties is likely to make implementation complex. Water resources in this area are also adjudicated and, again, the requirements of the adjudication must be satisfied. The Regional Board's concerns and requirements must also be addressed.

The result of the Conjunctive Use study may lead to changes in this Basin Plan. For example, a revised regulatory strategy for wastewater discharges by San Bernardino, Colton, and Rialto may be found appropriate. Implementation of the identified projects may supplant the need for the Riverside-Colton desalter, which is included in the Recommended Plan (Alternative 5C). If appropriate, amendments to the Basin Plan can be made to incorporate such changes.

Bunker Hill Basin Replenishment

The Bunker Hill Basin is artificially recharged by several agencies. Surface stream diversions are made for groundwater replenishment by the Lytle Creek Water Association on Lytle Creek and by the San Bernardino Valley Water Conservation District on Santa Ana River and Mill Creek. The San Bernardino County Flood Control District has facilities on Devil Creek, Twin Creek, Waterman Creek, and Sand Creek which may be used for groundwater recharge. The surface diversion of the waters of Lytle Creek have occurred as early as 1872. Lytle Creek water rights, which include diversions for groundwater recharge, are now administered by the Lytle Creek Water Association for six parties, according to a 1924 judgement. The San Bernardino Valley Water Conservation District began recharging the Bunker Hill Basin with Santa Ana River water (through its predecessor) in 1911 while groundwater recharge on Mill Creek began in the 1890s and was taken over by the Conservation District in 1934. In excess of 1,000,000 acre feet of Santa Ana River and Mill Creek waters have been recharged to replenish the Bunker Hill Basin. In addition, the San Bernardino Valley Municipal Water District has imported State Project water for replenishment into the Bunker Hill Basin. Since 1972, in excess of 150,000 acre feet of imported State Project Water has been recharged in the Bunker Hill Basin. The replenishment activities of the above four agencies play an extremely important role in managing the Bunker Hill Basin to supply the current and future needs of the Basin.

Hemet and San Jacinto Groundwater Basin Management Program

The Hemet/San Jacinto Groundwater Association and Eastern Municipal Water District are in the process of developing a Groundwater Management Plan for the Hemet and San Jacinto basins. The Objective of the Management Plan is to

optimize use and management of the groundwater resources in the Hemet and San Jacinto groundwater subbasins through the cooperative efforts of an association of the major basin pumpers. Eastern Municipal Water District is cooperating with the Metropolitan water District of Southern California (MWD), the U.S. Geological Survey, UC Riverside and UC Los Angeles to collect water quality and quantity data, landuse information, and data on basin hydrogeology, and to develop appropriate planning tools. A Management Plan will be developed and will include plans or programs designed to maximize the groundwater resources and ensure future water supplies.

To protect the other subbasins in the San Jacinto watershed, including Perris, Menifee, Lakeview, Winchester, and San Jacinto Lower Pressure, Eastern Municipal Water District has initiated an Assembly Bill (AB) 3030 Groundwater Management Plan. AB 3030 was adopted by the California Legislature in 1992. AB 3030 amends Section 10750 ***et seq.*** of the Water Code to allow a local agency whose service area includes a groundwater basin that is not already subject to groundwater management pursuant to law or court order to adopt and implement a groundwater management plan. The program could include plans to mitigate overdraft conditions, control brackish water, and monitor and replenish groundwater.

Hemet Groundwater Investigations

Eastern Municipal Water District and the U.S. Geological Survey (USGS) are currently involved in a four-year investigation of the dynamics of nitrate and TDS movement in the unsaturated zone of the Hemet groundwater subbasin. The Study objectives are to define the thickness and extent of water-bearing materials and to determine the direction of groundwater flow, the chemical quality of groundwater, the flux of nitrate in the unsaturated zone, and the degree of mixing and vertical distribution of nitrate in the saturated zone. The USGS has completed a draft study and is scheduled to provide a final report by the end of 1993.

Eastern Municipal Water District and MWD are also contracting with UC Los Angeles to develop and Optimal Data Collection Design Strategy as a basin management planning tool for the Hemet Basin. Eastern Municipal Water District and MWD contracted with UC Riverside to perform geophysical investigations in order to delineate the bedrock of the Hemet Basin and to obtain information on the available water supply of the Basin.

San Jacinto River Groundwater Recharge Program

A groundwater recharge/storage program within the San Jacinto Basin has been developed by EMWD. A demonstration project was begun in October 1990 with cooperation from MWD and the Universities of California, Riverside, and Los Angeles. The objectives of the demonstration project were to evaluate the

infiltration rate, establish the impacts on basin hydrology and groundwater quality, and approximate the distribution of the recharged water.

The demonstration project used ponds located within the San Jacinto riverbed to recharge the aquifer with State Project Water for a three-year period. Interaction between the local groundwater and State Project Water was assessed by monitoring water quality conditions and levels from October 1990 through January 1991. It was concluded that the average percolation rate in these basins is 6.30 feet/day. The study has determined that imported water can be successfully stored seasonally.

Green Acres Project

Orange County Water District has obtained funding for the Green Acres project from the State Board. The Green Acres project uses reclaimed wastewater to extend local water supplies. Secondary effluent supplied by the County Sanitation Districts of Orange County is treated at the Green Acres facility site in Fountain Valley. The product water is provided to parks, greenbelts, nurseries, schoolyards, golf courses, and industrial sites within a five-mile radius of the plant. Phase I of the project provides 7.5 million gallons of water each day for those uses. The facility design allows for a second-phase expansion to 15 million gallons per day.

The Green Acres distribution system calls for over 25 miles of pipe ranging in diameter from 6 to 36 inches. The first reach of the pipeline will extend into the City of Fountain Valley. The distribution system will supply areas in Santa Ana, Costa Mesa, and eventually Huntington Beach and Newport Beach.

Southern California Comprehensive Reclamation and Reuse Study

In October 1991, SAWPA and several other local agencies became participants in the Southern California Comprehensive Reclamation and Reuse (“SOCAL”) Study. The project is a 6-year, $6 million effort which will be cost-shared 50 percent by the U.S. Bureau of Reclamation and 50 percent by local agencies. The region’s participants include SAWPA, Chino Basin Municipal Water District, Eastern Municipal Water District, Orange County Water District, San Bernardino Valley Municipal Water District, and Western Municipal Water District. The San Diego County Water Authority is a participant as well. The purpose of the study is to develop a long-range strategy for more effective integration of fresh and reclaimed water management programs, and to determine the feasibility of various water reclamation projects within Southern California.

The overall study, initiated on March 10, 1992, consists of two main phases with the first phase consisting of two parts. The first part, Phase 1a, will be the compilation and generation of baseline information. The intended objective of Phase 1a is to more clearly identify the potential for increasing the use of

reclaimed water throughout Southern California. When all data on reclaimed water supply and potential use is collected, possible reclamation project alternatives will be identified, including the possibility of transferring reclaimed water across jurisdictional lines.

Phase 1a will also include the development of screening criteria and tools of analysis necessary to identify and evaluate potential reclaimed water projects. Significant public involvement efforts will begin in Phase 1a and continue through the remainder of the study.

Phase 1a will conclude with the production of a report. The report will include: 1) a description and evaluation of those project alternatives that are considered likely to be feasible given the current and expected economic, environmental, and institutional conditions during the 20-year and 50-year planning horizons; 2) and economic distribution model to be used to further analyze the feasibility of those projects; and 3) a detailed scope of work for Phase 1b.

COASTAL WATERS

Southern California Coastal Water Research Project

As discussed in Chapter Six (Monitoring and Assessment), the Regional Board requires that waste dischargers conduct monitoring programs to evaluate the effects of their discharges on the receiving waters. In the Santa Ana Region, the most extensive self-monitoring program (approximately 2 million dollars per year) is carried out by the County Sanitation Districts of Orange County (CSDOC), which discharges about 240 MGD of wastewater to the Pacific Ocean via a 5-mile outfall.

Other ocean dischargers, such as the Southern California Edison's Huntington Beach Generating Station, conduct receiving water monitoring programs, though these are considerably less extensive than that prescribed for CSDOC.

It has been recognized for some time, however, that these individual discharger efforts, despite their intensity and sophistication, are not in themselves sufficient to obtain an accurate and complete picture of the impacts of ocean discharges. A broader, regional perspective is necessary to evaluate the cumulative effects and interactions of all inputs to the coastal waters from both point and nonpoint sources.

Towards that end, the Southern California Coastal Water Research Project (SCCWRP) was established in 1969 by a consortium of waste dischargers. SCCWRP conducts a wide variety of chemical, physical, and biological investigations of the open coastal waters from San Diego to Ventura, and area commonly called the Southern California Bight. SCCWRP's mission is to understand the effects of urban wastes on the marine environment. Annual reports describe the specific research projects conducted to characterize the

sources, fates, and effects of anthropogenic pollution on marine water quality, biota, and sediments.

The organization of the SCCWRP administration was recently revised. The SCCWRP Commission, which provides direction on regional monitoring needs and priorities, now includes staff representatives from the Los Angeles, Santa Ana, and San Diego Regional Boards, the State Board and US EPA, as well as the Sanitation Districts of Orange and Los Angeles Counties and the cities of Los Angeles and San Diego.

Huntington Beach

The City of Huntington Beach coordinates the Huntington Beach Waterways and Beaches Committee, a public outreach task force engaged in tracking agency activities in the Huntington Beach area. The public at large is invited to the meetings in which staff from the City Council, Orange County (Environmental Management Agency, Health Care Agency, and Flood Control District), the U.S. Naval Weapons Station at Seal Beach, and Regional Board staff participate. Reports are given to update the activities and studies in which the above agencies are involved. One of the Committee's major concerns is water quality. The Committee is actively involved in public education and efforts to ensure compliance with holding tank requirements.

Newport Bay Watershed

Water quality problems in Newport Bay and its watershed and the activities in progress to address them are described briefly in Chapter 5 and, in more detail, in reports prepared in response to Senate Concurrent Resolutions (SCR) 38 and 88. Both SCR reports identify a plan for future action by the agencies and parties with responsibilities and interests related to water quality in the watershed. A major them of these reports is the need for continued interagency coordination to implement these action plans.

Towards this end, the Newport Bay Coordinating Council was formed. It includes representatives from the Regional Board, the Environmental Management and Health Care Agencies of Orange County, Senator Marian Bergeson's office, City of Newport Beach, Newport Harbor Quality Committee, California Department of Fish and Game, U.S. Army Corps of Engineers (Corps), Irvine Company, and various Newport Bay community action groups. The Council provides a forum for the exchange of information on and coordination of activities related to the Bay, from grass roots debris cleanups to the possible Corps dredging in the Upper Bay. The Council also sponsors public education and outreach programs.

Many of the representatives on the Coordinating Council are also members of the City of Newport Beach Harbor Quality Committee. The City of Newport Beach Parks and Recreation and Marine Departments are participants as well. This committee has been involved in many projects to educate the public on ways Newport Harbor water quality can be better protected. It has sponsored excellent outreach projects, such as the Baywatchers Program, and has distributed informational brochures identifying simple pollution prevention practices. The Committee assisted in the development of a pamphlet showing the locations of vessel pumpout stations in the Bay and was instrumental in the adoption of a city ordinance regarding vessel waste management for charter and tour boats. The Committee's action also led to a ban on the use of endosulfan in the Newport Bay watershed.

FUNDING PROGRAMS

Grant Programs

Clean Water Act §205(j) Water Quality Planning Grant Program

Section 205(j) of the federal Clean Water Act (CWA) allows each state to reserve up to one percent of its annual Clean Water Construction Grant allotment for water quality management and planning. In addition, Congress has provided funding under Section 604(b), State Revolving Fund Set Aside. Any interstate, regional or local public agency may apply directly to the State Water Resources Control Board for funding. As funds are available, State agencies and publicly-funded educational institutions may also apply.

Generally, the State Board requests a workplan on the project be submitted one year prior to the project's actual start date, due to the period of delay between submittal of the proposal and receipt of federal funding. The State Board notifies interested parties through a Request for Workplans notice. Currently, the workplans are evaluated and ranked according to specific criteria. The criteria include:

- Resource value of the waterbody
- Condition rating of the waterbody
- Whether/how water quality is addressed
- Feasibility of the workplan proposal
- Benefits expected from the work
- Cost of the work

- Applicant's Institutional/financial commitment to implement work products

- Applicant's capability to carry out workplan

The resource value and condition ratings have been calculated and usually are identified in the Water Quality Assessment factsheets. In all cases, there is a minimum 25 percent local funds match requirement for all 205(j)(2) funded projects. The match is calculated on the basis of the total project cost.

Clean Water Act §319 Nonpoint Source (NPS) Grant Program

The Clean Water Act (CWA) Section 319(h) provides grant funds for projects directed at the management of nonpoint source pollution. In California, the State Board determines which project receives Section 319 funds, with input from the Regional Boards. The amount of funds available is dependent upon Congressional Appropriations and therefore varies each year.

The State Board has placed highest priority on projects which implement specified nonpoint source management practices under Section 319 requirements. The State Board must also commit to address nonpoint source waters listed pursuant to CWA section 303(d) (water quality limited segments), and to the protection of high quality waters.

For fiscal Year (FY) 1994, the nonpoint source funds are to be used for the implementation of watershed management plans or strategies that will lead to coordinated water management, or for the demonstration of specific practices considered part of a watershed management effort.

Activities which reduce, eliminate, and/or prevent NPS pollution are eligible projects. The agencies eligible to receive Section 319 funds are those with the demonstrated authority to require implementation of the project (***e.g.***, Resource Conservation Districts). Examples of specific activities eligible for Section 319 funds include the demonstration of best management practices (BMPs) for agricultural drainage, acid mine drainage, acid mine drainage, channel erosion, hydrologic modification, groundwater protection, pollution prevention, and septic systems.

Generally, the State Board requests that a workplan on the project be submitted one year prior to the projects actual start date, due to the period of delay between submittal of the proposal and receipt of federal funding. The State Board notifies interested parties of the availability of finds through a Request for Workplans notice. The workplans are then evaluated and ranked according to specific criteria. The applicant is required to match the grant funds with a 40 percent nonfederal match. The State Board's NPS Program staff should be contacted to get other specific guidance on this grant.

Clean Water Act §314 Clean Lakes Grant Program

The Clean Lakes Program grant is similar to the CWA 205(j) program, but is specified under CWA section 314. Under the Clean Lakes Program, the US EPA, through the State Board, provides assistance in two phases. Phase I awards up to $100,000 per project for diagnostic feasibility studies and requires a 30 percent non-federal match. These studies must be completed in three years. The Phase II awards have no funding cap, but they require a 50 percent non-federal match. These funds are available to support implementation of pollution control and/or in-lake restoration methods and procedures, including final engineering design. These projects must be completed in four years.

Funding is also available for Lake Water Quality Assessment projects, which are projects intended to achieve any needed lake monitoring and assessment which would not otherwise be done. These grants require a fifty percent non-federal match.

All State and local agencies can participate in the 314 Program. Only projects dealing with publicly-owned lakes are eligible for funding. The lake must also be prioritized for remediation by the State, which is demonstrated by placement on the 314 list of impacted water bodies in the Water Quality Assessment.

Currently, procedures require State Board staff to evaluate the proposed projects and draft a project priority list to be brought before the State Board. The State Board adopts and submits the list to the US EPA, which determines the final priority projects for funding.

Small Communities Grant Program

The 1987 amendments to the CWA terminated the federal Clean Water Grant Program but provided for the use of federal funds to capitalize State Revolving Fund (SRF) loan programs (see SRF discussion below). California voters recognized that many small communities would not be able to afford the higher costs of the SRF Program and passed the Clean Water and Water Reclamation Bond Law of 1988. The Clean Water Bond Law contains 25 million dollars in State grant assistance for small communities. The program defines a small community as less than 3,500 people. No grant under this program can exceed 2 million dollars. The Law also states that the State Board may make grants on a sliding scale based on a community's ability to pay.

The Small Communities Grant (SCG) Program provides only the funds to make a wastewater treatment project affordable. It is assumed that a community can afford to spend a certain percentage of its Median Household Income (MHI) calculated, the higher the percentage the community can afford to spend for wastewater facilities. If a community's treatment costs exceeds what the program assumes is affordable, the SCG Program will provide up to 2 million dollars to reduce the costs to make the project more affordable.

A community can receive a SCG for up to 97.5 percent of the allowable project costs and is also eligible to apply to any other State or federal agency to fund the local share of the project costs. A low interest loan from the SRF Program may be obtained, for example, if the project is on the SRF Loan Priority List. If funding is not available for the local share from any source at a reasonable cost, the community may apply for a low interest loan from the Water Quality Control Fund. The combined assistance can not exceed 100 percent of the total project costs.

There are many requirements to receive a SCG. Briefly, the project must be submitted to the Regional Board for placement on a Regional Board SCG Priority List. The project is classified according to the need for a sewage treatment facility. The Regional Board SCG lists are compiled for State Board adoption and further prioritized according to several criteria. There are other restrictions and specific provisions a grantee must satisfy, as specified in guidelines provided by the State Board.

The State Board may use a portion of the SCG to fund pollution study grants. The SCG Program will fund up to 97.5 percent of the eligible costs for an approved pollution study. The objective of the study must be to document the existence of an actual or potential public health or water quality problem.

Loan Programs

State Revolving Fund (SRF) Loan Program

The SRF Loan Program provides funding for construction of publicly-owned treatment works (POTWs), for nonpoint source correction programs and projects, and for the development and implementation of estuary conservation and management programs. Water reclamation projects are also eligible for SRF funding. The loan interest rate is set at one-half the rate of the most recent sale of a State general obligation bond.

Proposed projects must be submitted to the Regional Board for placement on a Regional Board SRF Priority List. Projects are classified and ranked according to several criteria, including documented health problems, conformance with applicable Water Quality Control Plans, and/or compliance with waste discharge requirements. The Executive Officer can directly submit the list to the State Board. The State Board adopts the Statewide Priority List, after which the funds are available on a first-come, first-served basis.

There are other restrictions and specific provisions which the SRF prioritized projects must satisfy; the State Board's Clean Water Program staff should be contacted for a copy of the guidelines.

Agricultural Drainage Water Management Loan Program (ADLP)

The State Agricultural Drainage Water Management Loan Program is funded with a $75 million bond fund. The program funds are available for feasibility studies and the design and construction of agricultural drainage water management projects. The interest rate is set at one-halt the rate of the most recent sale of a general obligation bond. The loan term is not to exceed 20 years. The loan limitations are $20 million for any one project and $100,000 dollars for each feasibility study.

Only local agencies can apply for this loan. The project must remove, reduce, or mitigate pollution from agricultural drainage. The specific types of projects funded include agricultural drainage projects such as evaporation ponds and deep injection wells, selenium removal project, cleanup of groundwater contaminated form agricultural practices, and agroforestry projects. In this region, projects which have acquired ADLP funds include SAWPA's Arlington Desalter and the Chino Basin West Desalter.

The loan application is obtained from the State Board's Division of Water Quality. The completed loan application is submitted with the project planning documents. Upon completion of the loan contract, the applicant submits the final plans and specifications for the project.

Water Reclamation Loan Program

This program makes available low-interest loans for the design and construction of water reclamation projects. The objective of this program is to meet a portion of the future water needs for California through the use of reclaimed water. Projects funded must be cost-effective compared to the development of new sources of water or alternative new freshwater supplies.

As of July 1, 1989, $33 million were available for use only by local public agencies. The funds are augmented annually by loan repayments. The loan interest rate is set at one-half the rate of the most recent sale of the State general obligation bond. The loan term may not exceed 20 years, with up to $5 million available for any one project. Eligible projects include the wastewater treatment facilities necessary to produce water for beneficial reuse, as well as reclaimed water storage and distribution systems. Only that capacity of wastewater which can be used within five years of the completion of construction is eligible.

A loan application package may be obtained from the State Board's Office of Water Recycling. The completed application is submitted with the project planning documents. Projects with complete application packages are funded on a first-come, first-served basis.

Water Quality Control Fund (WQCF) Loan Program

The WQCF Loan Program is a special set-aside intended only for the construction of wastewater treatment facilities or for wastewater reclamation loan feasibility studies. Approximately 6 million dollars are available with the interest

rate set at one-half the average rate paid by the State on general obligation bonds sold in the preceding year.

This program's eligibility requirements state that the applicant must hold a local election with a simple majority approving the application for the loan. In addition, the applicant must demonstrate that: 1) revenue or general obligation bonds cannot be sold; 2) financial hardship exists; and 3) local funding is not available.

The State Board's Division of Clean Water Programs is the contact for a loan application. The application is submitted with the documents which demonstrate financial hardship, lack of the local share, and the election results.

REFERENCES

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Wildermuth, Mark J., Water Resources Engineer, "Plan of Study, Implementation of a Conjunctive Use Plan for the Colton and Riverside Basins, Draft Number 1," June 1993.

"Southern California Coastal Water Research Project, Annual Report 1990-91 and 1991-92," November, 1985 (SCR 38 Report).

California Regional Water Quality Control Board, Santa Ana Region, "Newport Bay Clean Water Strategy, A Report and Recommendations for Future Action," September, 1989 (SCR 88 Report).

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

ORDER NO. R8-2010-0033
NPDES NO. CAS 618033

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, THE COUNTY OF RIVERSIDE, AND THE INCORPORATED CITIES OF RIVERSIDE COUNTY WITHIN THE SANTA ANA REGION

AREA-WIDE URBAN RUNOFF MANAGEMENT PROGRAM

The following Discharger(s) are subject to waste discharge requirements as set forth in this Order:

Table 1. Municipal Permittees (Dischargers)

Principal Permittee	Riverside County Flood Control and Water Conservation District (RCFC&WCD)*	
Co–Permittees	1. Beaumont	9. Moreno Valley
	2. Calimesa	10. Murrieta
	3. Canyon Lake	11. Norco
	4. Corona	12. Perris
	5. County of Riverside (County)	13. Riverside
	6. Hemet	14. San Jacinto
	7. Lake Elsinore	15. Wildomar
	8. Menifee	

The Principal Permittee and the Co-Permittees are collectively referred to as the Permittees or the Dischargers.

Table 2. - Administrative Information

This Order was adopted by the Regional Water Board on:	**January 29, 2010**
This Order will become effective on:	**January 29, 2010**
This Order will expire on:	**January 29, 2015**
The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board have classified this discharge as a major discharge.	
The Discharger must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than 180 days in advance of the Order expiration date.	

IT IS HEREBY ORDERED, that this Order supersedes Order No. R8-2002-0011 except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) and regulations adopted there under, and the provisions of the federal Clean Water Act (CWA), and regulations and guidelines adopted there under, the Permittees must comply with the requirements in this Order.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that this Order No. R8-2010-0033 with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 29, 2010.

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Gerard J. Thibeault, Executive Officer

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I. FACILITY INFORMATION

A. Each of the municipalities listed in Table 1, above, hereinafter called Permittees, owns and/or operates portions of the municipal separate storm sewer system (MS4[1]), through which Urban Runoff is discharged into Waters of the United States (Waters of the US) that are located within the jurisdiction of the Santa Ana Regional Water Quality Control Board (Santa Ana Region). The MS4 falls into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) an MS4 which contributes to a violation of a Water Quality Standard; or (3) an MS4 which is a significant contributor of Pollutants to Waters of the US; or (4) an MS4 owned and/or operated by a small municipality that is interrelated to a medium or large municipality. Section 402(p) of the CWA requires that discharges of Urban Runoff from MS4 be regulated under a National Pollutant Discharge Elimination System (NPDES) permit.

B. This Order regulates the discharge of Pollutants in Urban Runoff from non-agricultural Anthropogenic sources from the MS4 that is owned and/or operated by the Permittees. The Permittees lack legal jurisdiction over discharges into their MS4 facilities from agricultural activities, State and federal facilities, public schools and hospitals, utilities, railroads, and special districts, Native American tribal lands, wastewater management agencies and other point and non-point source discharges otherwise permitted by the Regional Board. The Regional Board recognizes that the Permittees should not be held responsible for discharges from such facilities or Pollutants in those discharges. However, to the extent that the Permittees authorize the connection of these discharges into their MS4s, this Order requires the Permittees to provide written notification of Water Quality Management Plan (WQMP) requirements for post-construction best management practices (BMPs) and/or other applicable requirements of this Order. A WQMP approved by the Permittee who owns the MS4 may constitute compliance with the General Construction Permit post construction Standards[2] for the Permit Area.

C. The Co-Permittees have established legal authority to control discharges into the MS4 facilities that they own and/or operate. As owners and/or operators of the MS4, the Permittees are responsible for discharges into their MS4 facilities to the extent of their legal authority. The discharge of Pollutants into the MS4 may cause or contribute to, or threaten to cause or contribute to, a condition of Pollution in Receiving Waters. Federal regulations, 40 CFR 122.26(d)(2)(i), require the Permittees to control the discharge of Pollutants into the MS4 to the maximum extent practicable (MEP).

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1 Note: Acronyms and capitalized terms used in this document are defined in Appendix 4.
2 The State General Construction Permit Section Order No. 2009-0009-DWQ XIII

Certain activities and sources that generate Pollutants present in Urban Runoff may be beyond the ability of Permittees to prevent or eliminate. Examples of these activities and sources include, but are not limited to: emissions from internal combustion engines, brake pad wear and tear, atmospheric deposition, bacteria and wildlife (including feral cats and dogs) and leaching of naturally occurring nutrients and minerals from local soils. This Order is not intended to address background or naturally occurring Pollutants or flows.

D. The Permittees have identified Major Outfalls and have submitted maps of existing MS4 facilities. The Co-Permittees reported having approximately 269 miles of underground storm drains, and 95 miles of channels[3]. The RCFC&WCD reported having 75 miles in underground storm drains and 59 miles of channels in the Permit Area.

E. On February 5, 2008 Wildomar residents voted for cityhood and the city incorporated on July 1, 2008. Menifee residents voted for cityhood on June 3, 2008 and the city incorporated on October 1, 2008. Both cities in letters dated May 5 and May 6, 2009, respectively, have expressed their intent to be a Co-Permittee in this Order and for the purposes of this Order shall be considered as such. Urban Runoff from the cities of Menifee, Murrieta and Wildomar discharges into watersheds within the Santa Ana Regional Board and the San Diego Regional Board jurisdictions. Therefore, these cities are regulated by MS4 permits issued by both Regional Boards. Urban Runoff from the County of Riverside and RCFC&WCD discharge into watersheds within the Santa Ana, San Diego and Colorado River Region Regional Board jurisdictions. Therefore, these entities are regulated by MS4 permits issued by three Regional Boards.

F. The Permit Area contains 1,396 square miles or 19.1% of the 7,300 square miles within Riverside County and includes 15 of the 26 municipalities within Riverside County. The more densely populated areas of Riverside County are located within the Santa Ana Regional Board's jurisdiction. The population of the Permit Area was estimated at 1,237,388 as of January 1, 2006[4]. The California Department of Finance estimates that as of January 1, 2009, the population of Riverside County was 2,107,653[5]. Other portions of Riverside County are regulated by the San Diego and the Colorado River Basin Regional Boards.

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[3] 2008-2009 Permittee Santa Ana NPDES MS4 Annual Report.
[4] Section 3.3.1 of the 2007 ROWD (Western Riverside Council of Governments (WRCOG), Sub-regional Growth Forecast, Riverside County Projection (Revised Draft), November 22, 2006.)
[5] E-1 report dated April 30, 2009 (http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/2008-09/documents/E-1_2009%20Press%20Release.pdf).

II. FINDINGS

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter the "Regional Board") finds that:

A. BACKGROUND

1. The Co-Permittees own and operate flood control facilities. Some of the natural channels, streambeds and other drainage facilities that are generally considered as Waters of the U.S. have been converted to flood control facilities. In such cases, where a natural streambed is modified to convey storm water flows, the conveyance system becomes both a MS4 and a Water of the US.

2. The Permittees are currently discharging from the MS4 pursuant to Order No. R8-2002-0011, NPDES Permit No. CAS 618033. This Order renews Order No. R8-2002-0011 and regulates discharges of Urban Runoff from the MS4 within Riverside County.

3. On April 27, 2007, the RCFC&WCD, in cooperation with the County of Riverside, (the "County") and the incorporated cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, and San Jacinto, jointly submitted a permit renewal application, a Report of Waste Discharge (the "2007 ROWD"), to renew the NPDES permit for discharges of Urban Runoff from the MS4 in the Permit Area. Subsequently, the cities of Menifee and Wildomar also signed letters of intent to include discharges from their MS4 facilities under this MS4 Permit. The County and incorporated cities are hereinafter the "Co-Permittees", and collectively with the Principal Permittee referred to as the "Permittees". The Permit Area is shown in Appendix 1 and includes the urban areas and those portions of agriculture and open space as shown on Appendix 1 that may convert to industrial, commercial, or residential use during the term of this Order.

4. To more effectively carry out the requirements of this Order, the Permittees have agreed that the RCFC&WCD will continue as the Principal Permittee and the County and the incorporated cities within the Permit Area will continue as the Co-Permittees.

5. The Permittees submitted a revised Drainage Area Management Plan ("2007 DAMP") as contained in Appendix B of the 2007 ROWD. The proposed DAMP identifies programs and policies, including best management practices (BMPs), to achieve Water Quality Standards in the Receiving Waters. These BMPs can be organized into two categories: BMPs for existing facilities and BMPs for New Development and Significant Redevelopment. Both categories include regulatory activities, public education programs, waste management, and operations and

maintenance activities. The Permittees currently implement the 2006 DAMP. With the adoption of this Order, the Permittees are required to implement the 2007 DAMP. The DAMP is a dynamic document that defines the MEP standard (see discussion of this term in the Glossary, Appendix 4) for the Permittee activities and is incorporated by reference as an enforceable element of this Order.

6. This Order requires the Permittees to revise the DAMP and associated documents to incorporate new MS4 Permit requirements which include recommendations from the 2007 ROWD. Future modifications of the DAMP, once approved by the Regional Board Executive Officer[6], are also enforceable elements of this Order.

7. During the Third Term Permit, Regional Board staff conducted an evaluation of each of the Permittees' Urban Runoff programs. This evaluation indicated that most of the Permittees lacked proper documentation of procedures and policies for implementation of various elements of their Urban Runoff program. This Order requires each Permittee to develop a Local Implementation Plan (LIP) that documents its internal procedures for implementation of the various program elements described in the DAMP and this Order.

8. On July 13, 1990, the Regional Board adopted the first term Riverside County MS4 permit, Order No. 90-104 (NPDES No. CA 8000192). On March 8, 1996, the Regional Board renewed Order No. 90-104 by adopting the second term Riverside County MS4 permit, Order No. 96-30 (NPDES No. CAS618033). On October 25, 2002, the Regional Board renewed Order No. 96-30 by adopting the third term MS4 permit, Order No. R8-2002-0011(NPDES No. CAS618033).

9. This Order renews Order No. R8-2002-0011 (NPDES No. CAS618033), and regulates discharges of Urban Runoff from the MS4 within the Permit Area in Riverside County. This Order is the fourth term permit and is intended to regulate the discharge of Pollutants in Urban Runoff from non-agricultural Anthropogenic activities and sources under the jurisdiction of and/or maintenance responsibility of the Permittees and is not intended to address background or naturally occurring Pollutants or flows.

10. The Santa Ana River Basin is the major watershed within the Santa Ana Region. The Regional Board and the Permittees recognize the importance of watershed

[6] The Executive Officer shall provide members of the public with notice and at least a 30-day comment opportunity for all documents submitted in accordance with this Order. If the Executive Officer, after considering timely submitted comments, concludes that the document is adequate or adequate with specified changes, the Executive Officer may approve the document or present it to the Board for its consideration at a regularly scheduled and noticed meeting. If there are significant issues that cannot be resolved by the Executive Officer, the document will be presented to the Board for its consideration at a regularly scheduled meeting.

management initiatives and regional planning and coordination in the development and implementation of programs and policies related to water quality protection.

11. It is recognized that in some cases MS4 facilities are used to convey Urban Runoff to sub-regional or regional Treatment Control BMPs or may incorporate regional BMPs directly. The Regional Board recognizes this appropriate strategy for treatment provided that Waters of the US are not used to convey Pollutants. Further, such BMPs are not considered MS4 or Waters of the US.

12. A number of regional and watershed-wide efforts are underway in which the Permittees are active participants. The Regional Board also recognizes that, in certain cases, diversion of funds targeted for certain monitoring programs to regional monitoring programs may be necessary. The Executive Officer is authorized to approve, after proper public notification and consideration of all comments received, reallocation of resources to the watershed management initiatives and regional planning and coordination programs and regional monitoring programs.

13. The Permittees are required to submit all documents, where appropriate, to the Regional Board in an electronic format. All such documents will be posted at the Regional Board's website and all interested parties will be notified. In addition, the website will include the administrative and civil procedures for appealing any decision made by the Executive Officer. Some Urban Runoff issues, such as monitoring, public education, and training can be more effectively addressed on a regional or statewide basis thereby increasing program consistency and efficiency. This Order encourages continued participation in such programs and policies.

B. LEGAL AUTHORITIES

1. This Order Is issued pursuant to Section 402 of the CWA, the Porter-Cologne Water Quality Control Act (Division 7 of the Water Code, commencing with Section 13000), applicable State and federal regulations, all applicable provisions of statewide Water Quality Control Plans and Policies adopted by the State Water Resources Control Board (State Board), the Water Quality Control Plan for the Santa Ana River Basin adopted by the Regional Board (Basin Plan), the California Toxics Rule (CTR), and the California Toxics Rule Implementation Plan. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4, Division 7 of the Water Code (commencing with Section 13260).

2. This Order is consistent with the following precedential Orders adopted by the State Board addressing municipal storm water NPDES Permits: Order 99-05-DWQ (Petition of Environmental Health Coalition/Receiving Water Limitation Language for Municipal Storm Water Permits), Order WQ-2000-11 (Petitions Bellflower, City of Arcadia, Western States Petroleum Association, Review of RWQCB and Its

Executive Officer Pursuant to Order 96-054, Permit for Municipal Storm Water and Urban Run-Off Discharges within Los Angeles County), Order WQ 2001-15 (In the Matter of the Petitions of Building Industry Association of San Diego County and Western States Petroleum Association), and Order WQO 2002-0014 (Petitions of Aliso Viejo, et al/Order to stay provision F.5.f of the permit and part of last sentence of Finding 26, permit issued by San Diego Regional Water Quality Control Board).

3. Consistent with the State Board's orders, this Order requires the Permittees to comply with the applicable Water Quality Standards, which is to be achieved through an iterative approach requiring the implementation of increasingly more effective BMPs until Water Quality Standards are not impaired by Urban Runoff. All MS4 permits issued in California specify certain minimum BMPs and incorporate an iterative process that requires increasingly more effective BMPs if the Water Quality Standards are not met.

4. The federal Clean Water Act established a national policy designed to help maintain and restore the physical, chemical and biological integrity of the nation's waters. In 1972, the CWA established the NPDES permit program to regulate the discharge of Pollutants from Point Sources to Receiving Waters. From 1972 to 1987, the main focus of the NPDES program was to regulate conventional Pollutant sources such as sewage treatment plants and industrial facilities. As a result, on a nationwide basis, non-point sources, including agricultural runoff and Urban Runoff, now contribute a larger portion of many kinds of Pollutants than the more thoroughly regulated sewage treatment plants and industrial facilities.

5. Studies conducted by the USEPA, the states, counties, cities, flood control districts and other entities dealing with Urban Runoff indicate that the following are major sources of Urban Runoff Pollution nationwide:

   a. Industrial Facilities where appropriate Pollution Prevention and BMPs are not implemented;

   b. Construction Sites where erosion and sediment controls and BMPs are not implemented; and,

   c. Runoff from urbanized areas.

6. The 1987 amendments to the CWA added Section 402(p) that required the USEPA to develop permitting regulations for storm water discharges from MS4 and from Industrial Facilities, including construction sites. The USEPA promulgated the final Phase I storm water regulations on November 16, 1990. Neither the 1987 amendments to the CWA nor the Phase I storm water regulations (40 CFR Part 122) have been amended since their effective dates.

7. Prior to the USEPA's promulgation of the final storm water regulations, three counties (Orange, Riverside, and San Bernardino) and their incorporated cities located within the Regional Board's jurisdiction requested area-wide NPDES MS4 permits. These area-wide MS4 NPDES permits are:

   a. Orange County, NPDES No. CAS 618030

   b. Riverside County, NPDES No. CAS 618033

   c. San Bernardino County, NPDES No. CAS 618036

8. Consistent with the CWA and the USEPA regulations promulgated pursuant thereto, the State Board and the Regional Board have adopted a number of permits to address Pollution from the sources identified in Finding 5, above. Industrial activities (as defined in 40 CFR 122.26(b)(14)) including construction activities on one or more acres are to be covered under one of the following permits and those individuals or entities that engage in such activities are required to secure permission to engage in such identified activities pursuant to the provisions of one of the following permits:

   a. State Board Order No. 97-03-DWQ, for storm water runoff from industrial activities (NPDES No. CAS000001), (the "General Industrial Activities Storm Water Permit").

   b. State Board Order No. 99-08-DWQ, for storm water runoff from construction activities (NPDES No. CAS000002), (the "General Construction Activity Storm Water Permit"). Order No. 99-08- DWQ was amended by State Board Resolution No. 2001-046 on April 26, 2001, to incorporate monitoring provisions as directed by the Superior Court, County of Sacramento. This Order was renewed on September 2, 2009 by State Board Order No. 2009-0009-DWQ. The requirements of Order No. 2009-0009-DWQ will be effective July 1, 2010.

   c. State Board Order No. 99-06-DWQ (NPDES No. CAS000003) for storm water runoff from facilities (including freeways and highways) owned and/or operated by the California Department of Transportation ("Caltrans").

   d. State Board Order No. 2003-0007-DWQ, for discharges of storm water runoff associated with small linear underground/overhead construction projects (NPDES No. CAS000005), (the "General Permit-Small Linear Underground Projects). After July 1, 2010, most linear construction projects will be regulated under State Board Order No. 2009-0009-DWQ.

   e. The Regional Board also issues individual storm water NPDES permits for certain Industrial Facilities within the Santa Ana River watershed. Currently

there is only one individual storm water NPDES permit that has been issued by the Regional Board for an Industrial Facility (March Air Reserve Base) located within the Permit Area. Additionally, the Regional Board has issued NPDES permits for a number of facilities that discharge process wastewater and storm water; storm water discharge requirements are included in such a facility's NPDES permit.

9. Section 402(p) of the CWA establishes two different performance standards for storm water discharges. NPDES MS4 permits require controls to reduce the discharge of Pollutants to the MEP. NPDES permits issued for industrial storm water discharges (including construction activities) must meet Best Available Technology (BAT) and Best Conventional Pollutant Control Technology (BCT) standards. The CWA and the USEPA regulations allow each state the flexibility to decide what constitutes the MEP.

10. This Order does not constitute an unfunded mandate subject to subvention under Article XIII.B, Section (6) of the California Constitution for several reasons, including the following:

    a. This Order implements federally mandated requirements under CWA Section 402(p)(3)(B). (33 USC § 1342(p)(3)(B)).

    b. The Permittees' obligation under this order are similar to, and in many respects less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges.

    c. The Permittees have the authority to levy service charges, fees, or assessments to pay for compliance with this Order[7].

    d. The Permittees requested permit coverage in lieu of compliance with the complete prohibition against the discharge of Pollutants contained in federal Clean Water Act Section 301, subdivision (a). (33 USC § 1311(a)).

11. Section 13225 of the CWC identifies the Regional Board as being the enforcement authority for NPDES permits, including the Industrial General Permit, and the Construction General Permit which are collectively referred to as the "General Stormwater Permits." However, in many areas, the Industrial Facilities and Construction Sites discharge directly into MS4 facilities owned and operated by the Permittees. These Industrial Facilities and Construction Sites are also regulated under local ordinances and regulations. The Permittees and Regional Board staff work together to avoid duplicative efforts in regulating these facilities. As part of

[7] Voter approval may be required for new tax levies.

this coordination, the Permittees have been notifying Regional Board staff when they observe, during their routine activities, conditions that result in a threat or potential threat to water quality, or when a required Industrial Facility or Construction Site fails to obtain coverage under the appropriate General Stormwater Permit.

12. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code Sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. Sections 1531 to 1544). This Order requires compliance with Effluent Limits, Receiving Water Limits, and other requirements to protect the Beneficial Uses of Waters of the US. The Permittees are responsible for meeting all requirements of the applicable Endangered Species Act.

13. The Permittees may petition the Regional Board to issue a separate NPDES permit to any discharger of Non-storm Water into MS4 facilities that they own or operate.

14. The Regional Board has considered anti-degradation requirements, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, for this discharge. The Regional Board finds that the Urban Runoff regulated under this Order is consistent with the federal and state anti-degradation requirements and a complete anti-degradation analysis is not necessary. This Order requires the continued implementation of programs and policies to reduce the discharge of Pollutants in Urban Runoff. This Order includes additional requirements to control the discharge of Pollutants in Urban Runoff from “Significant Redevelopment,” and “New Development,” as defined in Finding II.G. and Section XII of this Order.

C. RATIONALE FOR REQUIREMENTS

1. The Regional Board developed the requirements in this Order based on information submitted as part of the 2007 ROWD (including the 2007 DAMP), monitoring and reporting data, program audits, and other available information and consistent with the CWA, CWC and regulations adopted thereunder.

2. The Fact Sheet (Appendix 6) which contains additional background information and rationale for requirements specified in this Order is hereby incorporated into this Order and constitutes part of the Findings for this Order. Appendices 1 through 5 and 7 are also incorporated into this Order.

D. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

1. Under Water Code Section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code Sections 21100 -21177 (*County of Los Angeles v. California State Water Resources Control Board* [2006] 142 Cal Appl. 4th 985, mod. [Nov. 6, 2006, B184034] 50 Cal. Rptr 3rd 619, 632-636). This action also involves the re-issuance of WDRs for existing facilities and as such, is exempt from the provisions of CEQA (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301.

2. Compliance with this Order and the DAMP does not necessarily constitute mitigation that is sufficiently specific to satisfy the requirements of CEQA with regards to projects. The intent of the DAMP, WQMP, Storm Water Pollution Prevention Plan (SWPPP) and other programs and policies incorporated into this order is to minimize the impacts from a specific project to a level that is below significance as defined in CEQA.

E. DISCHARGE CHARACTERISTICS

1. This Order regulates Urban Runoff from areas under the jurisdiction of the Permittees. The term Urban Runoff as used in this Order includes storm water runoff, snowmelt runoff and surface runoff and drainage as defined in Appendix 4.
2. Pollutants in Urban Runoff can threaten and adversely affect human health and the environment. Human illnesses have been clearly linked to recreating near storm drains flowing into coastal waters[8]. Also, Pollutants in Urban Runoff can bioaccumulate in receiving waters in the tissues of invertebrates and fish and eventually consumed by humans and other animals.
3. Urban Runoff can carry Pollutants described in the Fact Sheet to rivers, streams, and lakes within the Permit Area (collectively the "Receiving Waters"). In addition, although infrequently, Urban Runoff from the Permit Area can carry these Pollutants to other receiving waters such as the Pacific Ocean.
4. Management of Dry Weather discharges resulting from urbanization provides an opportunity to promote water conservation as well as address water quality.
5. The Co-Permittees discharge Urban Runoff into lakes, drinking water reservoirs, rivers, streams, creeks, and tributaries thereto within the Upper Santa Ana River, Middle Santa Ana River, and San Jacinto hydrologic units within the Santa Ana Region, as shown in Tables 3a and 3b. Some of the Receiving Waters have been designated as Impaired by the Regional Board and the USEPA pursuant to CWA Section 303(d).

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[8] The Santa Monica Bay Restoration Project, Epidemiology Study, 1996.

Table 3a – Receiving Waterbodies and Municipal Dischargers:

	Upper Santa Ana									San Jacinto								
Municipality	**Mill Creek Prado Area**	**Chino Creek, Reach 1A**	**Chino Creek, Reach 1B**	**Temescal Creek**	**San Timoteo Wash**	**Little San Gorgonio**	**Santa Ana River, Reach 3**	**Santa Ana River, Reach 4**	**Cucamonga Creek**	**San Jacinto River reaches 1-4**	**Lake Elsinore**	**Canyon Lake**	**Strawberry Creek**	**Lake Hemet**	**Salt Creek**	**Poppet Creek**	**Indian Creek**	**Bautista Creek**
RCFC&WCD				◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Beaumont					◆	◆	⌘	⌘		◆	⌘		◆					
Calimesa					◆	⌘	⌘	⌘		◆	⌘	◆	◆					
Canyon Lake				⌘			⌘			⌘	⌘	◆						
Corona				◆			⌘											
County of Riverside (County)	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Hemet				⌘			⌘			⌘	⌘	⌘			⌘			
Lake Elsinore				◆			⌘			⌘	◆							
Menifee				⌘			⌘			⌘	⌘	⌘			⌘			
Moreno Valley				⌘			⌘			⌘	⌘	⌘						
Murrieta				⌘			⌘				⌘							
Norco				⌘			◆											
Perris				⌘			⌘			◆	⌘	⌘			⌘			
Riverside				⌘			◆	◆			⌘							
San Jacinto										◆	⌘	⌘						
Wildomar				⌘			⌘				⌘							

◆ Direct Discharge of MS4 to Receiving Water
⌘ Tributary to Receiving Water

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Table 3b. Beneficial Uses and 2006 CWA Section 303(d) Impaired Waters

Watershed Management Areas in Riverside County	Hydraulic Unit	Beneficial Uses
Upper Santa Ana River		
Santa Ana River, Reach 3,	801.21, 801.25, 801.27,	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN
Santa Ana River, Reach 4	801.27, 801.44	GWR, REC1, REC2, WARM, WILD, SPWN
Temescal Creek – Reach 1	801.25	REC1, REC2, WARM, WILD
Temescal Creek – Reach 2	801.32, 801.25	INTERMITTENT - AGR, IND, GWR, REC1, REC2, LWARM
Temescal Creek – Reach 3 **See Lee Lake**		
Temescal Creek – Reach 4	801.34	RARE, INTERMITTENT - AGR, GWR, REC1, REC2, WARM, WILD
Temescal Creek – Reach 5	801.35	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek – Reach 6	801.35	INTERMITTENT - GWR, REC1, REC2, WARM, WILD
Coldwater Canyon Creek	801.32	MUN, AGR, GWR, REC1, REC2, WARM, WILD
Bedford Canyon Creek	801.32	INTERMITTENT - GWR, REC1, REC2, WARM, WILD
Dawson Canyon Creek	801.32	MUN, GWR, REC1, REC2, WARM, WILD
Day Creek	801.21	MUN,PROC, GWR, REC1, REC2, COLD, WILD
San Sevaine Creek	801.21	INTERMITTENT - MUN, GWR, REC1, REC2, COLD, WILD
San Timoteo Wash Reach 3	801.62	IGWR, REC1, REC2, WARM, WILD, RARE
Little San Gorgonio Creek & Tributaries	801.62, 801.63, 801.69	MUN, GWR, REC1, REC2, COLD, WILD
Sunnyslope Channel	801.27,	MUN, REC1, REC2, WARM, WILD, SPWN
Tequesquite Arroyo (Sycamore Creek)	801.27,	GWR, REC1, REC2, WARM, WILD, SPWN
Chino Basin/ Middle Santa Ana		
Chino Creek, Reach 1A	801.21	REC1, REC2, WARM, WILD, RARE
Chino Creek, Reach 1B	801.21	REC1, REC2, WARM, WILD, RARE
Mill Creek (Prado Area)	801.25	REC1, REC2, WARM, WILD, RARE
Cucamonga Creek – Reach 1	801.21	GWR, REC1, REC2, LWARM, WILD

Watershed Management Areas in Riverside County	**Hydraulic Unit**	**Beneficial Uses**
San Jacinto San Jacinto River reaches 1 and 6	802.31, 802.32 & 802.21	INTERMITTENT - MUN, AGR, GWR, REC1, REC2, WARM, WILD
San Jacinto San Jacinto River reaches 3-5	802.11, 802.14, 802.21,	INTERMITTENT - AGR, GWR, REC1, REC2, WARM, WILD
San Jacinto San Jacinto River reach 2 **See Canyon Lake**		
San Jacinto San Jacinto River reach 7	802.21	MUN, AGR, GWR, REC1, REC2, COLD, WILD
- Bautista Creek	802.21, 802.23	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Strawberry Creek	802.21	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Fuller Mill Creek	802.22	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Stone Creek	802.21	MUN, AGR, GWR, REC1, REC2, COLD, W ILD
Salt Creek	802.12	INTERMITTENT - REC1, REC2, WARM, WILD
Logan, Black Mtn, Juaro Canyon, Indian, Hurkey, Poppet and Protrero Creeks, and other Tributaries to these Creeks	802.21, 802.22	INTERMITTENT - MUN, AGR, GWR, REC1, REC2, WARM, WILD
Lakes		
Lake Elsinore	802.31	REC1, REC2, WARM, WILD
Canyon Lake	802.11	MUN, AGR, GWR, REC1, REC2, WARM, WILD
Lake Hemet	802.22	MUN, AGR, GWR, POW, REC1, REC2, WARM, COLD, WILD, SPWN
Lake Fulmor	802.21	MUN, AGR, REC1, REC2, WARM, COLD, WILD
Lake Perris	802.11	MUN, AGR, IND, PROC, GWR, REC1, REC2, COMM, WARM, COLD, WILD
Lake Evans	801.27	REC1, REC2, WARM, COLD, WILD
Lake Mathews	801.33	MUN, AGR, IND, PROC, GWR, REC1, REC2, WARM, WILD, RARE
Lee Lake	801.34	AGR, IND, GWR, REC1, REC2, WARM, WILD
Mockingbird Reservoir	801.26	AGR, REC1, REC2, WARM, WILD

AGR: Agricultural Supply; MUN: Municipal and Domestic Supply; GWR: Groundwater Recharge; IND – Industrial Service Supply, POW – Hydropower generation, REC1: Water Contact Recreation; REC2: Non-Contact Water Recreation; WARM: Warm Freshwater Habitat; LWARM: Limited Warm Freshwater Habitat, COLD - Cold freshwater habitat, WILD: Wildlife Habitat, RARE – Rare threatened or endangered species. SPWN – Spawning, reproduction and development waters.

6. Urban Runoff is defined in the Glossary (Appendix 4). It includes those discharges from residential, commercial, industrial, and construction areas within the Permit Area and excludes discharges from Open Space[9], feedlots, dairies, farms and agricultural fields. Urban Runoff consists of storm water and "authorized non-storm water" (see Section VI) surface runoff from drainage sub-areas with various, often mixed, land uses within all of the hydrologic drainage areas that discharge into the Receiving Waters. In addition to Urban Runoff, the MS4 regulated by this Order receives flows from Open Space, agricultural activities, state and federal properties and other non-urban land uses not under the control of the Permittees. The quality of the discharges from the MS4 varies considerably and is affected by, among other things, past and present land use activities, basin hydrology, geography and geology, season, the frequency and duration of storm events, and the presence of past or present illegal and allowed disposal practices and Illicit Connections.

7. Pathogens (from sanitary sewer overflows, septic system leaks, and spills and leaks from portable toilets, pets, wildlife, and human activities) can impact water contact recreation and non-contact water recreation. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors. Oil and grease can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation. Other petroleum hydrocarbon components may cause Toxicity to aquatic organisms and may impact human health. Suspended and settleable solids (from sediment, trash, and industrial activities) may be deleterious to benthic organisms and may cause anaerobic conditions to form. Sediments and other suspended particulates may cause turbidity, clog fish gills and interfere with respiration in aquatic fauna. They may also screen out light, hindering photosynthesis and normal aquatic plant growth and development. However, it is recognized that storm flows from non-urbanized areas such as national forest, state parks, wilderness, and agriculture, as shown on Appendix 1, naturally exhibit high levels of suspended solids due to climate, hydrology, geology and geography.[10] Toxic Substances from pesticides, petroleum products, metals, and industrial wastes can cause acute and/or chronic Toxicity, and can bioaccumulate in organisms to levels that may be harmful to human health. Nutrients (from fertilizer use, fire fighting chemicals, decaying plants, confined animal facilities, pets, and wildlife) may cause excessive algal blooms. These blooms may lead to problems with taste, odor, color and increased turbidity, and may depress the dissolved oxygen content, leading to fish kills.

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[9] Only includes Open Space in strictly unurbanized areas. See Glossary definition of Urban Runoff.
[10] Riverside County Flood Control and Water Conservation District's "Hydrology Manual," dated April 1978 and page II-4 of "Santa Ana River, Design Memorandum No. 1, Phase II GDM on the Santa Ana River Mainstem, including Santiago Creek, Volume 2, Prado Dam." dated August 1988 and D.I. Inman & S.A. Jenkins "Climate Change and the Episodicity of Sediment Flux in Small California Rivers," Journal of Geology, Volume 107, pp. 251-270, 1999.

8. Bacteria and nutrients are the Pollutants of Concern for a majority of the inland waters that are listed under the 303(d) list of Impaired Waterbodies or an adopted Total Maximum Daily Load (TMDL). This Order requires the Permittees to identify sources of bacteria and nutrients in Urban Runoff to their MS4 and to control those Pollutant sources.

9. Recent information[11] shows that plastic wastes and materials released to surface water bodies can harm aquatic species by entanglement or ingestion. This Order requires the Permittees to consider facilities that handle nurdles[12] as a high priority site for inspection, and outreach. Nurdles are a major contributor to marine debris. During a three month study of Orange County researchers found them to be the most common beach contaminant[13]. Nurdles comprised roughly 98% of the beach debris collected in a 2001 Orange County study.

10. The Permittees' water quality monitoring data submitted to date document a number of exceedances of Water Quality Objectives for various Urban Runoff-related Pollutants (fecal coliform bacteria, nutrients, total suspended solids, turbidity, metals, etc.) at various watershed monitoring stations.

11. This Order includes requirements for control of Dry Weather flows from Permittee activities that may cause an exceedance of Water Quality Objectives in Receiving Waters for Total Dissolved Solids (TDS) or total inorganic nitrogen (TIN). Storm water was considered to be an insignificant source for nitrogen/TDS in groundwater.

12. The Permittees' 2003-2004, 2004-2005, 2005-2006, 2006-2007 and 2007-2008 Annual Reports indicate exceedances of Water Quality Objectives for each core MS4 monitoring station discussed in a through g, below. The Permittees have identified nutrients and bacteria as priority constituents for initial corrective actions.

    a. Corona Storm Drain (40) - Six samples were collected and analyzed for fecal coliforms. Three samples were collected in the Dry Season and three during Wet Weather events. All samples analyzed exceeded bacteria (as fecal coliform) Water Quality Objectives with a maximum value of 160,000 MPN fecal coliforms. Boron analyses exceeded Water Quality Objectives of 0.75 mg/L in

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[11] http://www.bestlifeonline.com/cms/publish/health-fitness/Our_oceans_are_turning_into_plastic_are_we_2_printer.shtml, (alternative reference: http://rstb.royalsocietypublishing.org/search?fulltext=entanglement+and+ingestion&sortspec=date&submit=Submit&andorexactfulltext=phrase)

[12] A nurdle is a plastic pellet, also known as pre-production plastic pellet or plastic resin pellet.

[13] Moore, Charles (2002). "A comparison of neustonic plastic and zooplankton abundance in Southern California's coastal waters and elsewhere in the North Pacific". *Algalita Marine Research Foundation*. http://www.mindfully.org/Plastic/Ocean/Marine-Debris-Panel30oct02.htm.

one out of eighteen samples collected (0.78 mg/L). Six samples were collected and analyzed for Total Dissolved Solids (TDS) in 2003-2004. All samples were below the Temescal Creek and Santa Ana River Reach 3 Water Quality Objectives of 800 mg/L/700 mg/L TDS (respectively) and only one (11 mg/L) of ten samples (2005-2008) exceeded the 10 mg/L total nitrogen objective.

b. Sunnymead Channel (316) - Three samples were collected during Wet Weather events and analyzed for fecal coliforms in this time frame. All samples were greater than 5000 MPN and exceeded bacteria Water Quality Objectives of 200 or 400 MPN fecal coliforms. Two samples were collected during Wet Weather events and analyzed for TDS and were below the Water Quality Objective of 700 mg/L for Canyon Lake. Total nitrogen values in all ten samples collected during Wet Weather events were below the Water Quality Objective of 8 mg/L.

c. Hemet Channel (318) - All four Wet Weather samples were detected at greater than 7000 MPN and exceeded the bacteria Water Quality Objective of 200 or 400 MPN for fecal coliforms. As Salt Creek does not have numeric objectives for TDS, the Receiving Water for Salt Creek is Canyon Lake with an objective of 700 mg/L TDS. All eighteen samples collected during Wet Weather events and analyzed for TDS were below the Canyon Lake Water Quality Objective. Total nitrogen values in all nine samples collected during Wet Weather events were below the Water Quality Objective of 8 mg/L.

d. Magnolia Center (364) – Eleven out of thirteen samples (3-Wet Weather samples [>160000 MPN maximum concentration] and 10 dry [5000 MPN maximum]) collected exceeded the Water Quality Objective for fecal coliform (200 or 400 MPN MPN). Two (both collected during Wet Weather events) out of thirty-four samples identified total nitrogen concentrations in excess of the 10 mg/L Water Quality Objective. The maximum concentration measured was 13 mg/L. Water Quality Objective of 700 mg/L TDS were exceeded in three out of eight samples analyzed. The maximum TDS concentration was 930 mg/L TDS.

e. University Wash Channel (702) – All three samples were detected at greater than 5000 MPN concentration and exceeded the fecal coliform Water Quality Objectives of 200 or 400 MPN. The maximum concentration was 13,000 MPN. One (11 mg/L) out of sixteen samples analyzed for total nitrogen was above the Santa Ana River Reach 4 Water Quality Objective of 10 mg/L. Ten samples analyzed for TDS were below Water Quality Objective of 550 mg/L.

f. North Norco Channel (707) – Three out of four samples (>16000 MPN maximum) analyzed for fecal coliform exceeded bacteria Water Quality Objective of 200 or 400 MPN fecal coliform. Three (1300 mg/L maximum concentration dry, 900 mg/L wet) out of four samples analyzed for TDS were above the Santa Ana River-Reach 3 Water Quality Objective of 700 mg/L. Two

samples were Dry Weather and two samples were Wet Weather. One out of ten samples analyzed for total nitrogen exceeded the Water Quality Objective of 10 mg/L for total nitrogen.

g. Perris Line J Channel (752) – All four Wet Weather samples analyzed exceeded bacterial indicator Water Quality Objective the highest value was 13,000 MPN fecal coliform. Two of four samples analyzed for TDS exceeded the Water Quality Objective of 700 mg/L for Canyon Lake. One out of twelve samples analyzed exceeded the Water Quality Objective of 8 mg/L for total nitrogen.

13. The Permittees are participating in several studies in conjunction with the Storm Water Monitoring Coalition (SMC), Storm Water Quality Standards Task Force, the Lake Elsinore and Canyon Lake TMDL Task Force, the Middle Santa Ana River TMDL Task Force and Southern California Coastal Water Research Project (SCCWRP) to address the elevated fecal bacterial indicator levels. Also, the Permittees are anticipating that the use of fecal bacterial indicator will be changed to E. coli and the reclassification of REC uses for several MS4 facilities in the near future. However, E. coli data still indicates Water Quality Objective exceedances that will need to be addressed as part of the TMDL.

14. The above monitoring results, the 303(d) list of Impaired Waterbodies and the approved TMDLs indicate that bacterial contamination is one of the persistent problems in Urban Runoff. TMDL Implementation Plans including Urban Runoff Waste Load Allocations (WLAs) have been adopted by the Regional Board for the Middle Santa Ana River to address this problem. It should be noted, however, that the work of the Storm Water Quality Standards Task Force is likely to result in changes to Recreational Water Quality Objectives and implementation measures, including the suspension of recreational standards during high flow events. Further, some MS4 facilities may be recategorized as REC 2 or REC X (REC 1 nor REC 2) pursuant to Use Attainability Analyses (UAAs). These changes will likely allow the Permittees to focus their TMDL compliance resources on bacterial contamination that is affecting recreational swimming areas used during the Dry Season as the highest priority.

15. The Santa Ana River is the major Receiving Water in the Permit Area. During non-storm periods the flow in the River is dominated by effluent from POTW discharges. POTW discharges are regulated under NPDES permits issued by the Regional Board. In addition, the quality of the Santa Ana River within the Upper Santa Ana sub-watershed is greatly influenced by runoff from agricultural activities. Urban Runoff from the Permit Area constitutes a minor component of the Dry Weather flow in the Upper Santa Ana and San Jacinto sub-watersheds of the Santa Ana River. However, Urban Runoff may be more polluted than POTW discharges and therefore a more significant concern based on monitoring results identified in the Annual Reports.

F. CWA SECTION 303(D) LISTED WATERBODIES AND TMDLS (ALSO SEE SECTION K)

1. Water quality assessment conducted by Regional Board staff has identified a number of Beneficial Use Impairments due, in part, to Urban Runoff. Section 305(b) of the CWA requires the USEPA and each state that has been delegated NPDES permitting authority to routinely monitor and assess the quality of waters of their respective regions. If this assessment indicates that Beneficial Uses are not met, then that waterbody must be listed under Section 303(d) of the CWA as an Impaired Waterbody.
2. Based on the Regional Board's 2006[14] water quality assessment a number of water bodies within the Permit Area are listed (see Table 4, below) as Impaired pursuant to Section 303(d).

Table 4 - Impaired Waterbodies

Waterbody	Pollutant	Potential Sources	Proposed TMDL Completion
Santa Ana River, Reach 3,	Pathogens	Dairies	Approved 2007
Canyon Lake	Nutrients	Non-point Source	Approved 2005
	Pathogens	Non-point Source	Listing under evaluation
Lake Elsinore	Nutrients	Non-point Source	Approved 2005
	Unknown Toxicity PCBs	Unknown Unknown Non-point Source	2021 2019
Lake Fulmor	Pathogens	Unknown Non-point Source	2019
Santa Ana River, Reach 4	Pathogens	Non-point Source	2019

3. Federal regulations require that a total maximum daily load (TMDL) be established for each 303(d) listed waterbody for each of the Pollutants causing Impairment. The TMDL is the total amount of a Pollutant that can be discharged to a subject waterbody, while still enabling the waterbody to attain Water Quality Standards in

[14] On April 24, 2009, the Regional Board adopted Resolution No. R8-2009-0032 approving the CWA Section 305(b) Integrated Report/CWA Section 303(d) List of Impaired Waterbodies. Minor additional modifications were approved by the Regional Board on October 23, 2009. When the revised list is approved by the State Board and the USEPA, the 2006 list will be updated.

the receiving water. Attaining Water Quality Standards means that the receiving waterbody's Water Quality Objectives are met and its Beneficial Uses are protected. The TMDL is the sum of the individual WLAs for point source inputs, Load Allocations (LAs) for Non-Point Source inputs and natural background, and a margin of safety. The TMDLs are one of the bases for limitations established in Waste Discharge Requirements.

4. The Basin Plan amendment incorporating the Middle Santa Ana River Watershed Bacterial Indicator TMDLs (MSAR TMDL) was approved by the Regional Board on August 26, 2005 (Resolution No. R8-2005-0001), by the State Board on May 15, 2006, by the state's Office of Administrative Law on September 1, 2006, and by the USEPA on May 16, 2007.

5. The MSAR TMDL established limits for Bacterial source Indicators for Santa Ana River (Reach 3), Chino Creek (Reaches 1 and 2), Prado Park Lake, Mill Creek (Prado Area), and Cucamonga Creek (Reach 1). The MSAR TMDLs Implementation Plan identifies three sub-watersheds in Riverside County that drain to the Santa Ana River, Reach 3: 1) Riverside Watershed - Contributes surface drainage generally westward from the City of Riverside to the Santa Ana River; 2) Temescal Canyon watershed - Contributes surface drainage generally northward to Temescal Creek and then to the Santa Ana River; and 3) Chino Basin - The southeastern portion of the Chino Basin drains generally south to the Santa Ana River in Riverside County.

6. The MSAR TMDLs specifies WLAs for Urban Runoff, and discharges from concentrated animal feeding operations. LAs are specified for runoff from other types of agriculture and from natural sources (open space/undeveloped forest land). WLAs and LAs are specified for both Dry Season discharges and Wet Season discharges, with separate compliance dates. To protect REC1 Beneficial uses, the TMDL has WLAs for fecal coliform and *E. coli*. The Basin Plan currently does not have an established Water Quality Objective for *E. coli*. Stakeholders in the Santa Ana Region have formed the Storm Water Quality Standards Task Force (SWQSTF) to evaluate USEPA's bacterial indicator recommendations and appropriate recreational beneficial use designations for waterbodies throughout the Region. The SWQSTF is expected to make recommendations for the adoption of alternative bacterial indicators such as *E.coli,* based on USEPA's "Ambient Water Quality Criteria for Bacteria - 1986". These and other recommendations of the SWQSTF are likely to result in changes to recreational Water Quality Objectives.

7. The MSAR TMDL Implementation Plan assigns responsibilities to specific MS4 dischargers to identify sources of impairment, to propose BMPs to address those sources, and to monitor, evaluate, and revise BMPs as needed, based on the effectiveness of the BMP implementation program. These are generally considered as the short-term solutions. The MSAR Permittees are required to develop and

implement a long-term solution (a Comprehensive Bacteria Reduction Plan (CBRP)) designed to achieve compliance with the WLAs by the dates specified in the TMDLs. Specific Implementation Plan tasks are described in Chapter 5 of the Basin Plan and are assigned to one or more of the Permittees. Requirements of the TMDL Implementation Plan tasks are incorporated into this Order. A number of these Implementation Plan tasks are also jointly assigned to non-Permittee stakeholders. The stakeholders have established TMDL task forces to jointly implement and coordinate the TMDL Implementation Plan tasks.

8. The MSAR TMDL Task Force members are listed in Table 5.

Table 5 - Middle Santa Ana River Bacterial Indicator TMDL Task Force

MS4 Permittees	**Non-MS4 Permittees**
Corona, City of	Santa Ana Watershed Project Authority
Norco, City of	US Department of Agriculture, Forest Service
Riverside, City of	Ag Pool, Milk Producers Council
Riverside, County of	Region 4 MS4 Permittees - Claremont and Pomona (pending formal agreement)
RCFC&WCD	Regional Board
San Bernardino County Flood Control District (representing the County of San Bernardino and the municipalities named in the TMDL)[(San Bernardino County, and the Cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, Rialto and Upland)]	

9. Pursuant to Task 3 of the MSAR TMDL, on June 29, 2007, the Regional Board approved the monitoring program (Resolution No. R8-2007-0046) proposed by the TMDL Task Force. Pursuant to Task 4 of the MSAR TMDL, on April 18, 2008, the Regional Board approved the Urban Source Evaluation Plan (USEP) that included a BMP effectiveness study (Resolution No. R8-2008-0044) proposed by the TMDL Task Force. This Order requires the Permittees on the Task Force to continue to implement the approved monitoring program and the USEP.

10. A BMP effectiveness study was completed as part of the MSAR Watershed–Wide and BMP effectiveness components of the Middle Santa Ana River Water Quality Monitoring Plan (dated April 3, 2008). The results of this study will be incorporated into a BMP selection criteria that will be used as a guide to address bacterial indicator sources within the MSAR watershed. The Principal Permittee plans to conduct a phase 2 study at its Low Impact Development (LID) testing facility to evaluate the effectiveness of several LID-based BMPs, which will further guide BMP selection in the MSAR watershed.

11. As part of Task 4.1, the MSAR Permittees completed the first phase of the approved USEP (Resolution No. R8-2008-0044) and the report is currently under review by Regional Board staff. Several discrete sources of bacterial indicator were identified, controlled, or eliminated as a result of this effort. Based on the outfall monitoring data collected to date, additional sites are identified, monitored and prioritized yearly for further evaluation in the next phases of the USEP. The next phase of the USEP that will focus on an implementation plan to retrofit BMPs to address elevated bacterial indicators from urban drainage areas flowing into Mill Creek and Cucamonga Creek in San Bernardino County is currently being evaluated.

12. Consistent with Task 4.3, this Order requires the Permittees to revise the DAMP to incorporate the results of the USEP and/or other studies. The DAMP revisions shall include schedules for meeting the bacterial indicator WLAs based on the schedule established in the MSAR TMDLs and the results of the USEP and/or other studies. These revisions shall also provide a proposal and schedule for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the bacterial indicator WLAs for Urban Runoff by initiating a WLA pre-compliance evaluation monitoring program[15].

13. Pursuant to Task 4.5, the Permittees are required to revise the Water Quality Management Plan to incorporate BMPs as per the USEP, Task 4.1, for New Development and Significant Redevelopment Projects.

14. The Permittees are required to develop a CBRP to achieve compliance with the WLAs by the compliance dates. Periodic evaluation and update of the CBRP may be necessary based on a BMP effectiveness analysis to ensure compliance with the WLAs by the compliance dates.

15. Within the Permit Area, there are two watershed-wide MSAR TMDL monitoring stations (WW-S1 Santa Ana River Reach 3 at MWD Crossing and WW-S4 Santa Ana River Reach 3 at Pedley Avenue). The MSAR Permittees are required to comply with the numeric Bacterial Indicator targets at these monitoring locations by December 31, 2015 for the Dry Weather conditions (April 1 through October 31, as defined in the TMDL) and by December 31, 2025 for the Wet Weather conditions (November 1 through March 31, as defined by the TMDL).

16. In the absence of an approved CBRP, the WLAs become the final numeric WQBEL that must be achieved by the compliance dates.

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[15] Pre-compliance evaluation monitoring is monitoring conducted prior to the TMDL compliance date to assess the effectiveness of BMPs implemented in reducing pollutant(s) of concern by the compliance date.

17. On December 20, 2004, the Regional Board adopted Resolution R8-2004-0037 amending the Basin Plan to incorporate the Lake Elsinore and Canyon Lake Nutrient TMDLs. These TMDLs were subsequently approved by the State Board on May 19, 2005, by the Office of Administrative Law on July 26, 2005 and by the USEPA on September 30, 2005. These TMDLs include urban WLAs that are now incorporated into Chapter 5 of the Basin Plan. For both Canyon Lake and Lake Elsinore, the TMDLs specify causal numeric targets (nitrogen and phosphorus) and response numeric targets (chlorophyll *a*, dissolved oxygen and un-ionized ammonia). The TMDLs also specify nitrogen and phosphorus WLAs (point source discharges) and LAs (nonpoint source discharges) for each lake. Compliance with interim dissolved oxygen and chlorophyll a numeric targets is to be achieved by December 31, 2015. Compliance with the final numeric targets and WLAs and LAs is to be achieved by December 31, 2020. The LAs and WLAs are specified as 10-year running average.

18. The nitrogen and phosphorus WLAs and LAs for Canyon Lake are applicable to those discharges tributary to Canyon Lake. The nitrogen and phosphorus WLAs and LAs for Lake Elsinore apply to those areas downstream of Canyon Lake and to overflows from Canyon Lake.

19. TMDL Implementation Plans for each TMDL assign responsibilities to specific MS4 dischargers/stakeholders to identify sources of Impairment, to propose BMPs to address those sources, and to monitor, evaluate and revise BMPs based on monitoring results. Specific TMDL Implementation Plan tasks associated with Urban Runoff are described in Chapter 5 of the Basin Plan and are assigned to one or more of the Permittees. Requirements of the TMDL implementation plan tasks are incorporated into this Order and were proposed for inclusion in Chapter 13 of the DAMP (see 2007 ROWD). Several of these tasks are also jointly assigned to non-Permittee stakeholders. The Permittees have established TMDL Task Forces to jointly implement and coordinate those tasks.

20. To evaluate compliance with TMDL WLAs as per the Implementation Plans, the Permittees proposed to submit a Comprehensive Nutrient Reduction Plan to:

    a. Evaluate the effectiveness of BMPs and other control actions implemented; and

    b. Evaluate the progress towards compliance with the nutrient WLA for Urban Runoff.

21. The Canyon Lake and Lake Elsinore Nutrient TMDL Task Force (also referred to as the San Jacinto Watershed Urban Dischargers) members are tabulated below:

Table 6 - Canyon Lake and Lake Elsinore Nutrient TMDL Task Force

Riverside MS4 Permittees	Non-Permittees
Beaumont, City of	California Department of Fish and Game
Canyon Lake, City of	California Department of Transportation (Caltrans),
Hemet, City of	Eastern Municipal Water District
Lake Elsinore, City of	Elsinore Valley Municipal Water District
Moreno Valley, City of	U.S. Air Force (March Air Reserve Base), March Joint Powers Authority,
Murrieta, City of	U.S. Forest Service
Perris, City of	Western Riverside County Agricultural Coalition
San Jacinto, City of	
Riverside, City of	
Riverside, County of	
RCFC&WCD	

22. The cities of Menifee and Wildomar were recently incorporated and are responsible for compliance with the Canyon Lake and Lake Elsinore Nutrient TMDL requirements. They have the option to participate in the TMDL Task Force or comply with the TMDL requirements on their own.

23. Interim compliance (compliance determination prior to the final WLA compliance dates) determination with the WLAs in the TMDLs will be based on the Lake Elsinore and Canyon Lake (LE/CL) Permittees progress towards implementing the various TMDL Implementation Plan tasks as per the resultant studies and plans approved by the Regional Board. The CL/LE Permittees are required to develop a Comprehensive Nutrient Reduction Plan (CNRP) designed to achieve compliance with the WLAs by the final compliance date for approval of the Regional Board. In the absence of an approved CNRP, the WLAs specified in the approved Canyon Lake/Lake Elsinore Nutrient TMDL will constitute the final numeric WQBELs.

G. NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT – WQMP /LID

1. The California Constitution and Government Code provide the Co-Permittees planning policy powers that mandate that the Co-Permittees review and condition New Development consistent with the Subdivision Map Act, CEQA, and their respective general plans, ordinances, and resolutions to ensure the general public's health and safety. If these constitutional and statutory mandates are not properly implemented and local ordinances and resolutions are not properly enforced, there is a creditable potential that New Development could result in the discharge of Pollutants via Urban Runoff to the Waters of the U.S within the Permit Area.

2. Significant development has taken place in Riverside County in the last decade. These developments have resulted in the urbanization of many areas. Urbanization generally increases Urban Runoff volume and velocity of runoff and the amount of Pollutants in the runoff. As development occurs, natural vegetated

pervious ground cover is converted to impervious surfaces such as highways, streets, rooftops and parking lots. Natural vegetated soil can both absorb rainwater and remove Pollutants providing an effective natural purification process. In contrast, impervious surfaces can neither absorb water nor remove Pollutants, and the natural purification characteristics are lost. Additionally, urban development can significantly increase Pollutant loads as the increased population density causes proportionately higher levels of vehicle emissions, vehicle maintenance wastes, municipal sewage wastes, pesticide, household hazardous wastes, pet wastes, trash, and other Anthropogenic Pollutants.

3. Urbanization can especially threaten environmentally sensitive areas (ESAs) and stream geomorphology. ESAs typically have a much lower capacity to withstand Pollutant loads. In essence, development that is ordinarily insignificant in its impact on the environment may in a particular sensitive environment become significant. Designated ESAs are defined in the Glossary (Appendix 4).

4. Unmitigated high volumes and velocities of discharges from MS4 facilities associated with new development (which may include non-Urban Runoff) into natural watercourses can alter the natural rate of change of a stream and adversely impact aquatic ecosystems and stream habitat and cause stream bank erosion and physical modifications. These changes are the result of Hydromodification. Typically, Hydromodification especially impacts those natural streams in the developing foothills and in other urbanizing fringe portions of the Permit Area.

5. On October 5, 2000, the State Board adopted Order No. WQ-2000-11, which is a precedential order. Order No. WQ-2000-11 required that Urban Runoff generated by 85th percentile storm events from specific types of development categories be infiltrated, filtered or treated. The essential elements of this precedential order were incorporated into the 2002 MS4 Permit and are incorporated herein. In accordance with the requirements specified in the 2002 MS4 Permit, the Permittees developed a model WQMP and Template.

6. The WQMP and Template provide a framework to incorporate some of the watershed protection principles into the Co-Permittees' planning, construction and post-construction phases of New Development and Significant Redevelopment projects. The WQMP includes site design (including, where feasible, LID principles), Source Control and Treatment Control elements to reduce the discharge of Pollutants in Urban Runoff. On September 17, 2004, the Regional Board approved the WQMP. The Co-Permittees are requiring proponents of New Developments and Significant Redevelopments to develop and implement site-specific WQMPs. This Order requires Co-Permittees to continue requiring preliminary project-specific WQMPs as early as possible during the environmental review or planning phase (land use entitlement) and to review and approve final project-specific WQMP that is in substantial conformance with the preliminary

project-specific WQMP prior to the issuance of any building or grading permit. This Order also requires Co-Permittees to verify functionality of post-construction BMPs prior to issuance of certificate of occupancy and to track and ensure long term operation and maintenance of those BMPs as per the approved project-specific WQMPs.

7. An audit of each of the Pemittees' Urban Runoff management programs during the term of the 2002 MS4 Permit indicated no clear nexus between the watershed protection principles, including LID techniques specified in the WQMP and the Permittees' General Plan or related documents such as Development Standards, Zoning Codes, Conditions of Approval and Project Development Guidance. Existing procedures, ordinances, local codes, and development standards may be barriers to implementation of LID practices. This Order requires the Permittees to evaluate their General Plans, comprehensive or master plans, zoning codes, subdivision ordinances, project development standards, conditions of approval or related documents to determine whether the removal of any barriers, within their control, is feasible for implementation of LID techniques and other requirements of this Order. Where feasible, the Co-Permittees will make appropriate changes to remove barriers to implement LID techniques and other requirements of this Order.

8. This Order also requires the Permittees to review and enforce covenants, conditions and restrictions (CC&R) or develop other mechanisms to ensure proper long term operation and maintenance of post-construction BMPs.

9. In addition to addressing post-development water quality, the WQMP includes requirements to protect ESAs and address potential Hydromodification issues. Section 4.4 of the WQMP requires identification of Hydrologic Conditions of Concern (HCOC). An HCOC exists when a site's hydrologic regime is altered and there are significant impacts on downstream channels and aquatic habitats, alone or in conjunction with impacts of other projects. Currently, New Development and Significant Re-development projects are required to perform this assessment and incorporate appropriate BMPs to ensure existing hydrologic conditions are maintained. This Order requires the Permittees to implement LID techniques to minimize HCOC.

10. Management of the impacts of urbanization on water quality and stream stability in the Permit Area is more effective if the techniques are implemented at the project site, within the neighborhood and within each Co-Permittee's jurisdiction based on an overall watershed plan. The Permittees have identified Major Outfalls and have submitted maps of existing MS4 facilities. This Order requires the Permittees to expand upon the existing maps to include a map of its lined and unlined channels and streams within the Permit Area with the goal of identifying, prioritizing, and developing specific action plans for protecting those segments of streams that are vulnerable to development impacts.

11. This Order further requires the Permittees to develop a Watershed Action Plan that would address TMDL Implementation Plan BMP strategies and provide regional tools to address Hydromodification. The Permittees may choose to implement a single Watershed Action Plan for the entire Permit Area, or subdivide the Permit Area into sub-watersheds as appropriate to cost-effectively address TMDL requirements. The Watershed Action Plan integrates existing watershed based planning efforts and incorporates watershed tools to manage cumulative impacts of development on vulnerable streams, preserve structure and function of streams, and protect source, surface and groundwater quality and water supply in the permitted area. The Watershed Action Plan should integrate Hydromodification and water quality management strategies with land use planning policies, ordinances, and plans within each jurisdiction. Existing Permittee watershed planning efforts include the Western Riverside County Multiple Species Habitat Conservation Plan, Special Area Management Plan, Santa Ana and San Jacinto Integrated Regional Watershed Management Plans, Lake Elsinore and Canyon Lake and Middle Santa Ana River TMDL Task Forces, SCCWRP Hydromodification sensitivity mapping project, and various regional BMP evaluations being conducted by the Principal Permittee in conjunction with various water districts should be evaluated and incorporated into the Watershed Action Plan as necessary to address TMDL Implementation Plan requirements and Hydromodification. The regional efforts should be evaluated, and if necessary, enhanced to provide Permittees with the tools to integrate Hydromodification and TMDL management strategies with Permittee MS4 Permit compliance programs and land use planning policies, ordinances, and plans within appropriate Permittee jurisdictions within the Permit Area.

12. Pending completion of a Watershed Action Plan and implementing tools, management of the impacts of urbanization shall be accomplished on a per project and per jurisdiction basis through jurisdictional implementation of the watershed tools incorporated into the local general plans, ordinances and other requirements and the project-specific WQMPs.

13. The SMC in collaboration with SCCWRP and the California Storm Water Quality Association (CASQA) with funding from the State Water Resources Control Board and CASQA is developing a LID manual for Southern California. This manual will be incorporated into the CASQA BMP Handbooks. The Permittees are encouraged to utilize the LID manual as a resource to implement LID techniques once completed.

14. This Order requires the project proponents to first consider preventative and conservation techniques (e.g., preserve and protect natural features to the MEP) prior to considering mitigative techniques (Structural BMPs such as infiltration systems, or other Treatment Control BMPs). The mitigative measures should be

prioritized with the highest priority for BMPs that remove Pollutants in Urban Runoff and reduce the volume of Urban Runoff, such as infiltration, then other BMPs, such as harvesting and use, evapotranspiration and bio-treatment should be considered. Consistent with the MEP standard, these LID BMPs must be implemented at the project site. Consideration of "highest and best use" of the discharge should also be considered. For example, Lake Elsinore is evaporating faster than runoff from natural precipitation can recharge it. Requiring infiltration of 85% of runoff events for projects tributary to Lake Elsinore would only exacerbate current water quality problems associated with Pollutant concentration due to lake water evaporation. In cases where rainfall events have low potential to recharge Lake Elsinore (i.e. no hydraulic connection between groundwater to Lake Elsinore, or other factors), requiring infiltration of Urban Runoff from projects is counterproductive to the overall watershed goals. Project proponents, in these cases, would be allowed to discharge Urban Runoff, provided they used equally effective filtration-based BMPs. The Regional Board also recognizes that site conditions, including site soils, contaminant plumes, high groundwater levels, etc., could limit the applicability of infiltration and other LID BMPs at certain project sites. Where LID BMPs are not feasible or appropriate at the project site, more traditional, but equally effective BMPs (proprietary or non-proprietary) should be implemented. This Order provides for alternatives and in-lieu programs where preferred LID BMPs are infeasible or inappropriate. In addition, extra diligence should also be performed when proposing infiltration BMPs in areas where the proposed land use is often associated with soil and groundwater contamination. Pre-treatment of the water prior to infiltration is necessary in most cases. Proprietary treatment devices may be utilized when it is demonstrated that they meet or exceed the MEP standard.

15. The USEPA has determined that LID/green infrastructure can be a cost-effective and environmentally preferable approach for the control of storm water pollution and to minimize downstream impacts by mimicking pre-development hydrology. LID techniques promote the reduction of impervious areas which may achieve multiple environmental and economic benefits in addition to enhanced water quality and supply, stream and habitat protection, cleaner air, reduced urban temperature, increased energy efficiency and other community benefits such as aesthetics recreation, and wildlife areas. This Order incorporates a volume capture metric based on the design volume specified in the WQMP.

16. If not properly designed and maintained, Treatment Control BMPs could create a nuisance and/or habitat for vectors[16] (e.g., mosquitoes and rodents). The 2002 MS4 Permit required the Permittees to closely collaborate with the local vector

[16] Managing Mosquitoes in Storm water Treatment Devices, Marco E. Metzger, University of California Davis, Division of Agriculture and Natural Resources, Publication 8125.

control agencies during the development and implementation of such Treatment Control BMPs. The Permittees should continue these collaborative efforts with the vector control agencies to ensure that Treatment Control BMPs do not become a Nuisance or a potential source of Pollutants. The requirements specified in this Order include identification of responsible agencies for maintaining the Treatment Control BMPs and for providing funding for operation and maintenance.

17. If not properly designed and maintained, groundwater infiltration systems may adversely impact groundwater quality. Restrictions placed on Urban Runoff infiltration in this Order (Section XI.D.8) are based on recommendations provided by the USEPA Risk Reduction Laboratory. The Permittees should work closely with the water districts and water conservation districts to insure groundwater protection.

18. This Order incorporates new project categories and revised thresholds for several categories of new development and redevelopment projects that trigger the requirement for a WQMP. The 2008 National Research Council (NRC) report[17] indicates that roads and parking lots constitute as much as 70% of total impervious cover in ultra-urban landscape, and as much as 80% of the directly connected impervious cover. Roads tend to capture and export more storm water Pollutants than other impervious covers. As such, roads are included as a priority development category for which WQMPs are required. Private New Development and Significant Redevelopment projects incorporating roads typically allow road runoff to be addressed as part of the overall water quality strategy for the larger common plans of development. Permittee streets, roads and highways capital projects have special limitations. For example, the footprint of street, road and highway capital projects is often limited and may have hydraulic constraints due to lack of underground storm drain systems that would otherwise be necessary to hydraulically facilitate treatment of runoff. There are also limitations specified in state and federal design and code specifications that may limit or prohibit certain BMPs. Permittees may also be subject to flow diversion liability and limited road maintenance budgets and equipment. Street, road and highway projects that function as part of the MS4 also receive runoff and associated Pollutants from both existing urban areas and other external sources, including adjacent land use activities, aerial deposition, brake pad and tire wear and other sources that may be outside the Co-Permittee's authority to regulate and/or economic or technological ability to control. These offsite flows can overwhelm Treatment Control BMPs designed to address the footprint (consistent with the typical requirements for a WQMP) of street, road or highway capital projects incorporating curb and gutter as part of its storm water conveyance function. Despite these limitations, the Regional Board finds that Permittee construction of streets, roads and highway capital

[17] National Research Council Report (2008), http://www.nap.edu/catalog.php?record_id=12465

projects may provide an opportunity to address Pollutant loads from existing urban areas. However, due to the nature of the facilities and projects, it would be unduly burdensome for the Co-Permittees to maintain WQMP documents for transportation projects (in addition to Facility Pollution Prevention Plans and other overlapping requirements of this Order). The Permittees are therefore not required to prepare WQMP documents for street, road and highway capital projects, but instead are required to develop functionally equivalent documents that include site specific consideration utilizing BMP guidance to address street, roads and highway capital project runoff to the MEP.

19. The NRC report also indicates that there is a direct relationship between impervious cover and the biological condition of downstream receiving waters. The Permittees are required to address HCOC from New Development and Significant Redevelopment projects to minimize downstream impacts.

H. CO-PERMITTEE INSPECTION PROGRAMS

1. Each Co-Permittee conducts inspections of those Construction Sites for which it has issued either a grading or building permit to determine compliance with its ordinances, regulations, and codes, including its Storm Water Ordinance. Each Co-Permittee, consistent with its ordinances, rules and regulations, inspects each site for compliance with the conditions of approval governing the grading or building permit. These inspections have been expanded by the Co-Permittees to determine that sites requiring coverage under the General Construction Activity Storm Water Permit have obtained permit coverage by verifying that a Waste Discharge Identification (WDID) number has been issued by the State Board..

2. The DAMP addresses compliance strategies with regard to industrial and commercial facilities. As part of their Urban Runoff management activities, the Principal Permittee and the County entered into an agreement, dated August 10, 1999 by which they have developed and funded, in cooperation with the Riverside County Environmental Health Department, the "Compliance Assistance Program" (CAP) which includes a storm water survey component as part of existing inspections of hazardous material handlers and retail food service activities. The CAP consists of educational outreach to the inspected facilities and detailed storm water compliance surveys for each facility that must secure a hazardous materials permit for either storing, handling or generating such materials (there are approximately 5,500 facilities of which approximately 2,300 are inspected annually, and all facilities are inspected at least once during a two year cycle) and retail food facilities (there are approximately 6,750 facilities, all of which are inspected 1 to 3 times annually). Storm Water Compliance Surveys are conducted with each inspection of hazardous materials facilities, and at least once during the MS4 Permit term for restaurants. Restaurant inspectors are authorized to conduct

additional surveys if they observe an IC/ID or ordinance violation. The type of industrial/commercial establishment that is inspected includes, but is not limited to, automobile mechanical repair, maintenance, fueling, or cleaning operation, automobile or other vehicle body repair or painting operations, and painting or coating operations. Completed surveys that indicate non-compliance are forwarded to the appropriate Co-Permittee's enforcement division for follow up action. In addition, the cities of Corona and Riverside, which operate publicly owned treatment works (POTW), conduct annually on average, approximately 4,400 wastewater pre-treatment inspections, on a variety of industrial and commercial establishments within their respective jurisdictions, including, but not limited to, retail food establishments, car washes, and carpet, drape & furniture cleaning establishments. The Permittees have agreed to notify Regional Board staff when conditions are observed during such inspections that appear to be in violation of either the Storm Water General Permits or a permit issued by the Regional Board.

3. An evaluation of the Permittees' inspection programs during the 2002 MS4 Permit indicated a wide range of compliance and non-compliance with the Construction Cite and Industrial and Commercial Facilities inspection requirements. In many instances, the Construction Site and Facilities' return to compliance was not properly documented. This Order includes requirements for a more effective inspection program and includes a performance measure, time to return to compliance, as a metric for program effectiveness.

I. ILLICIT CONNECTIONS/ ILLEGAL DISCHARGES (IC/ID)

1. Illegal Discharges to the MS4 can contribute to contamination of Urban Runoff and other surface waters. During the term of the 1990 MS4 Permit, the underground MS4 facilities were inspected and only one Illicit Connection was identified. Open channels and other aboveground elements of the MS4 are inspected for evidence of Illegal Discharges as an element of routine maintenance by the Permittees. The Permittees also developed a program to prohibit IC/IDs to their MS4 facilities. Continued surveillance and enforcement of these programs are required to eliminate IC/IDs. The Permittees have a number of procedures in place to eliminate IC/IDs to the MS4, including Construction Site and Commercial, and Industrial Facility inspections, MS4 facility inspections, water quality monitoring and reporting programs, and public education.

2. The Permittees have the authority to control Pollutants in Urban Runoff, to prohibit IC/ID, to control spills, and to require compliance and carry out inspections of the MS4 facilities within their respective jurisdictions. The Co-Permittees have been extended necessary legal authority through California

statutes and local charters. Consistent with this statutory authority, each of the Co-Permittees have adopted their respective Storm Water Ordinances.

3. Even though the Permittees have established the authority and the procedures to detect and eliminate IC/IDs, audits conducted during the term of the 2002 MS4 Permit indicated that this program element is generally carried out passively through complaint response. IC/IDs are also detected through inspection programs and maintenance activities. Reports from maintenance inspectors are also typically logged as complaints. This Order requires each Permittee to revise this program element based on the Center for Watershed Protection's Illegal Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, or equivalent program.

J. TECHNOLOGY-BASED EFFLUENT LIMITATIONS (Not Applicable)

K. WATER QUALITY-BASED EFFLUENT LIMITATIONS (WQBELs) AND TMDL WLA

1. 40 CFR 122.44(d) requires that NPDES permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the Beneficial Uses of the Receiving Water. Where numeric water quality criteria have not been established, 40 CFR 122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. In *Defenders of Wildlife, et al* v. *Browner,* No. 98–71080 (9th Cir, October 1999), the Court held that the CWA does not require strict compliance with State Water Quality Standards for MS4 permits under section 301(b)(1)(C), but that at the same time, the CWA does give the permitting authority the discretion to incorporate appropriate WQBEL under another provision, CWA Section 402(p)(3)(B)(iii). The use of BMPs to control or abate the discharge of Pollutants is allowed by 40 CFR 122.44(k)(3) when Numeric Effluent Limitations are infeasible or when practices are reasonably necessary to achieve Effluent Limitations and standards or to carry out the purposes and intent of the CWA. The legislative history and the preamble to the federal storm water regulations indicate that the Congress and the USEPA were aware of the difficulties in regulating Urban Runoff solely through traditional end-of-pipe treatment. It is the Regional Board's intent to require the Permittees to implement BMPs consistent with the MEP standard in order to support attainment of Water Quality Standards. This Order includes Receiving Water Limitations based on Water Quality Objectives; it prohibits the creation of Nuisance and requires the reduction of Water Quality Standards Impairment in Receiving Waters. The Permit includes a procedure for determining whether Urban Runoff is causing or contributing to exceedances of Receiving Water Limitations and for evaluating whether the DAMP must be revised to include additional or more effective BMPs designed to meet

Water Quality Standards. The Order establishes an iterative process to determine compliance with the Receiving Water Limitations.

2. To support attainment of Water Quality Standards, consistent with the MEP standards, this Order aims to reduce the discharge of Pollutants in Urban Runoff from the MS4 by requiring Permittees to:
   a. Implement BMPs at Permittee facilities and activities,
   b. Require BMPs, including where appropriate, LID techniques, to be implemented at New Development and Significant Redevelopment project sites prior to accepting discharges into their MS4 facilities, where feasible,
   c. Implement and annually evaluate the DAMP and each Permittee's LIP for effectiveness in reducing Pollutants in Urban Runoff, and
   d. Determine if Urban Runoff is contributing to exceedances of Water Quality Objectives or Beneficial Uses in Receiving Waters by comparing outfall and receiving water monitoring results to: (1) Water Quality Objectives (WQOs), (2) California Toxic Rule (CTR), (3) USEPA Multi-Sector Permit Parameter Benchmark Values and (4) other appropriate data identified by the Permittees. The Permittees should also evaluate the Regional Monitoring reports prepared by SCCWRP to assess trends in Urban Runoff and Receiving Water quality within the Permit Area.
3. Federal regulations (40 CFR 122.44(d)(1)(vii)(B) require inclusion of Effluent Limits that are "consistent with the assumptions and requirements of any available WLA for the discharge prepared by the State and approved by USEPA." Consistent with this requirement, this Order includes interim effluent limits and a process for developing a BMP-based approach which, if adopted by the Regional Board prior to the compliance dates(s) specified in the associated comprehensive plan, shall become the final WQBEL(s). The Permittees are required to submit a comprehensive plan describing the proposed BMPs and the documentation demonstrating that the BMPs are expected to attain the WLAs by the compliance dates when implemented. If the Regional Board approves this comprehensive plan, this Order will be amended to include the comprehensive plan as the final WQBEL(s). If the Regional Board does not approve the comprehensive plan prior to the compliance date; the WLAs will become the final WQBEL(s) on the applicable compliance date and will remain in effect until a comprehensive plan is approved by the Regional Board. The comprehensive plan will be updated, as necessary, to reflect evaluations of the effectiveness of the BMPs, including evaluations presented in the annual reports.

4. These WQBELs are consistent with the assumptions and requirements identified in the TMDL Implementation Plans adopted with the TMDLs because the WQBELs are expected to be sufficient to meet the WLAs by the compliance dates. The

TMDLs within the Permit Area are described in Section F, above. These include the following:

a. MSAR Bacterial Indicator TMDL

i. The TMDL relies on this Order to implement the WLAs for Urban Runoff from the MSAR Permittees.

ii. This Order requires the MSAR Permittees to fully comply with the TMDL Implementation Plan. The TMDL Implementation Plan includes requirements for monitoring, and submittal of plans and schedules to implement short term solutions and develop long-term solutions to achieve TMDL compliance by the specified compliance dates.

iii. There are two components in the MSAR TMDL (fecal coliform and *E. coli*). The Basin Plan currently does not have an established objective for *E. coli*. The work that is currently being done by SWQSTF is expected to make recommendations for the adoption of *E. coli* objectives and revised WLAs based on *E.coli*. This Order incorporates the current WLAs as WQBELs. If the WLAs are revised, this Order will be reopened to incorporate the new WLAs.

iv. Upon adoption of this Order, the tasks identified in the MSAR TMDL Implementation Plan that have been developed by the MSAR Permittees and approved by the Regional Board become the interim Effluent Limits.

v. The MSAR Permittees are required to develop a Comprehensive Bacteria Reduction Plan(CBRP) designed to achieve WLAs by the compliance date. Once approved by the Regional Board, the CBRP becomes the final Effluent Limit. In the absence of an approved CBRP, the WLAs become the final numeric WQBEL by the compliance date specified in the TMDL.

b. Canyon Lake and Lake Elsinore Nutrient TMDLs

i. This Order is consistent with the Urban WLAs specified in the Canyon Lake and Lake Elsinore Nutrient TMDLs.

ii. Consistent with the TMDL Implementation Plan, this Order requires the LE/CL Permittees to identify sources of Impairment, propose BMPs to address those sources, and to monitor, evaluate and revise BMPs based on the monitoring results. Specific TMDL Implementation Plan tasks are described in Chapter 5 of the Basin Plan and are assigned to one or more of

the Permittees. Requirements of the TMDL Implementation Plan tasks are incorporated into this Order and Chapter 13 of the 2007 DAMP.

iii. In Chapter 13 of the 2007 DAMP submitted with the ROWD, the LE/CL Permittees have proposed BMP programs, consistent with the aforementioned TMDL Implementation Plan tasks.

iv. This Order also requires the LE/CL Permittees to monitor at representative Urban Runoff monitoring locations defined in the Consolidated Program for Water Quality Monitoring (CMP), (Phase 2 TMDL Monitoring is specified in the Lake Elsinore and Canyon Lake Nutrient TMDL Monitoring Plan dated February 15, 2006) and TMDL Implementation Plan and to evaluate the effectiveness of BMPs implemented in the Permit Area in reducing Pollutants of Concern in Urban Runoff to determine progress towards attainment of WLAs by the specified compliance date.

v. The Regional Board recognizes that additional research is needed to determine the most appropriate control mechanism to attain Water Quality Standards for nutrients in these two lakes. This Order provides the LE/CL Permittees the flexibility to meet the WLAs through a variety of techniques. Even though, the WLAs for the Canyon Lake and Lake Elsinore Nutrient TMDLs are expressed as WQBELs, if Water Quality Standards in the Lakes are met through biological or other in-Lake control mechanisms, the LE/CL Permittees' obligation to meet the WLAs is satisfied. as the impairment for which the TMDLs were developed would not exist anymore. The Permittees in the affected watersheds are required to develop a CNRP designed to achieve the WLAs by the compliance dates specified in the TMDL. In the absence of an approved CNRP, the WLAs become the final numeric WQBELs for nutrients.

L. WATER QUALITY CONTROL PLAN (BASIN PLAN)

1. The Regional Board adopted a revised Water Quality Control Plan for the Santa Ana River Basin (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates Beneficial Uses, establishes Water Quality Objectives, and contains implementation programs and policies to achieve those Water Quality Objectives for all waters in the Santa Ana Region addressed through the Basin Plan.

2. More recently, the Basin Plan was significantly amended to incorporate revised boundaries for groundwater subbasins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground

waters. This Basin Plan Amendment was adopted by the Regional Board on January 22, 2004. The State Board and the Office of Administrative Law (OAL) approved the amendment on September 30, 2004 and December 23, 2004, respectively. The USEPA approved the surface water standard and related provisions of the amendment on June 20, 2007.

3. TDS and TIN limitations in Table 4-1 of the Basin Plan are specified in this Order for Permittees' discharges subject to the De Minimus Permit. Where Dry Season flows are identified as part of the IC/ID program element, this Order also requires Permittees to establish their baseline discharge concentration for Dry Season conditions.

4. As discussed in Section K, WQBELs, and TMDL WLA, the Basin Plan has been amended to incorporate several TMDLs and TMDL Implementation Plans adopted for waterbodies within the Permit Area. In addition, the Basin Plan implements State Board Resolution 88-63, which established a state policy that all waters, with certain exceptions, are suitable or potentially suitable for municipal or domestic water supply. Thus, as discussed in detail in the Fact Sheet, Beneficial Uses recognized in the Basin Plan for Receiving Waters in the Permit Area are as follows:

    a. Municipal and Domestic Supply,
    b. Agricultural Supply,
    c. Industrial Service Supply,
    d. Industrial Process Supply,
    e. Groundwater Recharge,
    f. Hydropower Generation,
    g. Water Contact Recreation,
    h. Non-contact Water Recreation,
    i. Warm Freshwater Habitat,
    j. Limited Warm Freshwater Habitat,
    k. Cold Freshwater Habitat,
    l. Preservation of Biological Habitats of Special Significance,
    m. Wildlife Habitat,
    n. Rare, Threatened or Endangered Species, and
    o. Spawning, Reproduction, and Development

5. The existing and potential Beneficial Uses of groundwater that could be impaired by the discharge of Urban Runoff within the Permit Area include one or more of the following:

    a. Municipal and Domestic Supply,
    b. Agricultural Supply,
    c. Industrial Service Supply, and

d. Industrial Process Supply

6. The Basin Plan also incorporates by reference all State Board water quality control plans and policies including the 1990 Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the 1974 Water Quality Control Policy for Enclosed Bays and Estuaries of California (Enclosed Bays and Estuaries Policy). Water Quality Objectives specified in the Basin Plan are local numeric and narrative objectives that may be more stringent than the national or statewide water quality criteria.

M. NATIONAL TOXICS RULE (NTR) AND CALIFORNIA TOXICS RULE (CTR)

NTR and CTR are blanket water quality criteria that apply to all surface water discharges. However, the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* states that the Policy does not apply to regulation of storm water discharges. Regional Board believes that compliance with Water Quality Standards through implementation of BMPs is appropriate for regulating Urban Runoff. The USEPA articulated this position on the use of BMPs in storm water permits in the policy memorandum entitled, ‘‘Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits’’ (61 FR 43761, August 9, 1996).[18]

N. STATE IMPLEMENTATION POLICY (SIP)

See Section M, above.

O. COMPLIANCE SCHEDULES AND INTERIM REQUIREMENTS

The Basin Plan contains schedules for achieving compliance with WLAs for Bacterial Indicators in the MSAR watershed and nutrients in the San Jacinto watershed (Canyon Lake/Lake Elsinore). It is appropriate to require the CL/LE Permittees to comply with those time schedules for various deliverables as specified in the approved TMDL Implementation Plans. Consistent with the State Board’s Compliance Schedule Policy (Resolution No. 2008-0025), this Order incorporates interim and final Effluent Limits, where applicable. Additionally, since the TMDL compliance dates are outside the term of this MS4 Permit, it is also appropriate to require the Permittees to monitor and report the effectiveness of BMPs implemented in the Permit Area to evaluate progress towards attainment of WLAs by the time schedules specified in the adopted TMDLs. This Order includes the schedules for deliverables as part of the TMDL Implementation Plans as well as a requirement to monitor the effectiveness of BMPs in the Permit

[18] See discussions on Wet Weather Flows in the Federal Register/Vol. 65, No. 97/Thursday, May 18, 2000/Rules and Regulations

Area in reducing Pollutant discharges and to report progress towards compliance with the TMDL WLAs by the compliance dates.

P. ANTIDEGRADATION POLICY

40 CFR 131.12 requires that State Water Quality Standards include an antidegradation policy consistent with the federal policy. The State Board established California's antidegradation policy in Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet (see sections IV and V), the permitted discharges are consistent with the antidegradation provisions of 40 CFR 131.12 and State Board Resolution No. 68-16.

Q. ANTI-BACKSLIDING

Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require Effluent Limitations in a reissued NPDES permit to be as stringent as those in the previous permit, with some exceptions where Effluent Limitations may be relaxed. All Effluent Limitations in this Order are at least as stringent as the Effluent Limitations in the 2002 Order.

R. PUBLIC EDUCATION/PARTICIPATION

1. Public participation during the development of Urban Runoff management programs and implementation plans is necessary to ensure that all stakeholder interests and a variety of creative solutions are considered. In addition, the federal storm water regulations require public participation in the development and implementation of the Urban Runoff management program. As such, the Permittees are required to solicit and consider all comments received from the public and submit copies of the comments to the Executive Officer of the Regional Board with the Annual Reports. In response to public comments, the Permittees may modify reports, plans, or schedules prior to submittal to the Executive Officer.

2. There are Pollutants in Urban Runoff from privately owned and operated facilities such as residences, businesses and commercial establishments and public and private institutions. A successful NPDES MS4 permit program should include the participation and cooperation of public entities, private businesses, and public and private institutions. Therefore, public education is a critical element of the DAMP. As the population increases in the Permit Area, it will be even more important to

continue to educate the public regarding the impact of human activities on the quality of Urban Runoff.

3. In addition to the Regional Board, a number of other stakeholders are involved in the management of the water resources of the Region. These include, but are not limited to, the incorporated cities in the Region, POTWs, the three counties, and the Santa Ana Watershed Project Authority and its member agencies. The entities listed in Appendix 2 are considered as potential dischargers of Urban Runoff in the Permit Area. It is expected that these entities will also work cooperatively with the Permittees to manage Urban Runoff. The Regional Board, pursuant to 40 CFR 122.26(a), has the discretion and authority to require non-cooperating entities to participate in this Order or to issue individual MS4 permits. The Permittees may request the Regional Board to issue a separate NPDES Permit to any discharger into MS4 facilities they own or operate.

4. Cooperation and coordination among the stakeholders (regulators, Permittees, the public, and other entities) are critical to optimize the use of finite public resources and ensure economical management of water quality in the Region. Recognizing this fact, this Order focuses on integrated watershed management and seeks to integrate the programs of the stakeholders, especially the holders of the three MS4 permits within the Regional Board's jurisdiction.

5. Education is an important aspect of every effective Urban Runoff management program and the basis for changes in behavior at a societal level. Education of municipal planning, inspection, and maintenance department staff is especially critical to ensure that in-house staff understand how their activities impact water quality, how to accomplish their jobs while protecting water quality, and their specific roles and responsibilities for compliance with this Order. Public education, designed to target various urban land users and other audiences, is also essential to inform the public of how individual actions affect Receiving Water quality and how adverse effects can be minimized.

6. Some Urban Runoff issues, such as public education and training, can be effectively addressed on a regional or statewide basis. Regional approaches to Urban Runoff management can improve program consistency and promote sharing of resources, which can result in implementation of more efficient programs. In particular the counties of San Bernardino and Riverside and their collective municipalities are encouraged to cooperatively work together and generate a unified education and training program.

S. PERMITTEE FACILITIES AND ACTIVITIES

1. The Permittees own/operate facilities where industrial or related activities take place that may have an impact on Urban Runoff quality. Some of the Permittees

enter into contracts with outside parties to carry out activities that may also have an impact on Urban Runoff quality. These facilities and related activities include, but are not limited to, street sweeping, catch basin cleaning, maintenance yards, vehicle and equipment maintenance areas, waste transfer stations, corporation and storage yards, parks and recreational facilities, landscape and swimming pool maintenance activities, MS4 maintenance activities and the application of herbicides, algaecides and pesticides.

2. This Order requires continued implementation of BMPs intended to reduce Pollutant discharges from those Permittee activities/facilities that are found to be significant sources of Pollutants in Urban Runoff. This Order prohibits non-storm water discharges from facilities owned or operated by the Permittees unless the discharges are exempt under Section VI of this Order or are permitted by the Regional Board under an individual NPDES permit.

3. Program evaluations conducted during the term of the 2002 MS4 Permit indicated varying degrees of compliance/noncompliance at Permittee facilities and activities. This Order requires each Permittee to review its inventory of fixed facilities, field operations and drainage facilities to ensure that Permittee facilities do not cause or contribute to a Pollution or Nuisance in Receiving Waters. Permittee fixed public facilities and field operations are to be inspected annually.

T. MUNICIPAL CONSTRUCTION PROJECTS

1. The 2002 MS4 Permit authorized the discharge of storm water from construction activities on an acre or more, that are under ownership or direct responsibility of the Permittees. Permittees were required to notify the Regional Board prior to commencement of construction activities, and to comply with the latest Statewide General Construction Permit. Permittees were also required to develop a SWPPP and monitoring program specific to the Construction Site. Program evaluations conducted during the term of the 2002 MS4 Permit indicated that some Permittees were not submitting or were not aware of the requirement to submit a NOI and subsequent Notice of Termination (NOT) for Permittee Construction Sites. This Order continues the notification requirement.
2. This Order builds upon the requirement of the 2002 MS4 Permit by requiring Permittees to include post-construction BMP information for Permittee Construction Sites meeting WQMP and General Construction Permit criteria along with the NOT submitted to the Executive Officer upon completion of the construction activity. The NOT must include photographs of the completed project, a site map including structural post-construction BMP locations, long term operation and maintenance responsibility information, field verification report and copies of the final field verification reports required under Section XII.I. Permittees are required to develop

a database of post-construction BMPs per Section XII.K.4. for which they are responsible and reference this database in the LIPs.

3. Emergency Permittee public works projects required to protect public health and safety are exempted from these requirements, until the emergency ends, at which time they need to comply with the requirements.

U. MONITORING AND REPORTING

1. 40 CFR 122.48 requires that all NPDES permits specify requirements for monitoring and reporting. Sections 13267 and 13383 of the CWC authorize the Regional Board to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment 3, establishes monitoring and reporting requirements to implement federal and State requirements.

2. An effective monitoring program characterizes Urban Runoff, identifies problem areas, and determines the impact of Urban Runoff on receiving waters and the effectiveness of BMPs. The Principal Permittee administers the CMP for the Permittees. The CMP includes Wet and Dry Season monitoring of MS4 Outfalls and Receiving Waters throughout Riverside County.

3. The Regional Board recognizes the importance of watershed management efforts and regional planning and coordination in the development and implementation of programs and policies related to Receiving Water quality protection, including the Urban Runoff program and TMDL processes. In light of recent TMDLs that have been developed and the expectation of future TMDLs, this Order allows the Permittees to develop a Coordinated Watershed Monitoring Plan that shows the nexus among various Urban Runoff related monitoring programs that the Permittees are participating and the MS4 permit requirements including but not limited to WLA pre-compliance, BMP effectiveness, urban source and trend evaluation, Receiving Water quality and Hydromodification effects monitoring as part of the requirements of the Monitoring and Reporting Program.

4. Multiple entities, such as POTWs, MS4, CAFOs, and other permitted and non-permitted dischargers, discharge into the same water bodies. The discharges from these various sources could potentially affect the water quality of these water bodies even when these dischargers are complying with their discharge permits. Monitoring the Receiving Waters where these multiple types of discharges take place is necessary to determine these water bodies' compliance with Water Quality Objectives and their attainment of Beneficial Uses.

5. In the past, multiple entities have individually monitored the water bodies receiving their discharges to determine impacts to these waters from their discharges. The

monitoring has resulted in fragmented data that is inconsistent in quality, and that has potentially resulted in duplication of resources.

6. The SMC's "Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California", August 2004 Technical Report #419 indicated that "…the lack of mass emissions stations in the inland counties hampers their ability to estimate the proportional contribution of these inland areas to cumulative loads downstream." The SMC consists of representatives from the Counties of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego and the City of Long Beach. Consistent with this coordinated effort, this Order includes requirements for mass emissions monitoring.
7. Every two years, the Regional Board will assess readily available data to determine if the water bodies within its jurisdiction comply with the Water Quality Objectives and attain the assigned Beneficial Uses. The data reviewed for the assessment comes from sources such as municipalities, POTWs, individual public submittals, TMDL monitoring, and special studies. The data necessary for the assessment is of known and documented quality and generated under the auspices of a Quality Assurance Project Plan (QAPP). The data also is required to be statistically sufficient to assess if the water body is meeting Water Quality Objectives and to determine if water quality is declining over time.
8. A coordinated monitoring effort is needed for each sub-watershed in the Santa Ana Region that will provide statistically sufficient data. These data should be collected with appropriate quality control and quality assurance programs and should be made available in an electronic format to meet assessment objectives.
9. The Regional Board has identified sub-watersheds in the Santa Ana Region where potential duplication of effort is taking place. These sub-watersheds include: the Upper Santa Ana River watershed, MSAR watershed, Lower Santa Ana River watershed, and the San Jacinto River watershed.
10. Regional Board staff proposes to require the various entities discharging into the waterbodies in these sub-watersheds to coordinate monitoring efforts, prepare, submit for approval, and implement a watershed monitoring plan; a QAPP, and a data management, validation, verification mechanism in order to meet the assessment objectives.
11. Under the direction of the MS4 permittees, SCCWRP is coordinating a watershed monitoring effort in Southern California. The Santa Ana Region is included in their monitoring effort. This effort will potentially produce data that will meet the needs of the Regional Board in assessing water quality. This Order requires the Permittees to continue their participation in this regional effort.

V. STANDARD AND SPECIAL PROVISIONS

The dischargers must comply with all standard provisions and with those additional conditions that are applicable under Federal NPDES Regulations 40 CFR122.41 and 40 CFR 122.42.

W. NOTIFICATION OF INTERESTED PARTIES

The Regional Board has notified the dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet for this Order.

X. CONSIDERATION OF PUBLIC COMMENT

The Regional Board has notified the Permittees, all known interested parties, and the public of its intent to issue WDRs for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and the requirements of this Order. Details of the Public Hearing are provided in the Fact Sheet for this Order.

Y. ALASKA RULE

On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal Water Quality Standards become effective for CWA purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under the revised regulation (also known as the Alaska rule), USEPA must approve new and revised Water Quality Standards submitted to USEPA after May 30, 2000 before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

Z. COMPLIANCE WITH CZARA

The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), Section 6217(g), requires coastal states with approved coastal zone management programs to address Non-Point Source Pollution impacting or threatening coastal water quality. The CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and Hydromodification. This Order addresses the management measures required for the urban category. Compliance with requirements specified in this Order relieves the Permittees for developing a Non-Point Source Plan, for the urban category, under CZARA.

AA. NON-POINT SOURCE DISCHARGES

Consistent with the State Board's 2004 "Policy for the Implementation and

Enforcement of the Nonpoint Source Pollution Control Program," the Regional Board may issue WDRs for Non-Point Source (NPS) Pollutant discharges, such as agricultural irrigation runoff or return flows that are not subject to NPDES requirements, if identified as a significant source of Pollutants. In addition, if the water quality significance of Non-Point Source discharges is not clearly understood, the Regional Board may issue conditional waivers of WDRs to Non-Point Source dischargers, and require monitoring to gather the information necessary to effectively manage these discharges.

BB. STRINGENCY REQUIREMENTS FOR INDIVIDUAL POLLUTANTS. (N/A)

CC. FISCAL RESOURCES

California is experiencing a fiscal crisis unprecedented since the Great Depression. The November 2009 unemployment rate is 12.2 percent in California and 14.7 percent in Riverside County.[19] The seasonally adjusted national unemployment rate in November 2009 is at a 26-year high of 10.2 percent. The Federal Reserve projected that the national unemployment rate, currently at a 26-year high of 9.4 percent, will pass 10 percent by the end of the year. Most federal policymakers said it could take "five or six years" for the economy and the labor market to get back on a path of long-term health.[20] State and local governments are experiencing significant budgetary shortfalls and are reducing staffing and programs across the board. Given this economic environment, priority will be given to preserving the most essential elements of existing Urban Runoff programs and identifying and implementing strategies to improve the efficiency of existing programs in protecting Receiving Waters.

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[19] Employment Development Department, State of California, December 18, 2009. http://www.calmis.ca.gov/file/lfmonth/rive$pds.pdf
[20] http://www.msnbc.msn.com/id/31963779/ns/business-stocks_and_economy/

PERMIT REQUIREMENTS:

IT IS HEREBY ORDERED that the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the incorporated cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Menifee, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto, and Wildomar, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, and the provisions of the CWA, as amended, and the regulations and guidelines adopted there under, must comply with the following:

III. PERMITTEE RESPONSIBILITIES:

A. RESPONSIBILITIES OF THE PRINCIPAL PERMITTEE:

1. The Principal Permittee shall be responsible for managing the overall Urban Runoff program and shall:

   a. Coordinate revisions to the DAMP.

   b. Implement area-wide management programs, monitoring and reporting programs, and related plans as required by this Order.

   c. Coordinate chemical and biological water quality monitoring and any other monitoring as required by the Executive Officer.

   d. Prepare, coordinate the preparation of, and submit to the Executive Officer, those reports and programs necessary to comply with this Order.

   e. Provide staff support to the Management Steering Committee (Appendix 4, Glossary) to address Urban Runoff management policies for the Permit Area and coordinate the review, and necessary revisions to the DAMP and Implementation Agreement. The Management Steering Committee will continue to meet consistent with the requirements of Section XVII.D of this Order.

   f. Coordinate and conduct Technical Committee (Appendix 4) meetings consistent with the requirements of Section XVII.D of this Order. The Technical Committee will continue to direct the development of the DAMP and coordinate the implementation of the overall Urban Runoff program.

   g. Take the lead role in initiating and developing area-wide programs and activities necessary to comply with this Order.

h. Coordinate activities and participate in committees/subcommittees formed to comply with this Order.

i. Coordinate the implementation of this Order with the Regional Board and Co-Permittees, including the submittal of joint reports, plans, and programs as required under this Order.

j. Provide technical and administrative support to the Co-Permittees, including informing them of the status of known pertinent municipal programs, pilot projects, and research studies.

k. Coordinate with the Co-Permittees the implementation and necessary updates to Urban Runoff quality management programs, monitoring and reporting programs, implementation plans, public education, other Pollution Prevention measures, household Hazardous Waste collection, and BMPs outlined in the DAMP and take other actions consistent with the MEP standard.

l. Gather and disseminate information on the status of statewide Urban Runoff programs and evaluate the information for potential use in the execution of this Order. Hold workshops focused on Urban Runoff regulatory requirements, BMPs, and other related topics.

m. Compile information provided by the Co-Permittees and determine the effectiveness of the overall Urban Runoff program in attaining Receiving Water Quality Standards. This determination must include a comparative analysis of monitoring data to the applicable Water Quality Objectives for Receiving Waters as specified in Chapter 4 of the Basin Plan.

n. Solicit and coordinate public input for major changes to the Urban Runoff management programs and the implementation thereof.

o. Coordinate the development and implementation of procedures and performance standards, to assist in the consistent implementation of BMPs consistent with the MEP standard, as well as Urban Runoff management programs, among the Co-Permittees.

p. Participate in watershed management programs and regional and/or statewide monitoring and reporting programs.

q. In collaboration with the Co-Permittees, other MS4 Programs and/or CASQA, develop guidelines for defining expertise and competencies of storm water program managers and inspectors and develop and submit for approval a training program for various positions in accordance with these guidelines and Section XV of this Order.

r. Within 6 months of adoption of this Order, the Principal Permittee shall develop a library of BMP performance reports, and revise the library annually thereafter. At a minimum, obsolete performance reports should be removed and updated reports from the Permittees, CalTrans, CASQA, American Society of Civil Engineers or other appropriate sources that include more effective and proven BMPs should be added. The library may use national, statewide or regional reports. The purpose of this library is to facilitate the Permittees approval of BMPs, review and approval of WQMPs, etc.

s. Within 6 months of adoption of this Order, the Principal Permittee shall coordinate a review of the DAMP with the Co-Permittees to determine the need for update or revisions to ensure compliance with the requirements of this Order and establish a schedule for those revisions.

2. The activities of the Principal Permittee shall also include, but not be limited to, the following for MS4 owned or operated by the Principal Permittee:

a. To cause appropriate enforcement actions as necessary against IC/IDs to its MS4 to ensure compliance with Urban Runoff management programs, ordinances and implementation plans, including physical removal of Illicit Connections and prohibition of Illegal Discharges.

b. Ensure that applicants for encroachment permits for permanent connection to its MS4 facilities are notified in writing of their obligations to comply with Storm Water Ordinances, WQMP, and General Stormwater Permit requirements. The Principal Permittee shall make sure that encroachment activities within the limits of its rights-of-way comply with the General Construction Permit post construction standards. An encroachment project with a WQMP reviewed and approved by the Co-Permittee with jurisdictional authority may constitute compliance with the General Construction Permit post construction standards[21].

c. Conduct inspections and maintain the MS4 facilities over which it has jurisdiction.

d. Review and revise, if necessary, those agreements to which it is a party and those regulations and policies it deems necessary to provide adequate legal authority to maintain the MS4 facilities for which it has jurisdiction and to take those actions required of it by this Order and the federal Storm Water Regulations (see Section VIII);

[21] The State General Construction Permit Order No. 2009-0009-DWQ, Section XII

e. Monitor, document, and report that appropriate enforcement actions against Illegal Discharges to the MS4 facilities for which it has jurisdiction are taken and pursued as necessary to ensure compliance with Urban Runoff management programs, implementation plans, and regulations and policies, including physical elimination of IC/IDs (see Section IX);

f. Continue to respond or cause the appropriate entity or agency to respond to emergency situations such as accidental spills, leaks, and IC/IDs to prevent or reduce the discharge of Pollutants to its MS4 facilities and to the Receiving Waters (see Section XVI).

g. Track, monitor, and keep training records of all personnel involved in the implementation of the Principal Permittee's Urban Runoff management program.

B. RESPONSIBILITIES OF THE CO-PERMITTEES:

1. Each Co-Permittee shall complete a LIP, in conformance with Section IV of this Order and the approved LIP template.

2. Each Co-Permittee shall be responsible for managing the Urban Runoff program within its jurisdiction and shall:

   a. Maintain adequate legal authority to control the contribution of Pollutants to the MS4 and enforce those authorities.

   b. Conduct inspections of and maintain its MS4 facilities in accordance with the criteria developed pursuant to Section XIV.

   c. Continue to implement management programs, monitoring and reporting programs, appropriate BMPs listed in the DAMP and LIP, and related plans as required by this Order and take such other actions consistent with the MEP standard.

   d. Continue to seek sufficient funding for the area-wide Urban Runoff management plan, local Urban Runoff program management, Urban Runoff enforcement, public outreach and education activities and other Urban Runoff related program implementation.

   e. Continue to coordinate with other public agencies as appropriate, to facilitate the implementation of this Order and the DAMP/LIP.

   f. Ensure that applicants for encroachment permits for permanent connection to Permittee MS4 facilities are notified of their obligations to comply with Storm

Water Ordinances, WQMP, and the State General Construction Permit post construction standards. The Permittees shall enforce their Storm Water Ordinances to the extent of their legal authority. An encroachment project with a WQMP reviewed and approved by the Co-Permittee who owns the MS4 may constitute compliance with the General Construction Permit post construction standards[22].

g. Maintain up-to-date MS4 facility maps. Annually review these maps and if necessary, submit revised maps to the Principal Permittee with the information required for preparation of the Annual Report.

h. Prepare and submit to the Principal Permittee in a timely manner specific reports/information, related to the Co-Permittees' Urban Runoff management program, necessary to develop an Annual Report for submittal to the Executive Officer.

3. The Co-Permittees' activities shall include, but not be limited to, the following:

a. Participate in the Management Steering Committee and the Technical Committee meetings consistent with the requirements of Section XVII.D of this Order.

b. Conduct and coordinate with the Principal Permittee surveys and monitoring needed to identify Pollutant sources and drainage area characteristics within its jurisdiction. Where an Illegal Discharge crosses jurisdictional boundaries, to the extent feasible coordinate with neighboring jurisdictions to locate and end the Illegal Discharge.

c. Prepare and submit reports to the Principal Permittee to facilitate compilation of joint reports to the Regional Board in compliance with submittal deadlines.

d. Participate in the development and implementation of plans, strategies, management programs, monitoring and reporting programs that are proposed by the Principal Permittee, Technical Committee, or the Management Steering Committee to comply with this Order.

e. Participate in subcommittees formed by the Principal Permittee, Technical Committee, or the Management Steering Committee to comply with this Order.

[22] The State General Construction Permit Section XIII

f. Respond to or arrange for the appropriate entity or agency to respond to Emergency Situations such as accidental spills, leaks, IC/IDs, etc., to prevent or reduce the discharge of Pollutants to their MS4 facilities and the Receiving Waters.

g. Continue to pursue enforcement actions as necessary within its jurisdiction for violations of Storm Water Ordinances, and other elements of its Urban Runoff management program.

C. IMPLEMENTATION AGREEMENT

The Permittees shall allow any cities that were not signatories to the original Implementation Agreement but have been subsequently added to this Order to participate in the Implementation Agreement. The Permittees must annually review their Implementation Agreement and determine the need, if any, for additional revision. Beginning with the first Annual Report after adoption of this Order the Permittees must include the findings of this review and a schedule for any necessary revision(s) to the Implementation Agreement, if any. A copy of the signature page and any revisions to the Agreement shall be included in the Annual Report.

IV. LOCAL IMPLEMENTATION PLAN:

A. Within 6 months of adoption of this Order, the Permittees shall develop and submit for approval of the Executive Officer a LIP template. The LIP template shall be amended as the provisions of the DAMP are amended to address the requirements of this Order. The LIP template shall facilitate a description of the Co-Permittee's individual programs to implement the DAMP, including the organizational units responsible for implementation and identify positions responsible for Urban Runoff program implementation. The description shall specifically address:

1. Overall program management, including internal reporting requirements and procedures for communication and accountability;

   a. Interagency or interdepartmental agreements necessary to implement the Permittee's Urban Runoff program

   b. A summary of fiscal resources available to implement the Urban Runoff program;

   c. The ordinances, agreements, plans, policies, procedures and tools (e.g. checklists, forms, educational materials, etc.) used to execute the DAMP, including legal authorities and enforcement tools.

   d. Summarize procedures for maintaining databases required by the Permit;

   e. Describe internal procedures to ensure and promote accountability;

2. WQBELs to implement the TMDLs (Section VI.D);
3. Receiving Water Limitations (Section VII.D).
4. Legal authority/enforcement (Section VIII)
    a. Identify enforcement procedures, and
    b. Identify actions and procedures for tracking return to compliance;
5. Illicit Connections/Illegal Discharges (IC/ID); Litter, Debris and Trash Control (Section IX).

    The procedures and the staff positions responsible for different components of their IC/ID and Illegal Discharge Detection and Elimination (IDDE) Programs.
6. Sewage Spills, Infiltration into the MS4 Systems from Leaking Sanitary Sewer Lines, Septic System Failures, and Portable Toilet Discharges (Section X)

    A description of the interagency or interdepartmental sewer spill response coordination within each Permittee's jurisdiction.
7. Co-Permittee inspection programs(Section XI),
    a. Maintenance of Construction, Industrial, Commercial, and Post-Construction BMP databases;
    b. Procedures for incorporating erosion and sediment control BMPs into the permitting of Construction Sites (Section XI.B)
    c. Implementation of the Residential Program (Section XI.E.)
    d. Specify the verification procedure(s) and any tools utilized to verify that coverage under the General Construction Permit;
8. New Development (Including Significant Redevelopment) (Section XII)
    a. A list of discretionary maps and permits over which the Permittee has the authority to require WQMPs;
    b. Permittee procedures to implement the Hydromodification Management Plan.
    c. Permittee procedures and tools to implement the WQMP.(Sections XII.H, XII.I & XII.K)
    d. Permittee procedures for Municipal Road Projects (Section XII.F).
    e. A description of the credits programs or other in-lieu programs implemented (Section XII.G).
9. Public education and outreach (Section XIII)
10. Permittee Facilities and Activities (Section XIV)
    a. A description of the Permittee's MS4 facilities;
    b. At a minimum a list of facilities that include the following:

i. Parking facilities;

ii. Fire fighting training facilities;

iii. Facilities and activities discharging directly to environmentally sensitive areas such as 303(d) listed waterbodies or those with a RARE beneficial use designation;

iv. POTWs (including water and wastewater treatment plants) and sanitary sewage collection systems;

v. Solid waste transfer facilities;

vi. Land application sites;

vii. Corporate yards including maintenance and storage yards for materials, waste, equipment and vehicles;

viii. Household hazardous waste collection facilities;

ix. Municipal airfields;

x. Maintenance Facilities serving parks and recreation facilities;

xi. Special event venues following special events (festivals, sporting events);

xii. Other municipal areas and activities that the Permittee determines to be a potential source of Pollutants.

11. Compliance of Permittee Facilities and Activities with the General Construction Permit and De-Minimus Permit (Section XIV.G).

12. Training Program for Storm Water Managers, Planners, Inspectors and Municipal Contractors (Section XV);

    a. Training log forms

    b. Identify departments and positions requiring training

B. Within 12 months of approval of the LIP template, and amendments thereof, by the Executive Officer, each Permittee shall complete a LIP[23], in conformance with the LIP template. The LIP shall be signed by the principal executive officer or ranking elected official or their duly authorized representative pursuant to Section XX.M of this Order.

[23] As the Principal Permittee is not a general purpose government, some portions of the NPDES MS4 Program may not be applicable to it. The Principal Permittee should identify the basis for its exclusion from the applicable program elements in the appropriate LIP section.

C. Each Permittee shall annually review and evaluate the effectiveness of its Urban Runoff programs to determine the need for revisions to its LIP as necessary in compliance with Section VIII.H of this Order, and document revisions in the Annual Report.

V. DISCHARGE PROHIBITIONS:

A. In accordance with the requirements of 40 CFR 122.26(d)(2)(i)B) and 40 CFR 122.26(d)(2)(i)(F), the Permittees shall prohibit IC/IDs (see Appendix 4) from entering the MS4.

B. The discharge of Urban Runoff from the MS4 to Receiving Waters containing Pollutants, including trash and debris, that have not been reduced consistent with the MEP standard is prohibited.

C. Non-storm Water discharges from public agency activities into Waters of the US are prohibited unless the Non-storm Water discharges are permitted by a NPDES permit, granted a waiver, or as otherwise specified in Section VI, below.

D. Discharges from the MS4 shall be in compliance with the discharge prohibitions contained in Chapter 5 of the Basin Plan.

E. Discharges of Urban Runoff from the Permittee's MS4 shall not cause or contribute to a condition of Pollution, Contamination, or Nuisance (as defined in CWC Section 13050).

F. The discharge of any substances in concentrations toxic to animal or plant life is prohibited.

VI. EFFLUENT LIMITATIONS, DISCHARGE SPECIFICATIONS AND OTHER TMDL RELATED REQUIREMENTS

For purposes of this Order, a discharge may include storm water or other types of discharges identified below.

A. ALLOWED DISCHARGES:

The discharges identified need not be prohibited by the Permittees unless identified by the Permittees or the Executive Officer as a significant source of Pollutants. The DAMP shall include public education and outreach activities directed at reducing these discharges even if they are not substantial contributors of Pollutants to the MS4.

1. Discharges composed entirely of storm water;

2. Air conditioning condensate;
3. Irrigation water from agricultural sources ;
4. Discharges covered by a NPDES Permit, WDRs, or waivers issued by the Regional Board or State Board.
5. Discharges from landscape irrigation, lawn/garden watering and other irrigation waters. These shall be minimized through public education and water conservation efforts, as prescribed under this Order Section XI.E. Residential Program.
6. Passive foundation drains[24];
7. Passive footing drains[25];
8. Water from crawl space pumps[26];
9. Non-commercial vehicle washing,(e.g. residential car washing (excluding engine degreasing) and car washing fundraisers by non-profit organization);
10. Dechlorinated swimming pool discharges (cleaning wastewater and filter backwash shall not be discharged into the MS4 or to Waters of the US)
11. Diverted stream flows[27];
12. Rising ground waters[28] and natural springs;
13. Uncontaminated ground water infiltration as defined in 40 CFR 35.2005 (20) and uncontaminated pumped groundwater (as defined in Appendix 4, glossary),
14. Flows from riparian habitats and wetlands;
15. Emergency fire fighting flows (i.e., flows necessary for the protection of life and property do not require BMPs and need not be prohibited. However, appropriate BMPs to reduce the discharge of Pollutants to the MEP must be implemented when they do not interfere with health and safety issues [see also Appendix K of the DAMP]).
16. Waters not otherwise containing Wastes as defined in California Water Code Section 13050 (d), and
17. Other types of discharges identified and recommended by the Permittees and approved by the Regional Board.

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[24] Allowed discharges only if the source water drained from the foundation is storm water or uncontaminated groundwater. Discharges from contaminated groundwater may require coverage under the De Minimus Permit (Order No. R8-2009-0003, NPDES No. CAG998001) or General Groundwater Cleanup Permit (Order No. R8-2007-0008, NPDES Permit No CAG918001) or its latest version.

[25] See footnote 24, above.

[26] Allowed discharges only if the discharge is uncontaminated, otherwise permit coverage under the De Minimus Permit or Order No. 2006-0008-DWQ (NPDES No. CAG990002), General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Surface Waters (General Permit-Utility Vaults).

[27] Diversion of stream flows that encroach into Waters of the US requires a 404 permit from the US Army Corps of Engineers and a 401 Water Quality Certification from the Regional Board. Stream diversion that requires active pumping also requires coverage under the De Minimus Permit, Order No. R8-2009-0003.

[28] Discharge of rising ground water and natural springs into surface water is only allowed if groundwater is uncontaminated. Otherwise, coverage under the General Groundwater Cleanup Permit, Order No. R8-2007-0008 may be required.

When types of discharges listed above are identified as a significant source of Pollutants to Waters of the US, a Permittee must either: prohibit the discharge category from entering the MS4 or ensure that Source Control BMPs and Treatment Control BMPs are implemented to reduce or eliminate Pollutants resulting from the discharge. The Permittees shall evaluate the permitted discharges, as listed above to determine if any are a significant source of Pollutants to the MS4 and notify the Executive Officer if any are a significant source of Pollutants to the MS4.

B. DISCHARGE SPECIFICATIONS FOR DISCHARGES FROM PERMITTEE OWNED AND/OR OPERATED FACILITIES AND ACTIVITIES - DE-MINIMUS DISCHARGES[29] :

The following types of discharges from Permittee owned and/or operated facilities and activities are authorized by this Order provided they are in compliance with the terms and conditions of the General De Minimus Permit except that separate coverage under that permit is not required.

1. *Discharges from potable water sources, including water line flushing, superchlorinated water line flushing, fire hydrant system flushing, and hydrostatic test water from pipelines, tanks and vessels*: These discharges shall be dechlorinated to a concentration of 0.1 ppm[30] or less, pH adjusted if necessary, and volumetrically and velocity controlled to prevent re-suspension of sediments.

2. *Discharges from lawn, greenbelt and median watering and other irrigation runoff[31] from non-agricultural operations*: These discharges shall be minimized through requirements consistent with Section 5.3 of the DAMP and Section XIV of this Order.

3. *Dechlorinated swimming pool discharges:* Dechlorinated to a concentration of 0.1 ppm[32] or less, pH adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.

4. *Discharges from facilities that extract, treat and discharge water diverted from Waters of the US*: These discharges shall meet the following conditions:

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[29] General De Minimus Permit for Discharges to Surface Waters, Order NO. R8-2009-0003, NPDES No. CAG 998001 (General De Minimus Permit).

[30] Total residual chlorine = 0.1 mg/l or parts per million (ppm) or less; compliance determination shall be at a point before the discharge mixes with any Receiving Water.

[31] Non-agricultural irrigation using recycled water must comply with the statewide permit for Landscape Irrigation Using Recycled Water and the State Department Health guidelines.

[32] See footnote 30.

a. The discharges to Waters of the US must not contain Pollutants added by the treatment process or Pollutants in greater concentration than the influent;

b. The discharge must not cause or contribute to a condition of erosion;

c. Be in compliance with Section 401 of the CWA; and

d. Conduct monitoring in accordance with Section XIX of this Order.

5. *Construction dewatering wastes:* The maximum daily concentration limit for Total Suspended Solids (TSS) shall not exceed 75 mg/L; sulfides shall not exceed 0.4 mg/L; total petroleum hydrocarbons shall not exceed 0.1 mg/L; and oil and grease shall not exceed 15 mg/L.

6. *For all de-minimus type of discharges:* The pH of the discharge shall be within 6.5 to 8.5 pH units and there shall be no visible oil and grease in the discharge.

7. Table 4-1 of the Basin Plan incorporates TDS/TIN objectives for groundwater and surface waters within the Santa Ana Region. Permittees discharging to those Receiving Waters shall ensure compliance with the following for Dry Season conditions:

   a. For discharges to surface waters where groundwater will not be affected by the discharge, the maximum daily concentration (mg/L) of TDS and/or TIN of the effluent shall not exceed the Water Quality Objectives for the Receiving Water where the effluent is discharged, as specified in Table 4-1 of the Basin Plan[33].

   b. For discharges to surface waters where the groundwater will be affected by the discharge, the TDS and/or TIN concentrations of the effluent shall not exceed the Water Quality Objectives for the surface water where the effluent is discharged and the affected groundwater management zone, as specified in Table 4-1 of the Basin Plan. The more restrictive Water Quality Objectives shall govern. However, treated effluent exceeding the groundwater management zone Water Quality Objectives may be returned to the same management zone from which it was extracted without reduction of the TDS or TIN concentrations so long as the concentrations of those constituents are no greater than when the groundwater was first extracted. Incidental increases in the TDS and TIN concentrations (such as may occur during air stripping) of treated effluent will not be considered increases for the purposes of determining compliance with this discharge specification.

8. The Regional Board may add categories of Non-storm Water discharges that are not significant sources of Pollutants or remove categories of Non-storm Water discharges

[33] Resolution No. R8-2004-0001

listed above based upon a finding that the discharges are a significant source of Pollutants.

C. NON-POINT SOURCE (NPS) DISCHARGES:

The NPS discharges are being addressed through the Non-Point Source Program.

D. WATER QUALITY BASED EFFLUENT LIMITATIONS TO IMPLEMENT THE TOTAL MAXIMUM DAILY LOADS (TMDLs)

1. The MIDDLE SANTA ANA RIVER (MSAR) WATERSHED BACTERIA INDICATOR TMDL

Interim WQBELs (effective upon adoption of this Order)

a. The MSAR Permittees[34] as part of the MSAR Task Force (Table 5) shall:

i. Continue to implement the watershed-wide water quality monitoring program (including any future amendments thereto) approved by the Regional Board (Resolution No. R8-2007-0046) as per Task 3 of the MSAR TMDL Implementation Plan.

ii. Submit reports summarizing all relevant data from the MSAR watershed-wide water quality monitoring program. Beginning in 2010, the cool (or wet) season report is due to the Executive Officer by May 31st of each year (for monitoring conducted from November 1st through March 31st) and the warm (dry) season report is due to the Executive Officer by December 31st of each year (for monitoring conducted from April 1st through October 31st).

iii. Submit comprehensive reports every three years summarizing the data collected for the preceding 3 year period and evaluating progress towards achieving the Urban WLA by the dates specified in the TMDL. The first report is due to the Executive Officer on February 15, 2010.

iv. Continue to implement the approved (Regional Board Resolution No. R8-2008-0044) USEP developed as per Task 4.1 of the MSAR TMDL Implementation Plan. The USEP must describe the specific methods that will be used to identify urban sources, strategies, and BMPs to address

[34] Riverside County MS4 Permittees in the MSAR watershed (County of Riverside, and the Cities of Corona, Norco, Riverside are collectively referred to as the "MSAR Permittees")

those sources. Submit semi-annual reports on January 31st and July 31st of each year as required under the approved USEP, and any amendments thereto. In years where the comprehensive report referenced in VI.D.1.a.iii above is due on February 15, the comprehensive report, Dry Season report (Due December 31st) and the January 31st USEP reports may be combined into a single submittal due February 15th

v. Revise the DAMP as specified in Task 4.3 of the MSAR-TMDL Implementation Plan. Summarize any such revisions in the annual report due to the Executive Officer by November 30 of each year.

vi. Revise the WQMP as specified in Task 4.5 of the MSAR TMDL Implementation Plan. Summarize any such revisions in the Annual Report due to the Executive Officer by November 30 of each year.

vii. Amend the LIP to be consistent with the revised DAMP and WQMPs within 90 days after said revisions are approved by the Regional Board. Summarize any such LIP amendments in the Annual Report due to the Executive Officer by November 30 of each year.

Final WQBELs for MSAR Bacterial Indicator TMDL under Dry Season Conditions

b. The final WQBELs for Bacterial Indicators during the Dry Season shall be achieved by December 31, 2015. These final Effluent Limits shall be considered effective for enforcement purposes on January 1, 2016.

c. The Final WQBELs for MSAR Bacterial Indicator TMDL during the Dry Season shall be developed and implemented in the following manner:

i. The MSAR Permittees shall prepare for approval by the Regional Board a Comprehensive Bacteria Reduction Plan (CBRP) describing, in detail, the specific actions that have been taken or will be taken to achieve compliance with the Urban WLA during the Dry Season (April 1st through October 31st) by December 31, 2015. The CBRP must include:

(1) The specific ordinance(s) adopted to reduce the concentration of Bacterial Indicator in urban sources.

(2) The specific BMPs implemented to reduce the concentration of Bacterial Indicator from urban sources and the water quality improvements expected to result from these BMPs.

(3) The specific inspection criteria used to identify and manage the urban sources most likely causing exceedances of Water Quality Objectives for Bacterial Indicators.

(4) The specific regional treatment facilities and the locations where such facilities will be built to reduce the levels of Bacterial Indicator discharged from urban sources and the expected water quality improvements to result when the facilities are complete.

(5) The scientific and technical documentation used to conclude that the CBRP, once fully implemented, is expected to achieve compliance with the Urban WLA for Bacterial Indicator by December 31, 2015.

(6) A detailed schedule for implementing the CBRP. The schedule must identify discrete milestones to assess satisfactory progress toward meeting the Urban WLA during the Dry Season by December 31, 2015. The schedule must also indicate which agency or agencies are responsible for meeting each milestone.

(7) The specific metric(s) that will be established to demonstrate the effectiveness of the CBRP and acceptable progress toward meeting the Urban WLA for Bacterial Indicator by December 31, 2015.

(8) The DAMP, WQMP and LIPs shall be revised consistent with the CBRP no more than 180 days after the CBRP is approved by the Regional Board.

(9) Detailed descriptions of any additional BMPs planned, and the time required to implement those BMPs, in the event that data from the watershed-wide water quality monitoring program indicate that Water Quality Objectives for Bacterial Indicator are still being exceeded after the CBRP is fully implemented.

(10) A schedule for developing a CBRP needed to comply with the Urban WLA for Bacterial Indicator during the Wet Season (November 1st thru March 31st) to achieve compliance by December 31, 2025.

ii. The draft CBRP must be submitted to the Regional Board by December 31, 2010. The Permittees may submit the plan individually, jointly or through a collaborative effort with other urban dischargers such as the existing MSAR-TMDL Task Force. Regional Board staff will review the draft CBRP and recommend necessary revisions no more than 90 days after receiving the draft CBRP. The MSAR Permittees must submit the final version of the CBRP no more than 90 days after receiving the comments from Regional

Board staff. The Regional Board will schedule a public hearing to consider approving the CBRP, as a final WQBEL for the Dry Season Urban WLA, no more than 120 days after the final plan is submitted by the MSAR Permittees. In approving the CBRP as the final WQBELs, the Regional Board shall find that the CBRP, when fully implemented, shall achieve the Urban WLA for Bacterial Indicator by December 31, 2015.

iii. Once approved by the Regional Board, the CBRP shall be incorporated into this Order as the final WQBELs for Bacterial Indicator for the Dry Season. Based on BMP effectiveness analysis, the CBRP shall be updated, if necessary. The updated CBRP shall be implemented upon approval by the Regional Board.

d. Should the process set forth in Section VI.D.1.c, above not be completed by January 1, 2016, then the Urban WLA for the Dry Season specified in the MSAR-TMDL shall become the final numeric WQBELs for Bacterial Indicator in the Dry Season as follows:

i. WLA for Fecal Coliform from Urban Sources for the Dry Season (April 1st through October 31st)[35]
5-sample/30-day logarithmic mean less than 180 organisms/100mL and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.

ii. WLA for *E. Coli* from Urban Sources for the Dry Season (April 1st through October 31st)[36]
5-sample/30-day logarithmic mean less than 113 organisms/100 mL and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.

Final WQBELs for Bacterial Indicator during the Wet Season (effective Jan. 1, 2026)

In the event this Order is still in effect on December 31, 2025, and the Regional Board has not adopted alternative final WQBEL during the Wet Season by that date, then the Urban WLAs specified in the MSAR TMDL for the Wet Season

[35] 5-sample/30-day logarithmic mean less than 180 organisms/100mL and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.

[36] 5-sample/30-day logarithmic mean less than 113 organisms/100 mL and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.

(November 1st through March 31st) will automatically become the final numeric WQBEL for the MSAR Permittees on January 1, 2026.

2. **LAKE ELSINORE/CANYON LAKE (SAN JACINTO WATERSHED) NUTRIENT TMDLS**

   Interim WQBELS:

   a. *Lake Elsinore In-Lake Sediment Nutrient Reduction Plan:* Pursuant to Resolution No. R8-2007-0083, or as amended by subsequent adopted Regional Board resolutions, each LE/CL Permittee shall continue to implement the approved strategy for reducing in-lake sediment nutrient loads as summarized in Table 7, below:

Table 7 - Lake Elsinore In-lake Sediment Nutrient Reduction Strategy

Lake Elsinore In-lake Sediment Reduction Strategy Task	Due Date
Submit Phase 2 Alternatives	December 31, 2010*
Submit O&M Agreement for Fishery Management Program	December 31, 2010*
Submit O&M Agreement for Aeration and Mixing Systems	December 31, 2010*
Submit Phase 2 Projects Plans	June 30, 2011*
Complete Phase 2 Project Implementation	December 31, 2014
Implement in-lake and watershed monitoring programs	Annual reports due August 31 every year.

*Within 60 days of receipt of comments from Regional Board staff, Permittees shall submit a final revised plan that will be acceptable for adoption by the Regional Board, unless otherwise directed by the Executive Officer.

   b. Lake Elsinore/Canyon Lake Model Update Plan*:* Pursuant to Resolution No. R8-2007-0083, or as amended by subsequent adopted Regional Board resolutions, each LE/CL Permittee shall continue to implement the Model Update Plan as per the schedule summarized Table 8 below: The Model Update Plan shall specify how the Permittees will determine compliance with the WLAs.

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Table 8 - Lake Elsinore/Canyon Lake Model Update Plan

Model Update Task	Due Date
Linkage Analysis Study	August 31, 2010
Watershed Source Loading Study	August 31, 2010
Model Evaluation	December 31, 2010
Construct/Calibrate Model	June 30, 2011
Conduct Model Scenarios	August 31, 2011
Model Update Final Report	November 30, 2011

c. Revise the DAMP, WQMP and LIPs as necessary to implement the interim WQBEL compliance plans submitted pursuant to paragraph a and b of this section and summarize all such revisions in the Annual Report.

Final WQBELs (Effective December 31, 2020)

d. To achieve compliance with TMDL WLAs as per the TMDL Implementation Plans, the LE/CL Permittees shall submit a Comprehensive Nutrient Reduction Plan (CNRP) by December 31, 2011 describing, in detail, the specific actions that have been taken or will be taken to achieve compliance with the urban WLA by December 31, 2020. The CNRP must include the following:

i. Evaluation of the effectiveness of BMPs and other control actions implemented. This evaluation shall include the following:

(a) The specific ordinance(s) adopted or proposed for adoption to reduce the concentration of nutrient in urban sources.

(b) The specific BMPs implemented to reduce the concentration of urban nutrient sources and the water quality improvements expected to result from these BMPs.

(c) The specific inspection criteria used to identify and manage the urban sources most likely causing exceedances of water quality objectives for nutrients.

(d) The specific regional treatment facilities and the locations where such facilities will be built to reduce the concentration of nutrient discharged from urban sources and the expected water quality improvements to result when the facilities are complete.

and

ii. Proposed method for evaluating progress towards compliance with the nutrient WLA for Urban Runoff. The progress evaluation shall include:

(a) The scientific and technical documentation used to conclude that the CNRP, once fully implemented, is expected to achieve compliance with the urban waste load allocation for nutrient by December 31, 2020.

(b) A detailed schedule for implementing the CNRP. The schedule must identify discrete milestones decision points and alternative analyses necessary to assess satisfactory progress toward meeting the urban waste load allocations for nutrient by December 31, 2020. The schedule must also indicate which agency or agencies are responsible for meeting each milestone.

(c) The specific metric(s) that will be established to demonstrate the effectiveness of the CNRP and acceptable progress toward meeting the urban waste load allocations for nutrient by December 31, 2020.

(d) The DAMP, WQMP and LIPs shall be revised consistent with the CNRP no more than 180 days after the CNRP is approved by the Regional Board.

(e) Detailed descriptions of any additional BMPs planned, and the time required to implement those BMPs, in the event that data from the watershed-wide water quality monitoring program indicate that water quality objectives for nutrient are still being exceeded after the CNRP is fully implemented.

e. The draft CNRP must be submitted to the Regional Board by December 31, 2011. The LE/CL Permittees may submit the plan individually, jointly or through a collaborative effort with other urban dischargers such as the existing LE/CLTMDL Task Force. Regional Board staff will review the document and recommend necessary revisions no more than 90 days after receiving the draft plan. The LE/CL Permittees must submit the final version of the plan no more than 90 days after receiving the comments from Regional Board staff. The Regional Board will schedule a public hearing to consider approving the CNRP, as a final water quality-based effluent limitation for the Nutrient WLA, no more than 90 days after the final plan is submitted by the LE/CL Permittees. In approving the CNRP as the final WQBELs, the Regional Board shall make a finding that the CNRP, when fully implemented, shall achieve the urban WLA for nutrient by December 31, 2020; and,

f. Once approved by the Regional Board, the CNRP shall be incorporated into this Order as the final WQBELs for LE/CL Nutrient TMDL. Based on BMP effectiveness analysis, the CNRP shall be updated, if necessary. The updated CNRP shall be implemented upon approval by the Regional Board.

g. Compliance with the WLA is based on a 10-year running average. Hence, data collection consistent with the approved Phase 2 LE/CL TMDL monitoring program required in the Monitoring and Reporting Program must commence by December 31, 2010[37].

h. A summary of all relevant data from water quality monitoring programs shall be submitted in the Annual Report. This will include an evaluation of compliance with the LE/CL TMDL by reporting the effectiveness of the BMPs implemented in the watershed to control nutrient inputs into the lake from Urban Runoff pursuant to Regional Board Resolution No. R8-2006-0031 and R8-2007-0083, or as amended by subsequent Regional Board adopted resolutions.

i. The DAMP, WQMP and LIPs shall be revised as necessary to implement the plans submitted pursuant to paragraph a through h of this section and summarize all such revisions in the Annual Report.

j. In the event that the Regional Board has not adopted alternative final WQBELs, in accordance with Section VI.D.2.d., above, by December 31, 2020, the Urban WLAs specified in Tables 9 and 10, below, shall automatically become the final numeric WQBELs for the LE/CL Permittees to be achieved by December 31, 2020. These final Effluent Limits shall be considered effective for enforcement purposes on January 1, 2021.

Table 9 - Canyon Lake Nitrogen and Phosphorus Waste Load and Load Allocations[a]

Canyon Lake Nutrient TMDL	Final Total Phosphorus Waste Load Allocation (kg/yr)[b, c]	Final TN Waste Load Allocation (kg/yr) [b, c]
Urban	306 (675 lbs/yr)	3,974 (8763 lbs/yr)
Septic systems	139 (306 lbs/yr)	4,850 (10692 lbs/yr)

[a] The WLAs for Canyon Lake apply to those land uses located upstream of Canyon Lake.

[b] Final WLA compliance to be achieved by December 31, 2020.

[c] TMDL and WLA specified as 10-year running average.

Table 10 - Lake Elsinore Nitrogen and Phosphorus Waste Load and Load Allocations[a]

[37] Resolution No. R8-2004-0037 requires initiation of the Phase 2 watershed-wide Wet Season monitoring upon completion of the Phase 1 in-lake monitoring program. Regional Board staff is currently in discussion with LE/CL TMDL Task Force regarding this transition and are expected to identify reductions in Phase 1 monitoring program that will offset the costs of the enhanced Phase 2 program.

Lake Elsinore Nutrient TMDL	Final Total Phosphorus WLA (kg/yr)[b, c]	Final TN WLA (kg/yr)[c, d]
Urban	124 (273.3 lbs/yr)	349 (769.4 lbs/yr)
Septic systems	69 (152 lbs/yr)	608 (1340 lbs/yr)

[a] The Lake Elsinore TMDL WLAs for septic systems only apply to those land uses located downstream of Canyon Lake.

[b] Final compliance to be achieved by December 31, 2020.

[c] TMDL and WLA specified as 10-year running average.

[d] WLA for supplemental water should be met as a 5 year running average by December 31, 2020.

[e] WLA for Canyon Lake overflows

k. The LE/CL Permittees may demonstrate compliance with the WLAs using either of the following two methods:

i. Directly, using relevant monitoring data and approved and approved modeling procedures to estimate actual nitrogen and phosphorus loads being discharged to the lakes, or,

ii. Indirectly, using water quality monitoring data and other biological metrics approved by the Regional Board, to show Water Quality Standards are being consistently attained (as measured by the response targets identified in the LE/CL TMDL).

l. The TMDLs explicitly support the trading of pollutant allocations among sources to the extent that such allocation tradeoffs optimize point and non-point source control strategies to achieve the WQBELs in the most efficient manner.

VII. RECEIVING WATER LIMITATIONS

A. Urban Runoff discharges from the Permittees' MS4 shall not cause or contribute to exceedances of Receiving Water Quality Standards (as defined by Beneficial Uses and Water Quality Objectives in Chapter 4 of the Basin Plan) for surface waters or ground waters.

B. The DAMP and its components, including the LIPs, must be designed to achieve compliance with Receiving Water Limitations associated with discharges of Urban Runoff to the MEP. It is expected that compliance with Receiving Water Limitations will be achieved through an iterative process and the application of increasingly more effective BMPs.

C. The Permittees shall comply with Section V.B and VII.A of this Order, through timely implementation of control measures and other actions to reduce Pollutants in Urban Runoff in accordance with the DAMP and other requirements of this Order, including modifications thereto.

D. If exceedances of Water Quality Standards persist notwithstanding implementation of the DAMP and other requirements of this Order, the Permittees shall assure compliance with Sections V.B and VII.A of this Order, by complying with the following procedure:

1. Upon a determination by either the Permittees or the Executive Officer that the discharges from the MS4 are causing or contributing to an exceedance of an applicable Water Quality Standard, the Permittees shall:

   a. Promptly, within two (2) working days, provide oral or e-mail and thereafter submit a report to the Executive Officer that describes the BMPs that are currently being implemented and the additional BMPs that will be implemented to prevent or reduce those Pollutants that are causing or contributing to the exceedance of the applicable Receiving Water Quality Standards.

   b. The report may be incorporated in the annual update to the DAMP, unless the Executive Officer directs an earlier submittal.

   c. The report shall include an implementation schedule.

   d. The Executive Officer may require modifications to the report.

   e. Submit any modifications to the report required by the Executive Officer within 30 days of notification;

2. Within 30 days following approval by the Executive Officer of the report described above, the Permittees shall revise the DAMP, applicable LIPs, and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required;

3. Implement the revised DAMP, applicable LIPs and monitoring program in accordance with the approved schedule.

4. If the exceedance is solely due to discharges to the MS4 from activities or areas outside the Permittees jurisdiction or control, the Permittees must, within two (2) working days of becoming aware of the situation, provide oral or e-mail notice to the Executive Officer of the determination of the exceedance and provide written documentation of these discharges to the Executive Officer within ten (10) calendar days of becoming aware of the situation.

5. So long as the Permittees have complied with the procedures set forth above and are implementing the revised LIP, DAMP, and monitoring program, the Permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same Receiving Water Limitation unless the Executive Officer determines it is necessary to develop additional BMPs

6. Nothing in Section VII.D prevents the Regional Board from enforcing any provision of this Order while the Permittee prepares and implements the above report.

VIII. LEGAL AUTHORITY/ENFORCEMENT

A. The Permittees shall maintain adequate legal authority to control the discharge of Pollutants to the MS4 from Urban Runoff and enforce those authorities. This may be accomplished through ordinance, statute, permit, contract or similar means. Such legal authority must address all IC/IDs into the MS4, including those from residential, commercial, industrial and construction sites. The Permittees shall use the enforcement guidelines developed in Section 3.4 and 4.5 of the DAMP or develop their own enforcement program and shall incorporate the enforcement program into their LIP. Such legal authority must also at a minimum include and authorize the Permittees to:

1. Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with their ordinances and permits. The Permittee must have authority, to the extent permitted by California and federal Law and subject to the limitations on municipal action under the constitutions of California and the United States, to enter, monitor, inspect, and gather evidence (pictures, videos, samples, documents, etc.) from residential, industrial, commercial, and construction sites discharging into the MS4 within the limits of its statutory authority. The Permittees shall progressively and decisively take enforcement actions against any violators of the Storm Water Ordinance. These enforcement actions must, at minimum, meet the guidelines and procedures listed in Sections 3.4 and 4.5 of the DAMP.

2. Control the contribution of Pollutants to the MS4;

3. Stop Pollutant discharge or threat of discharge if a discharger is unable or unwilling to correct significant non-compliance where there is a serious threat to public health or the environment;

4. Require the use of BMPs to prevent or reduce the discharge of Pollutants into MS4 consistent with the MEP standard.

5. Require documentation on the effectiveness of BMPs implemented to reduce the discharge of Pollutants to the MS4; and

6. The Co-Permittees' Storm Water Ordinances or other local regulatory mechanisms shall include sanctions to ensure compliance. Sanctions shall include but are not limited to: oral and/or written warnings, notice of violation or non-compliance, administrative compliance orders, stop work or cease and desist order, a civil citation or injunction, the imposition of monetary penalties or criminal prosecution (infraction or misdemeanor). These sanctions shall be issued in a decisive manner within a predetermined timeframe, from the time of the violation's occurrence and/or follow-up inspection.

B. The Co-Permittees shall take progressive and decisive enforcement actions against violators of their Storm Water Codes and Ordinances, in accordance with the federal storm water regulations (40CFR, Part 122.26(d)(2)(I)(A-F)), and adopted/established guidelines and procedures as described in Section 3.4 of the DAMP. The Co-Permittees shall consider the time to return to compliance as one measure of effectiveness of their Storm Water Ordinances or enforcement response procedure. The Co-Permittees shall document these actions in their records (including electronic databases as outlined in the DAMP) and Annual Reports. The Co-Permittees shall use their authority to bring dischargers into immediate compliance with enforcement actions.

C. Within three (3) years of adoption of this Order, the Co-Permittees shall promulgate and implement ordinances that would control known pathogen or Bacterial Indicator sources such as animal wastes, if necessary.

D. The Co-Permittees shall continue to provide notification to the Executive Officer of storm water related information obtained during site inspections of construction and industrial sites regulated by the General Storm Water Permits and of sites that should be regulated under the General Storm Water Permits. The notification should include perceived violations of the General Storm Water Permits or local requirements, prior history of violations of the Permittee's Storm Water Ordinance, enforcement actions related to the Storm Water Ordinance taken by the Permittee, and other relevant information. In addition, Sections XVI.B of this Order addresses additional notification requirements for construction, industrial and commercial sites not covered under the General Storm Water Permits. Notification shall not prevent or delay the Co-Permittees from independently taking appropriate actions to bring Construction Sites and Industrial Facilities into compliance with their local ordinances, rules, regulations and WQMP.

E. The Permittees are encouraged to enter into interagency agreements with owners of other MS4, such as CalTrans, school and college districts, universities, Department of Defense, Native American Tribes, etc., to control the contribution of Pollutants into their

MS4 from the non-Permittee MS4. The Regional Board will continue to notify the owner/operator of the MS4 systems and the Permittee if the Board issues a permit for discharges into the MS4.

F. The Co-Permittees shall annually review their Storm Water Ordinances and provide findings within the Annual Report on the effectiveness of these ordinances and enforcement programs in prohibiting the following types of discharges to the MS4 (the Co-Permittees may propose appropriate BMPs in lieu of prohibiting these discharges, where the Co-Permittees are responsible for ensuring that dischargers adequately maintain those BMPs):

1. Sewage, where a Co-Permittee operates the sewage collection system (also prohibited under the Statewide SSO Order[38]);
2. Wash water resulting from the hosing or cleaning of gas stations, auto repair garages, and other types of automobile service stations;
3. Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility, including motor vehicles, concrete mixing equipment, portable toilet servicing, etc.;
4. Wash water from mobile auto detailing and washing, steam and pressure cleaning, carpet/upholstery cleaning, pool cleaning and other such mobile commercial and industrial activities;
5. Water from cleaning of municipal, industrial, and commercial sites, including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, etc.;
6. Runoff from material storage areas or uncovered receptacles that contain chemicals, fuels, grease, oil, or other Hazardous Materials[39];
7. Discharges of runoff from the washing of hazardous material from paved or unpaved areas;
8. Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; pool filter backwash containing debris and chlorine;
9. Pet waste, yard waste, litter, debris, sediment, etc.; and,
10. Restaurant or food processing facility wastes such as grease, floor mat and trash bin wash water, food waste, etc.

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[38] State Board WQO No. 2006-0003.

[39] Hazardous material is defined as any substrate that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity. These also include materials named by EPA to be reported if a designed quantity of the material is spilled into the waters of the United States or emitted into the environment.

G. Within 24 months after Order adoption, each Co-Permittee shall submit a certification statement, signed by its legal counsel, that the Co-Permittee has obtained all necessary legal authority in accordance with 40 CFR 122.26(d)(2)(i) (A-F) and to comply with this Order through adoption of ordinances and/or municipal code modifications. A copy of the certification shall also be placed in the LIP.

H. Annually thereafter, Permittees shall evaluate the effectiveness of implementation and enforcement response procedures with respect to the above items. The findings of these reviews, along with recommended corrective actions, where appropriate, and schedules shall be submitted as part of the Annual Report for the corresponding reporting period. The LIP shall be updated accordingly.

IX. ILLICIT CONNECTIONS/ILLEGAL DISCHARGES (IC/ID); LITTER, DEBRIS AND TRASH CONTROL

A. Consistent with each Co-Permittees statutory authority, the Co-Permittees have adopted Storm Water Ordinances. The Co-Permittees must continue to prohibit IC/IDs to the MS4 through their Storm Water Ordinances and the Principal Permittee must do so through its statutory authority. In addition, the Permittees must continue to implement and improve routine inspection and monitoring and reporting programs for their MS4 facilities. If routine inspections or Dry Season monitoring indicate IC/IDs, they must be investigated and eliminated or permitted within sixty (60) calendar days of receipt of notice by its staff or from a third party.

B. The Permittees upon being put on notice by staff or a third party must immediately (within 24 hours of receipt of notice by its staff or from a third Party) investigate all spills, leaks, and/or other illegal discharges to the MS4. Based upon their assessment and as specified below, the Permittees must provide notifications and reporting as described in Section 4 of the DAMP and Section XVI of this Order.

C. The Permittees shall control Illegal Dumping that may result in a discharge of Pollutants to the MS4 to the MEP. The Permittees shall describe their procedures and authorities for managing Illegal Dumping in their LIP.

D. Within 18 months of adoption of this Order, the Permittees shall review and revise their IC/ID program to include a pro-active IDDE using the Guidance Manual for Illicit Discharge, Detection, and Elimination by the Center for Watershed Protection[40] or any

[40] USEPA (Illicit Discharge Detection and Elimination - A Guidance Manual for Program Development and Technical Assessments) by the Center for Watershed Protection and Robert Pitt, University of Alabama, October 2004, updated 2005).

other equivalent program consistent with Section IX.E below. The result of this review shall be reported in the Annual Report and include a description of the Permittees' revised pro-active program, procedures and schedules. The LIP shall be updated accordingly.

E. The Permittees' revised IC/ID programs shall specify an IDDE program for each Co-Permittee to individually, or in combination:

   a. Develop an inventory and map of Permittee MS4 facilities and Outfalls to Receiving Waters.

   b. Develop a schedule to be submitted within 18 months to conduct and implement systematic investigations of MS4 open channels and Major Outfalls.

   c. Use field indicators to identify potential Illegal Discharges, if applicable;

   d. Track Illegal Discharges to their sources[41] where feasible; and

   e. Educate the public about Illegal Discharges and Pollution Prevention where problems are found.

F. The Permittees shall continue to integrate IC/ID detection and elimination into their inspection programs, training of Permittee staff, and monitoring data collection and other indicator data.

G. The Permittees shall annually review and evaluate their IC/ID program, including litter/trash BMPs, to determine if the program needs to be adjusted. Findings of the review and evaluation shall be submitted with the Annual Report.

H. The Permittees shall maintain a database summarizing IC/ID incident response (including IC/IDs detected as part of field monitoring activities). This information shall be updated on an ongoing basis and submitted with the Annual Report.

I. The Permittees shall control, consistent with the MEP standard, Illegal Discharges (including the discharge of spills, leaks, or dumping of any materials other than storm water and authorized non-storm water) into the MS4. All reports of Illegal Discharge shall be promptly investigated and reported as specified in Section XVI (Notification Requirements).

J. In the 2004-2005 Annual Report, the Permittees characterized trash, determined its main source(s) and developed and implemented appropriate BMPs to reduce and/or to eliminate the discharge of trash and debris to Waters of the US to the MEP. The BMPs should be continued and their effectiveness must be reported in the Annual Report.

K. Where non-jurisdictional IC/IDs within a Permittees jurisdiction are identified, the Permittees will notify the responsible party and the Executive Officer of the discharge.

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[41] Table 2: Land uses, Generating Sites and Activities that Produce Indirect Discharges from IDDE, A Guidance Manual for Program Development and Technical Assessments, October 2004 CWP.

X. SEWAGE SPILLS, INFILTRATION INTO THE MS4 SYSTEMS FROM LEAKING SANITARY SEWER LINES, SEPTIC SYSTEM FAILURES, AND PORTABLE TOILET DISCHARGES

A. The Permittees shall continue to provide local sanitation districts 24-hour access to the MS4 to address sewage spills. The Permittees shall continue to work cooperatively with the local sewer agencies to determine and control the impact of infiltration from leaking sanitary sewer systems on Urban Runoff quality. Each Permittee shall implement control measures necessary to minimize infiltration of seepage from sanitary sewers to the MS4 through routine preventative maintenance of the MS4.

B. Each Permittee shall continue to cooperate and coordinate with the sewage collection/treatment agencies as described in Appendix I of the DAMP to swiftly respond to and contain sewage spills that may discharge into its MS4. Management and/or preventive measures shall continue to be implemented for sources including portable toilets, failing septic systems, and failing private laterals that may cause or contribute to Urban Runoff Pollution problems in Permittee jurisdictions.

C. Permittees who are regulated under the SSO Order No. 2006-0003-DWQ, shall continue to comply with that Order to control sanitary system overflows.

D. Permittees with septic systems in their jurisdiction shall maintain the inventory of septic systems within its jurisdiction completed in 2008. Updates to the inventory will be maintained by County Environmental Health via a database of new septic systems approved since 2008.

XI. CO-PERMITTEE INSPECTION PROGRAMS

The Permittee inspection programs are outlined in Sections 7 and 8 of the DAMP and describe some of the minimum inspection and enforcement procedures utilizing existing inspection programs, provides criteria for characterizing the significance of violations, criteria for prioritizing violations, appropriate response actions corresponding to the priority of violations and identifies the hierarchy of enforcement/compliance responses. Section 3.4 of the DAMP provides a framework to standardize the implementation and enforcement by the Co-Permittees of their respective Storm Water Ordinances. The Co-Permittees shall continue to enforce their respective Storm Water Ordinances consistent with the DAMP and this Order.

A. GENERAL REQUIREMENTS

1. The Co-Permittees shall continue to maintain and update a database inventory of all active Construction Sites, and Industrial and Commercial Facilities within their jurisdiction consistent with the database requirements of Section 7 and 8 of the DAMP. Construction Sites and Industrial and Commercial Facilities shall be

included in the database inventories regardless of whether the Construction Sites or Commercial and Industrial Facilities are subject to the General Construction Permit or the General Industrial Permit or other individual NPDES permit or WDRs.

2. The Co-Permittee inspection database inventory described in Section XI.A.1 shall be maintained in an electronic database format that may be made available to the Regional Board upon request (e.g. request via phone call, e-mail, letter, etc,). The database inventory must be consistent with the requirements of Sections 7 and 8 of the DAMP. Supporting paper (or electronic) files shall also be maintained and made available upon Regional Board request. Supporting files should include a record of inspection dates, the results of each inspection, photographs (if any), video (if any) and a summary of any enforcement actions taken. The inventory databases shall be updated on an annual basis and an electronic copy shall be provided with each Annual Report.
3. The Co-Permittee shall not issue an occupancy permit to an Industrial Facility or other license authorizing the facility to operate, unless the applicant is informed of the General Industrial Permit and that it may have to secure coverage under the General Industrial Permit. The Co-Permittees shall verify during Industrial Facility inspections whether a site has obtained necessary permit coverage under the General Industrial Permit.
4. If the Industrial Facility's SIC code falls under the mandatory category the Co-Permittee shall notify the Regional Board and the applicant that they may be required to obtain coverage under the General Industrial Permit.
5. Permits for Construction Sites shall not be granted until appropriate coverage under the General Construction Permit (s) is verified.
6. Perceived Non-filers for the General Storm Water Permits shall be reported consistent with Section XVI.E.
7. If a Co-Permittee receives notice by its staff or from a third party of a non-Emergency Situation representing a possible violation of the General Storm Water Permit or other permit issued by the State or Regional Board to an Industrial Facility or Construction Site, the Co-Permittee shall, within two (2) working days, provide oral or e-mail notice to Regional Board staff of the location within its jurisdiction where the incident occurred and describe the nature of the incident. After notifying the Regional Board, no further action is necessary regarding the General Storm Water Permits. However, each Co-Permittee shall take appropriate actions to bring an Industrial Facility or Construction Site into compliance with its Storm Water Ordinances.
8. The Co-Permittees need not inspect facilities already inspected by Regional Board staff if the inspection was conducted within the specified time period. Regional

Board staff inspection information is available at www.ciwqs.ca.gov[42].

9. Each Co-Permittee shall respond to complaints received from third parties regarding Construction Sites and Industrial and Commercial Facilities in a timely manner to ensure that the sites are not a source of Pollutants to the MS4 and the Receiving Waters.
10. The Co-Permittees shall enforce their Storm Water Ordinances and permits at all Construction Sites and Industrial, and Commercial Facilities in a fair, firm and consistent manner. Sanctions for non-compliance as required under Section VIII (Legal Authority/Enforcement) shall be deemed adequate to bring the site into compliance with their Storm Water Ordinances and permits.
11. Each Co-Permittee shall document, evaluate and annually report the effectiveness of its enforcement procedures in achieving prompt and timely compliance with inspection programs. Sanctions for non-compliance shall be adequate to bring the site into compliance and to stop the Pollutant discharge consistent with the requirements of Section VIII of this Order.
12. The Principal Permittee and the County have implemented the CAP. Through the Riverside County Department of Environmental Health, the CAP addresses storm water compliance issues at restaurant facilities and businesses that must have a hazardous material permit for either storing, handling or generating hazardous materials. As described in Section 8 of the DAMP, the Permittees must either participate in the CAP or implement an equivalent inspection program. The cities of Corona and Riverside maintain such programs through their respective POTW pre-treatment programs that may be supplemented by the activities of the Department of Environmental Health during routine inspections. The County is establishing a stand-alone NPDES Storm water Compliance Inspection and Enforcement Program (CIEP) for Industrial and Commercial Facilities in the unincorporated areas of the County.
13. Where inspections and/or enforcement required by this Order are carried out on behalf of the Co-Permittee by other agencies or departments such as the County Department of Environmental Health, county and local fire departments, hazardous materials programs, code enforcement, industrial pretreatment, and building and safety, the Co-Permittee shall monitor and annually evaluate and report adequacy of program coverage and enforcement response in complying with this Order.
14. All inspectors shall be trained in accordance with Section XV.

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[42] To obtain access to the State database, registration at the following link is necessary: http://www.waterboards.ca.gov/water_issues/programs/ciwqs/chc_npdes.shtml. Contact information is available at http://www.waterboards.ca.gov/water_issues/programs/ciwqs/contactus.shtml.

B. CONSTRUCTION SITES

1. Each Co-Permittee shall include in the electronic database identified in Section XI.A.2 an inventory of all Construction Sites within its jurisdiction for which building or grading permits have been issued and activities at the site include: soil movement; uncovered storage of materials or wastes, such as dirt, sand or fertilizer; or exterior mixing of cementaceous products, such as concrete, mortar or stucco.

2. Each Permittee shall continue to prioritize Construction Sites within its jurisdiction as a high, medium or low threat to water quality. Evaluation of construction sites shall be based on factors, which shall include but not be limited to: soil erosion potential, project size, proximity and sensitivity of Receiving Waters and any other relevant factors. At a minimum, high priority Construction Sites shall include: sites disturbing 50 acres and greater; sites disturbing over 1 acre with Direct Discharge to Receiving Waters with CWA Section 303(d) listed waters for sediment or turbidity impairments; site specific characteristics[43] ; and any other relevant factor. At a minimum, medium priority construction sites shall include: sites disturbing between 10 to less than 50 acres of disturbed soil.

3. Each Permittee shall conduct Construction Site inspections for compliance with its ordinances (grading, WQMPs, etc.) and local permits (building, grading, etc.). The Permittees shall develop a checklist for conducting Construction Site inspections. Inspections of Construction Sites shall include, but not be limited to:

    a. Verification of coverage under the General Construction Permit (PRDs or Waste Discharge Identification Number [WDID]) during the initial inspection. As Permittees become aware of changes in ownership, they shall notify Regional Board staff.

    b. Ensure that the BMPs implemented on-site are effective for the appropriate phase of construction (preliminary stage, mass grading stage, streets and utilities stage etc.).

    c. Visual observations for Illegal Discharges, potential Illicit Connections, and potential Pollutant sources.

    d. Implementation and maintenance of BMPs required under local requirements.

    e. An assessment of the effectiveness of BMPs implemented at the site and the need for any additional BMPs.

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[43] The recently adopted General Construction Permit Order No. 2009-0009-DWQ includes risk-based characterization of construction sites based on site-specific conditions.

4. At a minimum, the inspection frequency shall include the following:

   a. During the Wet Season (October 1 through May 31 of each year), all high priority Construction Sites are to be inspected, in their entirety, once a month. All medium priority Construction Sites are to be inspected at least twice during the Wet Season. All low priority Construction Sites are to be inspected at least once during the Wet Season. Construction Sites that disturb less than one acre may be inspected on an as needed basis. When BMPs or BMP maintenance is deemed inadequate or out of compliance, an inspection frequency of at least once per week should be maintained until BMPs and BMP maintenance are brought into compliance.

   b. During the Dry Season (June 1 through September 30 of each year), all Construction Sites shall be inspected at a frequency sufficient to ensure that sediment and other Pollutants are properly controlled and that unauthorized, Non-storm Water discharges are prevented.

C. INDUSTRIAL FACILITIES

1. To establish priorities for inspection, the Permittees shall continue to prioritize Industrial Facilities within their jurisdiction as a high, medium, or low threat to water quality. Continual evaluation of these Industrial Facilities should be based on such factors as type of industrial activities (i.e., SIC codes), materials or wastes used or stored outside, Pollutant discharge potential, compliance history, facility size, proximity and sensitivity of Receiving Waters and any other relevant factors described in Section 8 of the DAMP. At a minimum, a high priority shall be assigned to: Industrial Facilities subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA); Industrial Facilities that handle or generate Pollutants for which the receiving water is impaired, facilities that have a significant potential to release pre-production plastics or nurdles into the environment, and Industrial Facilities with a high potential for or history of unauthorized, Non-storm Water discharges.
2. Each Co-Permittee shall conduct Industrial Facility inspections for compliance with its ordinances, permits and this Order. Industrial Facility inspections shall be consistent with Section 8 of the DAMP. If an inspection indicates the need for follow-up, Co-Permittee follow-up inspections shall include a review of the Industrial Facility's material and waste handling and storage practices, written documentation of Pollutant control BMP implementation and maintenance procedures, digital photographic documentation of water quality violations as well as evidence of past or present unauthorized, Non-storm Water discharges and enforcement actions issued at the time of the Co-Permittee inspection. Report of inspections shall be included in the Annual Report and shall provide the basis for downgrading or upgrading priority ranking of Industrial Facilities.

3. All high priority Industrial Facilities are to be inspected at least once a year; all medium priority Industrial Facilities are to be inspected at least once every two years; and all low priority Industrial Facilities are to be inspected at least once during the term of this Order. In the event that inappropriate material or waste handling or storage practices are observed, or unauthorized, non-storm water discharges are observed, an enforcement order shall be issued and a re-inspection frequency adequate to bring the Industrial Facility into compliance must be maintained (at a minimum, once a month or within the compliance schedule prescribed by the Co-Permittee in a written notice to the discharger). Once compliance is achieved, a minimum inspection frequency of once every six months should be maintained for the annual reporting period.
4. Each Co-Permittee shall continually identify undocumented Industrial Facilities within its jurisdiction and shall add them to the database, as identified in Section XI.A.2. Additionally, each Industrial Facility shall be listed as per the criteria in specified in Section XI.C.1 within 15 days from the initial date of discovery of the Industrial Facility.
5. Each Permittee shall require Industrial Facilities to implement source control and pollution prevention measures consistent with the requirements of Section 8.of the DAMP.

D. COMMERCIAL FACILITIES

1. Each Permittee shall continue to implement the CAP or equivalent, pursuant to Section 8. of the DAMP and Section XI.A.9 (complaints) of this Order; Section 8 shall be modified to clarify the types of facilities specifically addressed by the CAP. Within 18 months, the Co-Permittees shall also identify any facilities that transport, store or transfer pre-production plastic pellets and managed turf facilities (e.g. private golf courses, athletic fields, cemeteries, and private parks) within their jurisdiction and determine if these facilities warrant additional inspection to protect water quality.
    2. The Permittees shall continue to develop BMPs applicable for each of the Commercial Facilities described in Section 8 of the DAMP.
    3. The Co-Permittees shall continue to prioritize Commercial Facilities within their jurisdiction as a high, medium, or low threat to water quality based on such factors as the type, magnitude, and location of the commercial activity, proximity and sensitivity of Receiving Waters, potential for discharge of Pollutants to the MS4, Commercial Facilities that handle or generate Pollutants for which the Receiving Water is Impaired, frequency of inspections and facilities with a high potential for or history of unauthorized, Non-storm Water discharges.
    4. All high priority Commercial Facilities shall be inspected at least once per year; all medium priority Commercial Facilities shall be inspected at least every two years; and all low priority Commercial Facilities shall be inspected at least once during the

term of this Order. At a minimum, each Commercial Facility shall be required to implement source control and pollution prevention BMPs consistent with the requirements of Section 8 of the DAMP. Co-Permittee follow-up inspections should include a review of BMPs implemented, their effectiveness and maintenance; written and photographic documentation of materials and waste handling and storage practices; evidence of past or present unauthorized, Non-storm Water discharges; and an assessment of management/employees awareness of storm water pollution prevention measures.

5. In the event that inappropriate material or waste handling or storage practices are observed, or there is evidence of past or present unauthorized, Non-storm Water discharges, a written enforcement order shall be issued at the time of the initial inspection for CAP equivalent inspection programs or at the time of the CAP follow-up inspection, to bring the Commercial Facility into compliance.
6. Within 18 months of adoption of this Order, the Co-Permittee shall notify all mobile businesses based within their jurisdiction concerning the minimum Source Control and Pollution Prevention BMPs that they must develop and implement. For purposes of this Order, mobile businesses include: mobile auto washing/detailing; equipment washing/cleaning; carpet, drape, furniture cleaning; and mobile high pressure or steam cleaning activities that are based out of a Co-Permittee's jurisdiction. The mobile businesses shall be required to implement appropriate BMPs within 3 months of being notified by the Co-Permittees. The Co-Permittees shall also notify mobile businesses discovered operating within their jurisdiction.
7. Within 24 months of adoption of this Order, the Co-Permittees shall develop an enforcement strategy to address mobile businesses.
8. The Co-Permittees should continue to maintain the CAP restaurant inspection program, or equivalent. Inspections for Commercial Facilities with restaurants shall, at a minimum, address:
    a. Oil and grease disposal to verify that these wastes are not poured onto a parking lots, streets or adjacent catch basins;
    b. Trash bin areas, to verify that these areas are clean, the bin lids are closed, the bins are not used for liquid waste disposal and wash water from the bins is not disposed of into the MS4;
    c. Parking lot, alley, sidewalk and street areas to verify that floor mats, filters and garbage containers are not washed in those areas and that no wash water is disposed of in those areas;
    d. Parking lot areas to verify that they are cleaned by sweeping, not by hosing down, and that the facility operator uses dry methods for spill cleanup; and,
    e. Violations of the Storm Water Ordinance shall be enforced by the jurisdictional Co-Permittee.

E. RESIDENTIAL PROGRAM

1. Within 18 months of adoption of this Order, each Co-Permittee shall develop and implement a residential program consistent with these requirements to reduce the discharge of Pollutants from residential activities to the MS4, consistent with the MEP standard.
2. The Co-Permittees shall identify residential activities that are potential sources of Pollutants and develop and/or enhance Fact Sheets/BMPs as appropriate. At a minimum, this should include: residential auto washing and maintenance activities; use and disposal of pesticides, herbicides, fertilizers and household cleaners; and collection and disposal of pet wastes. The Permittees shall distribute the Fact Sheets/BMPs and appropriate information from organizations such as the Riverside-Corona Resource Conservation District[44] and USDA's Backyard Conservation Program[45] to the residents to ensure that discharges from the residential areas are not causing or contributing to a violation of Water Quality Standards in the Receiving Waters.
3. The Co-Permittees, collectively or individually, shall facilitate the proper collection and management of used oil, toxic and hazardous materials, and other household wastes. The Permittees should continue distribution of information regarding the dates and locations of temporary and permanent household hazardous waste and antifreeze, oil, battery and paint collection events and facilities, and financial support of household hazardous waste and antifreeze, oil, battery and paint collection facilities and events or curbside or special collection sites managed by the Co-Permittees or private entities, such as solid waste haulers.
4. The Regional Board recommends continuation of Co-Permittee efforts to coordinate with local water purveyors and other stakeholders to encourage efficient irrigation and minimize runoff from residential areas.
5. The Co-Permittees shall enforce their Storm Water Ordinance as appropriate to control the discharge of Pollutants associated with residential activities.
6. Each Co-Permittee shall include an evaluation of its residential program in the Annual Report starting with the second Annual Report after adoption of this Order.

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[44] The Riverside-Corona Resource Conservation District (RCRCD) provides gardening and horticulture information appropriate for the area including native plant selection, backyard management, alternatives to pesticide, irrigation scheduling and composting. The RCRCD is sponsored by the cities and county of Riverside Only Rain Down the Storm Drain Pollution Prevention Program.

[45] Backyard Conservation, Bringing Conservation from the Countryside to Your Backyard, USDA Natural Resources Conservation Service, National Association of Conservation Districts, Wildlife Habitat Council and National Audubon Society.

XII. NEW DEVELOPMENT (INCLUDING SIGNIFICANT REDEVELOPMENT)

A. GENERAL REQUIREMENTS:

1. Each Co-Permittee, consistent with the DAMP, and requirements of this Order, when considering any map or permit for a New Development or Significant Redevelopment project for which discretionary approval is sought, must continue to require such map or permit to obtain coverage under the General Construction Permit, where applicable, prior to the issuance of grading or construction permits. Each Co-Permittee shall specify its verification procedure and any tools utilized for this purpose in its LIP.

2. Each Co-Permittee must continue to implement those BMPs identified in Section 7.1 of the DAMP. Each Permittee shall ensure that the erosion and sediment control plans it approves include appropriate erosion and sediment control BMPs (i.e., erosion measures for slopes greater than a certain length or hill-side developments, ingress/egress controls, perimeter controls, run-on diversion, if significant) such that a distinct and effective combination of BMPs consistent with site risk is implemented through all phases of construction.

3. The land use approval process of each Co-Permittee must continue to require post-construction BMPs, Source Control BMPs and Treatment Control BMPs and identify their locations and long-term maintenance responsibilities consistent with the requirements of this Order.

4. Each Permittee shall ensure, consistent with the MEP standard and within the limits of its legal authority, that runoff from New Development and Significant Redevelopment projects not regulated under this Order but that require encroachment permits for connections to the MS4 regulated under this Order are consistent with the requirements of this Order including the model WQMP for the Permit Area.
5. Each Permittee shall ensure that appropriate BMPs to reduce erosion and mitigate Hydromodification are included in the design for replacement of existing culverts or construction of new culverts and/or bridge crossings to the MEP[46].
6. Each Permittee shall ensure, consistent with the MEP standard, that runoff from development projects it approves, does not cause nuisance to adjoining downstream properties and stream channels.
7. Each Permittee shall ensure to the MEP that MS4s[47] are appropriately maintained consistent with Section XIV of this Order or are adequately maintained by a legally responsible party.

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[46] This type of project may require a CWA Section 404 Permit.

8. Each Permittee shall require applicants to minimize the short and long-term adverse impacts on Receiving Water quality from New Development and Significant Redevelopment maps or permits where discretionary approval is sought, as required in Section XII.D below, by: (1) continuing to review, approve, and verify implementation of project-specific WQMPs, implementation of LID principles, where feasible; (2) addressing HCOCs; and (3) ensuring that long term BMP operation and maintenance mechanisms are in place prior to project closure or issuance of certificates of occupancy.

9. The requirements of Section XII.D below shall apply to Permittee projects that meet the New Development and Significant Redevelopment criteria.

10. Each Permittee shall participate in the development of a Watershed Action Plan, described in Section XII.B, below, to integrate water quality, stream protection and storm water management and use within the Permit Area with land use planning policies, ordinances, and plans.

B. WATERSHED ACTION PLAN

1. An integrated watershed management approach may facilitate integration of planning and project approval processes with water quality and quantity control measures. Management of the impacts of Permit Area urbanization on water quality and stream stability is more effectively done on a per-site, neighborhood and municipal basis based on an overall watershed plan. Pending completion of the Watershed Action Plan consistent with this section, management of the impacts of urbanization shall be accomplished using existing programs. The Permittees shall develop a Watershed Action Plan to address the entire Permit Area. The Permittees may choose to develop sub-watershed action plans based on the overall Watershed Action Plan in the future based on new 303(d) impairments, TMDL requirements, or other factors.

2. The Permittees shall develop and submit to the Executive Officer for approval a Watershed Action Plan that describes and implements the Permittees' approach to coordinated watershed management. The objective of the Watershed Action Plan is to address watershed scale water quality impacts of urbanization in the Permit Area associated with Urban TMDL WLAs, stream system vulnerability to Hydromodification from Urban Runoff, cumulative impacts of development on

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[47] Urban runoff conveyance systems created or resulting from development projects approved by Permittees.

vulnerable streams, preservation of Beneficial Uses of streams in the Permit Area, and protection of water resources, including groundwater recharge areas.

3. Within three years of Permit adoption, the Co-Permittees shall develop the Watershed Action Plan and implementation tools to address impacts of urbanization in a holistic manner. At a minimum, the Watershed Action Plan shall include the following:

   a. Describe proposed Regional BMP approaches that will be used to address Urban TMDL WLAs.

   b. Develop recommendations for specific retrofit studies of MS4, parks and recreational areas that incorporate opportunities for addressing TMDL Implementation Plans, Hydromodification from Urban Runoff and LID implementation.

   c. Description of regional efforts that benefit water quality (e.g. Western Riverside County Multiple Species Habitat Conservation Plan, TMDL Task Forces, Water Conservation Task Forces, Integrated Regional Watershed Management Plans) and their role in the Watershed Action Plan. The Permittees shall describe how these efforts link to their Urban Runoff Programs and identify any further coordination that should be promoted to address Urban WLA or Hydromodification from Urban Runoff to the MEP.

4. Within two years of adoption of this Order, the Permittees shall delineate existing unarmored or soft-armored stream channels in the Permit Area that are vulnerable to Hydromodification from New Development and Significant Redevelopment projects.

5. Within two years of completion of the delineation in Section XII,B.4 above, develop a Hydromodification management plan (HMP) describing how the delineation will be used on a per project, sub-watershed, and watershed basis to manage Hydromodification caused by urban runoff. The HMP shall prioritize actions based on drainage feature/susceptibility/risk assessments and opportunities for restoration.

   a. The HMP shall identify potential causes of identified stream degradation including a consideration of sediment yield and balance on a watershed or sub-watershed basis.

   b. Develop and implement a HMP to evaluate Hydromodification impacts for the drainage channels deemed most susceptible to degradation. The HMP will identify sites to be monitored, include an assessment methodology, and required follow-up actions based on monitoring results. Where applicable, monitoring sites may be used to evaluate the effectiveness of BMPs in preventing or reducing impacts from Hydromodification.

6. Identify Impaired Waters [CWA § 303(d) listed] with identified Urban Runoff Pollutant sources causing impairment, existing monitoring programs addressing those Pollutants, any BMPs that the Permittees are currently implementing, and any BMPs the Permittees are proposing to implement consistent with the other requirements of this Order. Upon completion of XII.B.4, develop a schedule to implement an integrated, world-wide-web available, regional geodatabase of the impaired waters [CWA § 303(d) listed], MS4 facilities, critical habitat preserves defined in the Multiple Species Habitat Conservation Plan and stream channels in the Permit Area that are vulnerable to Hydromodification from Urban Runoff.

7. Develop a schedule to maintain the geodatabase required in Section XII.B.4 and other available and relevant regulatory and technical documents associated with the Watershed Action Plan.

8. Within three years of adoption of this Order, the Watershed Action Plan shall be submitted to the Executive Officer for approval and incorporation into the DAMP. Within six months of approval, each Permittee shall implement applicable provisions of the approved revised DAMP and incorporate applicable provisions of the revised DAMP into the LIPs for watershed wide coordination of the Watershed Action Plan.

9. The Permittees shall also incorporate Watershed Action Plan training, as appropriate, including training for upper-level managers and directors into the training programs described in Section XV. The Co-Permittees shall also provide outreach and education to the development community regarding the availability and function of appropriate web-enabled components of the Watershed Action Plan.

10. Invite participation and comments from resource conservation districts, water and utility agencies, state and federal agencies, non-governmental agencies and other interested parties in the development and use of the Watershed Geodatabase;

C. INCORPORATION OF WATERSHED PROTECTION PRINCIPLES INTO PLANNING PROCESSES

1. Within 24 months of adoption of this Order, each Co-Permittee shall review its General Plan and related documents including, but not limited to its development standards, zoning codes, conditions of approval and development project guidance to eliminate any barriers to implementation of the LID principles and HCOC discussed in Section XII.E of this Order. The results of this review along with any proposed action plans and schedules shall be reported in the Annual Report for the corresponding reporting year. Any changes to the project approval process or procedures shall be reflected in the LIP.

2. The Co-Permittees shall continue to ensure that their General Plan and related land use ordinances and land use approval processes (including, but not limited to, its approved development standards, zoning ordinances, standard conditions of approval, or project development guidelines) ensure the principles and policies enumerated below are properly considered and are incorporated, as appropriate, into the land use approval process to the MEP:

   a. Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; minimize significant adverse impacts from Urban Runoff on the biological integrity of natural drainage systems and water bodies;

   b. Minimize changes in hydrology and Pollutant loading; require incorporation of controls including Source Control and Treatment Control BMPs to mitigate any projected increases in Pollutant loads and flows; ensure that post-development runoff rates and velocities from a site do not adversely impact downstream erosion and stream habitat; minimize the quantity of Urban Runoff directed to impermeable surfaces and the MS4; and maximize the percentage of permeable surfaces to allow more percolation of Urban Runoff into the ground;

   c. Preserve wetlands, riparian corridors, and buffer zones that provide important water quality benefits; establish reasonable limits on the clearing of vegetation from the project site;

   d. Encourage the use of BMPs to manage Urban Runoff quantity and quality, consistent with XII.C.1 above;

   e. Provide for appropriate permanent measures to reduce Pollutant loads in Urban Runoff from the development site; and

   f. Establish development guidelines for areas particularly susceptible to erosion and sediment loss.

3. The Co-Permittees, when acting as a CEQA Lead Agency for a project requiring a CEQA document, must identify at the earliest possible time in the CEQA process resources under the jurisdiction by law of the Regional Board which may be affected by the project. The preliminary WQMP should identify the need for any CWA Section 401 certification. The Co-Permitees should coordinate project review with Regional Board staff pursuant to the requirements of CEQA. Upon request by Regional Board staff, this coordination shall include the timely provision of the discharger's identity and their contact information and the facilitation of early-consultation meetings.

4. The following potential impacts shall be considered during CEQA review:

   a. Potential impact of project construction on Urban Runoff.

   b. Potential impact of project's post-construction activity on Urban Runoff.

c. Potential for discharge of Pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor areas.

d. Potential for discharge of Urban Runoff to affect Beneficial Uses of the Receiving Waters.

e. Potential for significant changes in the flow velocity and/or volume of Urban Runoff that could cause environmental harm.

f. Potential for significant increases in erosion of the project site or surrounding areas.

5. Each Permittee shall provide the Regional Board with the draft amendment or revision when a pertinent General Plan element or the General Plan is noticed for comment in accordance with Govt. Code § 65350 et seq.

D. WATER QUALITY MANAGEMENT PLAN (WQMP) FOR URBAN RUNOFF (FOR NEW DEVELOPMENT/ SIGNIFICANT REDEVELOPMENT):

1. Each Permittee shall continue to require project-specific WQMPs for those maps and permits described below for which discretionary approval is sought and as further described in Section 6 and Appendix O of the DAMP. Within 18 months of adoption of this Order, the Permittees shall submit a revised WQMP to incorporate new elements required in this Order. The primary objective of the WQMP, by addressing Site Design, Source Control and Treatment Control BMPs applied on a regional, sub-regional or site specific basis, is to ensure that the land use approval process of each Co-Permittee will minimize Pollutant loads in Urban Runoff from maps or permits for which discretionary approval is given.
2. Each Co-Permittee shall ensure that an appropriate WQMP is prepared for the following categories of New Development and Significant Redevelopment projects for which a map or permit for discretionary approval is sought:

a. *All significant re-development projects:* Significant re-development is defined as the addition or replacement of 5,000 or more square feet of impervious surface on an already developed site. Significant Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety. Where redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing developed site, and the existing development was not subject to WQMP requirements, the numeric sizing criteria discussed below applies only to the addition or replacement, and not to the entire developed site.

Where redevelopment results in an increase of fifty percent or more of the impervious surfaces of a previously existing developed site, the numeric sizing criteria applies to the entire development.

b. For purposes of this Order, the categories of development identified below, shall be collectively referred to as "New Development".

   i. New developments that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial and industrial projects and residential housing subdivisions requiring a Final Map. (i.e., detached single family home subdivisions, multi-family attached subdivisions, condominiums, apartments, etc.); mixed use and public projects (excluding Permittee road projects). This category includes development projects on public and private land, which fall under the planning and building authority of the Co-Permittees.

   ii. Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532-7534, 7536-7539).

   iii. Restaurants (with SIC code 5812) where the land area of development is 5,000 square feet or more.

   iv. Hillside developments disturbing 5,000 square feet or more which are located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.

   v. Developments of 2,500 square feet of impervious surface or more adjacent to (within 200 feet) or discharging directly into ESAs.

   vi. Parking lots of 5,000 square feet or more exposed to storm water. Parking lot is defined as land area or facility for the temporary parking or storage of motor vehicles.

   vii. Retail Gasoline Outlets (RGOs) that are either 5,000 square feet or more with a projected average daily traffic of 100 or more vehicles per day.

   viii. Emergency public safety projects in any of the above-listed categories may be excluded if the delay caused due the requirement for a WQMP compromises public safety, public health and/or environmental protection.

3. WQMPs shall include BMPs (on-site and/or watershed-based), for the discharge of any urban sourced 303(d) listed Pollutant to an Impaired Waterbody on the 303(d) list such that the discharge shall not cause or contribute to an exceedance of Receiving Water Quality Objectives.

4. Treatment Control BMPs shall be in accordance with the approved WQMP and must be sized to comply with one of the following numeric sizing criteria:

a. VOLUME - Volume–based Treatment Control BMPs shall be designed to infiltrate, filter, or treat either:

   i. The volume of runoff produced from a 24-hour, 85th percentile storm event, as determined from the County of Riverside's 85th Percentile Precipitation Isopluvial Map; or,

   ii. The volume of annual runoff produced by the 85th percentile, 24-hour rainfall event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998); or,

   iii. The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in California Storm Water Best Management Practices Handbook – Industrial/Commercial (1993); or,

   iv. The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in Pollutant loads and flows as achieved by mitigation of the 85th percentile, 24-hour runoff event;

   OR

b. FLOW - Flow-based BMPs shall be designed to infiltrate, filter, or treat either:

   i. The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour; or,

   ii. The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or,

   iii. The maximum flow rate of runoff, as determined from the local historical rainfall record that achieves approximately the same reduction in Pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

5. Within 24 months of adoption of this Order, the Permittees shall develop a procedure for streamlining regulatory agency approval of regional Treatment Control BMPs. The recommendations should include information needed to be submitted to Regional Board for consideration of regional Treatment Control BMPs. At a minimum, it should include: BMP location; type and effectiveness in removing Pollutants of Concern; projects tributary to the regional treatment system; engineering design details; funding sources for construction, operation and maintenance; and parties responsible for monitoring effectiveness, operation and maintenance.

6. The Permittees shall continue to require other development projects for which a map or permit for discretionary approval is sought (projects that are not New Developments or Significant Re-developments required to develop project-specific

WQMPs) to incorporate conditions of approval, to require appropriate Site Design, Source Control and any other BMPs which may or may not include Treatment Control BMPs.

7. The Permittees shall ensure that the revised WQMP addresses:
   a. A review and update of Source Control BMPs required for New Development and Significant Redevelopment.
   b. Update of the list of Treatment Control BMPs, including an evaluation of their effectiveness based on national, statewide or regional studies.
8. Groundwater Protection:

   Treatment Control BMPs utilizing infiltration [exclusive of incidental infiltration and BMPs not designed to primarily function as infiltration devices (such as grassy swales, detention basins, vegetated buffer strips, constructed wetlands, etc.)] must comply with the following minimum requirements to protect groundwater:

   a. Use of structural infiltration Treatment Control BMPs shall not cause or contribute to an exceedance of groundwater Water Quality Objectives.
   b. Use of structural infiltration Treatment Control BMPs shall not cause a Nuisance or pollution as defined in Water Code Section 13050.
   c. Use of structural infiltration Treatment Control BMPs shall not be used in areas of known soil or groundwater contamination[48], without written authorization from the Regional Board Executive Officer.
   d. Located at least 100 feet horizontally from any water supply well.
   e. The vertical distance from the bottom of any infiltration structural Treatment Control BMP to the historic high groundwater mark shall be at least 10 feet. Where the groundwater basins do not support Beneficial Uses, this vertical distance criteria may be reduced, provided groundwater quality is maintained.
   f. Source Control and Pollution Prevention BMPs shall be implemented to protect groundwater quality.
   g. Adequate pretreatment of runoff prior to infiltration shall be required in gas stations and large commercial parking lots.
   h. Unless adequate pre-treatment of runoff is provided prior to infiltration, structural infiltration Treatment Control BMPs must not be used for areas of industrial or light industrial activity, such as: areas subject to high vehicular traffic (25,000 or more daily traffic), car washes; nurseries; or any other high threat to water quality land uses or activities.

[48] Extra diligence should also be performed when proposing infiltration BMPs in areas where the proposed land use is often associated with soil and groundwater contamination.

i. Class V injection wells or dry wells must not be placed in areas subject to vehicular[49] repair or maintenance activities[50], such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work.

E. LOW IMPACT DEVELOPMENT (LID) AND HYDROMODIFICATION MANAGEMENT TO MINIMIZE IMPACTS FROM NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT PROJECTS:

1. Within 18 months of adoption of this Order, the Permittees shall update the WQMP to address LID principles and HCOC consistent with the MEP standard. A copy of the updated WQMP shall be submitted to the Executive Officer for approval. Within six months of approval, each Permittee shall implement the updated WQMP. Onsite LID principles as close to Pollution sources as possible shall be given preference, however, project site, sub-regional or regional LID principles may also be applied.

2. The Permittees shall require those projects identified in Section XII.D.2. to infiltrate, harvest and use, evapotranspire and/or bio-treat[51] the 85th percentile storm event ("Design Capture Volume"). The Design Capture Volume should be calculated as specified in Section XII.D.4.a, above. It is recognized that LID principles are not universally applicable and they are dependent on factors such as: soil conditions including soil compaction and permeability, groundwater levels, soil contaminants (Brownfield development), space restrictions (in-fill projects, redevelopment projects, high density development, transit-oriented developments), highest and best use of Urban Runoff (to support downstream uses), etc. Any portion of this volume that is not infiltrated, harvested and used, evapotranspired, and/or bio-treated shall be treated and discharged in accordance with the requirements set forth in Section XII.G, below.

3. The Permittees shall incorporate LID site design principles into the revised WQMP to reduce runoff to a level consistent with the MEP standard. The Co-Permittees

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[49] Vehicles include automobiles; motor vehicles include trucks, trains, boats, motor cycles, farm machineries, airplanes, and recreation vehicles such as snow mobiles, all terrain vehicles, and jet skis.

[50] United States Environmental Protection Agency, Office of Water, EPA 816-R-00-008, September 2000 *State Implementation Guidance - Revisions to the UIC Regulations for Class V Injection Wells and* "Class V Rule" (*Revisions to the Underground Injection Control Regulations for Class V Injection Wells*, 64 FR 68546) *indicate that these activities are prohibited from Class V injection wells.*

[51] A properly engineered and maintained bio-treatment system may be considered only if infiltration, harvesting and use and evapotranspiration cannot be feasibly implemented at a project site (feasibility criteria will be established in the WQMP [Section XII.G.1]. Specific design, operation and maintenance criteria for bio-treatment systems shall be part of the WQMP that will be produced by the Permittees.

shall require that New Development and Significant Redevelopment projects include Site Design BMPs during the development of the project-specific WQMP. The design goal shall be to maintain or replicate the pre-development hydrologic regime through the use of design techniques that create a functionally equivalent post-development hydrologic regime through site preservation techniques and the use of integrated and distributed infiltration, retention, detention, evapotranspiration, filtration and treatment systems. The revised WQMP should continue to consider Site Design BMPs described in Appendix O of the DAMP and LID principles described in the pending Southern California Stormwater Monitoring Coalition/CASQA *LID Guidance Manual for Southern California*.

4. Within 18 months of adoption of this Order, each Permittee shall revise, where feasible its ordinances, codes, building and landscape design standards to promote green infrastructure/LID techniques including, but not limited to, the following:

   a. Landscaping designs that promote longer water retention and evapotranspiration such as 1 foot depth of compost/top soil in commercial and residential areas on top of 1 foot of non-compacted subsoil, concave landscape grading to allow runoff from impervious surfaces, and water conservation by selection of water efficient native plants, weather-based irrigation controllers, etc.

   b. Allow permeable surface designs in low traffic roads and parking lots. This may require land use/building code amendment.

   c. Allow natural drainage systems for street construction and catchments (with no drainage pipes) and allow vegetated ditches and swales where feasible.

   d. Require landscape in parking lots to provide treatment, retention or infiltration.

   e. Reduce curb requirements where adequate drainage, conveyance, treatment and storage are available.

   f. Amend land use/building codes to allow no curbs, curb cuts and/or stop blocks in parking areas and residential streets with low traffic.

   g. Use of green roof, rain garden, and other green infrastructure in urban/suburban area.

   h. Allow rainwater harvesting and use.

   i. Narrow streets provide alternatives to minimum parking requirements, etc. to facilitate LID where acceptable to public safety departments.

j. Consider vegetated landscape for storm water treatment as an integral element of streets, parking lots, playground and buildings.

k. Consider and facilitate application of landform grading techniques[52] and revegetation as an alternative to traditional approaches, particularly in areas susceptible to erosion and sediment loss such as hillside development projects,

l. Other site design BMPs identified in the WQMP not included above.

5. Consistent with the requirements of AB 1881, each Co-Permittee is mandated to update its landscape ordinance. The bill requires the local agencies to adopt the State Model Water Efficient Landscape Ordinance[53] or prepare one that is "at least as effective" as the State Model by January 2010. The proposed state model ordinance applies to landscape requiring a building or landscape permit, plan check or design review. Each Permittee shall provide the Regional Board a copy of its report to Department of Water Resources (DWR).
6. Each Permittee shall implement effective education programs to educate property owners to use Pollution Prevention BMPs and to maintain on-site hydrologically functional landscape controls.
7. To reduce Pollutants in Urban Runoff, address Hydromodification, and manage Urban Runoff as a resource to the MEP, the revised WQMP shall specify preferential use of Site Design BMPs that incorporate LID techniques, where feasible, in the following manner (from highest to the lowest priority):
   a. Preventative measures (these are mostly non-structural measures, e.g., preservation of natural features to a level consistent with the MEP standard; minimization of Urban Runoff through clustering, reducing impervious areas, etc.) and
   b. Mitigation measures (these are structural measures, such as, infiltration, harvesting and use, bio-treatment, etc.).
8. The mitigation or structural Site Design BMPs shall also be prioritized (from highest to lowest priority):
   a. Infiltration BMPs (examples include permeable pavement with infiltration beds, dry wells, infiltration trenches, surface and sub-surface infiltration basins. The Permittees should work with local groundwater management agencies to ensure that infiltration Treatment Control BMPs are designed appropriately;

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[52] http://www.epa.gov/Region3/mtntop/pdf/appendices/d/aquatic-ecosystem-enhanc-symp/symposiumfinal.pdf

[53] http://www.owue.water.ca.gov/docs/final_reg_text.pdf

b. BMPs that harvest and use (e.g., cisterns and rain barrels); and

c. Vegetated BMPs that promote infiltration and evapotranspiration including bioretention, biofiltration and bio-treatment. Upon the Permittees' determination of LID infeasibility per Section XII.G, design capture volume specified in Section XII.D.4, that is not addressed by onsite or offsite LID *Site Design BMPs* as listed above shall be treated using *Treatment Control BMPs* as described in Section XII.G.

9. Hydrologic Condition of Concern (HCOC):

a. The Permittees shall continue to ensure, consistent with the MEP standard, through their review and approval of project-specific WQMPs that New Development and Significant Redevelopment projects do not pose a HCOC due to increased runoff volumes and velocities.

b. A New Development and Significant Redevelopment project does not cause a HCOC if any one of the following conditions is met:

i) The project disturbs less than one acre and is not part of a common plan of development.

ii) The volume and the time of concentration[54] of storm water runoff for the post-development condition is not significantly different from pre-development condition for a 2-year return frequency storms (a difference of 5% or less is considered insignificant). This may be achieved through Site Design and Treatment Control BMPs.

iii) All downstream conveyance channels to an adequate sump (e.g. Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River or other lake, reservoir or natural resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity, and no sensitive stream habitat areas will be affected; or not identified in the Permittees Hydromodification sensitivity maps required in Section XII.B.3, and no sensitive stream habitat areas will be affected.

iv) The Permittees may request a variance from these criteria based on studies conducted by the Southern California SMC, SCCWRP, CASQA, or other regional studies. Requests for consideration of any variances should be submitted to the Executive Officer.

c. If a HCOC exists, the WQMP shall include an evaluation of whether the project will adversely impact downstream erosion, sedimentation or stream habitat. This evaluation should include consideration of pre- and post-development hydrograph volumes, time of concentration and peak discharge velocities for a

[54] Time of concentration is defined as the time after the beginning of rainfall when all portions of the drainage basin are contributing simultaneously to flow at the outlet.

2-year storm event, construction of sediment budgets, and a sediment transport analysis. If the evaluation determines adverse impacts are likely to occur, the project proponent shall implement additional Site Design BMPs, on-site BMPs, Treatment Control BMPs and/or in-stream BMPs[55] to mitigate the impacts. The project proponent should first consider Site Design BMPs and on-site BMPs prior to proposing in-stream BMPs; in-stream BMPs must not adversely impact Beneficial Uses or result in sustained degradation of Receiving Water quality and shall require all necessary regulatory approvals[56]:

d. HCOC are considered mitigated if they meet one of the following conditions:

   i. Require additional onsite or offsite mitigation to address potential erosion or habitat impact using LID BMPs.

   ii. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC for the downstream Receiving Waters.

   iii. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

e. If site conditions do not permit items i, through iv, above, the alternatives and in-lieu programs discussed under Section XII.G, below, may be considered.

F. ROAD PROJECTS

1. Within 24 months of adoption of this Order, the Co-Permittees shall develop standard design and post-development BMP guidance to be incorporated into projects for streets, roads, highways, and freeway improvements, under the jurisdiction of the Co-Permittees to reduce the discharge of Pollutants from the projects to the MEP. The draft guidance shall be submitted to the Executive Officer for review and approval and shall meet the performance standards for site design/LID BMPs, Source Control and Treatment Control BMPs as well as the

[55] In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

[56] In-stream control projects require a Stream Alteration Agreement from the California Department of Fish & Game, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

HCOC criteria. The guidance and BMPs shall address streets, roads or highways under the jurisdiction of the Co-Permittees used for transportation of automobiles, trucks, motorcycles, and other vehicles, and excludes routine road maintenance activities where the surface footprint is not increased. The guidance shall incorporate principles contained in the USEPA guidance, "Managing Wet Weather with Green Infrastructure: Green Streets" to the MEP and at a minimum shall include the following:

a. Guidance specific to new road projects;

b. Guidance specific to projects for existing roads;

c. Size or impervious area criteria that trigger project coverage;

d. Preference for green infrastructure approaches wherever feasible;

e. Criteria for design and BMP feasibility analyses on a project-specific basis.

2. Within six months of approval by the Executive Officer, the Permittees shall implement the standard design and post-development BMP guidance for all road projects. Pending approval of the standard design and post-development BMP guidance, site specific WQMPs for streets road and highway projects shall be required pursuant to Section XII.D.2.

G. ALTERNATIVES AND IN-LIEU PROGRAMS

1. Within 18 months of adoption of this Order, the Permittees shall develop technically-based feasibility criteria for project evaluation to determine the feasibility of implementing LID BMPs which may include factors such as a groundwater protection assessment to determine if infiltration BMPs are appropriate for the site[57]. These criteria shall be submitted to the Executive Officer for approval. Only those projects that have completed a feasibility analysis as per the approved criteria should be considered for alternatives and in-lieu programs. If a particular BMP is not technically feasible, other BMPs should be implemented to achieve the same level of compliance, or if the cost of BMP implementation greatly outweighs the Pollution control benefits, the Co-Permittees may grant a waiver of the BMPs. All waivers, along with waiver justification documentation, must be submitted to the Executive Officer for approval in writing within 30 days prior to Permittee approval.

[57] Such feasibility determinations may be based on regional analyses conducted by the Permittees (see finding G-14) or on site specific conditions. Site specific determinations shall be certified by a Professional Civil Engineer registered in the State of California, and will be documented in the project WQMP, which shall be approved by the Permittee prior to submittal to the Executive Officer. Within 30 days of submittal to the Executive Officer, the Permittee will be notified if the Executive Officer intends to take any action.

If a waiver is granted, the Permittees shall ensure that project proponents participate in one of the in-lieu programs discussed in this section.

2. The Permittees may collectively or individually propose to establish an Urban Runoff fund to be used for urban water quality improvement projects within the same watershed that is funded by contributions from developers granted waivers. The contributions should be at least equivalent to the cost savings for waived projects and the urban runoff funds shall be expended for projects that provide at least an equivalent amount of water quality improvement (there shall be no net impact on water quality due to a waived project). If a waiver is granted and an Urban Runoff fund is established, the Annual Report for the year should include:
   a. Total amount deposited into the funds; and
   b. The party responsible for managing the Urban Runoff fund;
   c. Projects funded or proposed to be funded with monies from the urban runoff fund with details on expected water quality improvement;
   d. Party or parties responsible for designing, construction, operation and maintenance of urban runoff funded projects, and
   e. Current status and a schedule for project completion.

3. The obligation to install Treatment Control BMPs at a New Development or Significant Redevelopment project is met if, for a common plan of development, BMPs are constructed with the requisite capacity to serve the entire common project, even if certain phases of the common project may not have BMP capacity located on that phase in accordance with the requirements specified above. The goal of the WQMP is to develop and implement practicable programs and policies to minimize the effects of urbanization on site hydrology, Urban Runoff flow rates, velocities, duration and time of concentration and Pollutant loads. This goal may be achieved through watershed-based Treatment Control BMPs, in combination with site-specific BMPs. All Treatment Control BMPs should be located as close as possible to the Pollutant sources, should not be located within Waters of the US, and Pollutant removal should be accomplished prior to discharge to Waters of the US. Regional Treatment Control BMPs shall be operational prior to occupation of any of the New Development or Significant Redevelopment project sites tributary to the regional Treatment Control BMP.

4. The Permittees may establish, where feasible and practicable, a water quality credit system for alternatives to infiltration, harvesting and use, evapotranspiration and other LID and Hydromodification requirements specified above. The following types of projects may be included in this credit system:
   a. Redevelopment projects that reduces the overall impervious area
   b. Brownfield redevelopment

c. High density developments (>7 units per acre)

d. Mixed use and transit-oriented development (within ½ mile of transit)

e. Dedication of undeveloped portions of the project site to parks, preservation areas and other pervious uses

f. Regional treatment systems with a capacity to treat flows from all upstream developments

g. Offsite mitigation or dedicated mitigation areas within the same watershed

h. Highly urbanized areas such as city center area

i. Historic Districts and Historic Preservation areas

j. Live-work developments

k. In-fill projects

l. Projects that enhance the transport of coarse sediment to the coast for beach replenishment.

5. The water quality credit system should not result in a net impact on water quality.

6. A summary of waivers of LID (along with a short description of the Section XII.G.2 through XII.G4 In-Lieu program selected), Hydromodification and Treatment Control BMPs along with any water quality credit granted, in-lieu projects, or urban runoff fund contribution required by each Co-Permittee shall be included in the Annual Report.

H. APPROVAL OF WQMP

Within 18 months of adoption of this Order, each Permittee shall develop and implement standard procedures and tools and include in its LIP the following:

1. The Permittees shall utilize a mechanism for review and approval of WQMPs, including a checklist that incorporates the minimum requirements of the model WQMP. The process for review and approval shall be described in the Permittees LIP.

2. The Co-Permittees shall maintain a database to track structural post-construction BMPs (consistent with XII.K.4 below).

3. Continue to ensure that the entity(ies) responsible for BMP maintenance and the mechanism for BMP funding is identified prior to WQMP approval.

4. The Permittees shall train those involved with WQMP reviews in accordance with Section XV, Training Requirements.

I. FIELD VERIFICATION OF BMPS

1. The Co-Permittees' permit close-out procedures shall include field verification that structural Site Design, Source Control and Treatment Control BMPs are designed, constructed and functional in accordance with the approved WQMP.
2. Prior to occupancy, the Co-Permittees shall verify through visual observation that the BMPs are working and functional.
3. The Co-Permittees may accept self-certification or third-party certification of BMPs from State-licensed professional engineers.

J. CHANGE OF OWNERSHIP AND RECORDATION

The Co-Permittees shall establish a mechanism to ensure that appropriate easements and ownerships are properly recorded in public records at the County and/or the city and the information is conveyed to all appropriate parties when there is a change in project or site ownership.

K. OPERATION AND MAINTENANCE OF POST-CONSTRUCTION BMPS

1. The Co-Permittees shall ensure that structural post construction BMPs are designed and implemented with control measures necessary to effectively minimize the creation of Nuisance or Pollution associated with vectors, such as mosquitoes, rodents, flies, etc. The Co-Permittee should work with the local vector agencies to ensure that structural post construction BMPs are designed to minimize the potential for vector breeding during operation and maintenance.
2. The Co-Permittees shall specify conditions of approval and as built inspections ensure that require proper maintenance and operation of any structural post construction BMPs including requirements for vector control.
3. The parties responsible for the maintenance and operation of the structural post construction BMPs, and a funding mechanism for operation and maintenance of structural post construction BMPs for the life of the project shall be identified prior to issuance of occupancy permits. Design of these structures shall allow adequate access for maintenance.
4. Each Co-Permittee shall maintain a database to track the operation and maintenance of the structural post construction BMPs installed after adoption of this Order. The database shall include: type of BMP; watershed where it is located; date of certification; party responsible for maintenance and any problems identified during inspection including any vector or nuisance problems.
5. Within 18 months of adoption of this order and annually thereafter, all Permittee-owned structural post construction BMPs installed after the date of this Order shall be inspected prior to the Rainy Season. The Co-Permittees shall also develop an

inspection frequency for New Development and Significant Redevelopment projects, based on the project type and the type of structural post construction BMPs deployed. Pursuant to XII.K.4, all New Development and Significant Redevelopment, structural post construction BMPs shall be inspected within the five-year Permit Term. The Co-Permittees shall ensure that the BMPs are operating and are maintained properly and all BMPs are working effectively to remove Pollutants in runoff from the site. If vector problems are identified, the Co-Permittees should work with the vector control agencies to remedy vector control problems. All inspections shall be documented and kept as Permittee record. The Co-Permittees may accept inspection reports conducted and certified by state licensed professional engineers in lieu of Co-Permittee inspections.

6. The Annual Report shall include a list of all structural post construction BMPs approved contained in the database required in XII.K.4 above.

L. PRE-APPROVED PROJECTS

The above provisions for LID and HCOC are not applicable to projects that have an approved WQMP as of the date of approval of the revised WQMP. The above provisions shall be implemented in a manner consistent with the MEP standard for all other projects 45 days from the date of approval of the revised WQMP. The Regional Board recognizes that full implementation may not be feasible for certain projects which have received tentative tract or parcel map or other discretionary approvals.

XIII. PUBLIC EDUCATION AND OUTREACH

A. The Permittees shall continue to implement the public education efforts already underway and shall continue to promote the most effective elements of the comprehensive public and business education strategy contained in the ROWD and Section 10 of the DAMP. As part of the Annual Report, the Permittees shall review their public education and outreach efforts and revise their activities to adapt to the needs identified in the annual reassessment of program priorities with particular emphasis on addressing the Pollutants of Concern. Results of this review shall direct the focus of its public education effort and cause recommendations for any changes to the public and business education program including: (1) how to make the multimedia efforts more effective; (2) a reevaluation of audiences and key messages for targeted behaviors; and (3) opportunities for participation in regional and statewide public education efforts. The goal of the public and business education program shall be to target 100% of the residents, including businesses, commercial and industrial establishments.

B. A status report on the requirements of this section and any changes to the on-going public education program shall be described in the Annual Report.

C. The Permittees shall implement an assessment program to measurably increase public knowledge of its communities regarding MS4 and impacts of Urban Runoff on Receiving Waters. The Permittees shall implement programs that can measure the change in behavior of its target communities to reduce Pollutant releases to the MS4 and the environment. A description of the program tasks, schedule and measurable goals shall be included in the first Annual Report due after adoption of this Order.

D. When feasible, the Permittees shall participate in joint outreach programs with other agencies including, but not limited to, the Santa Ana Watershed Project Authority, Caltrans, and other county and municipal storm water programs to ensure that a consistent message on storm water pollution prevention is disseminated to the public.

E. The Permittees shall continue to ensure that appropriate outreach materials are available for construction, industrial and commercial inspection programs. Outreach materials should be provided to Permittee inspectors for distribution to inspected facilities.

F. Within 18 months from the date of adoption of this Order, the Permittees shall ensure that they have developed, maintained and distributed BMP guidance for the control of those potentially polluting activities identified during the term of the 2002 MS4 Permit, which are not otherwise regulated by any agency, including guidelines for the household use of fertilizers, pesticides, herbicides and other chemicals, and guidance for mobile vehicle maintenance, carpet cleaners, commercial landscape maintenance, and pavement cutting. These guidance documents shall be distributed to the public, trade associations, etc., through participation in community events, trade association meetings and/or by mail.

G. The Permittees shall ensure that appropriate educational materials, including the BMP brochures, are provided to all new industrial and commercial enterprises within their jurisdiction at the time appropriate permits (e.g. business licenses or occupancy permits) are issued.

H. The Permittees shall continue to maintain, and if necessary enhance, public education materials to encourage the public to report: Illegal Dumping and unauthorized, non-storm water discharges from residential, industrial, construction and commercial sites into public streets, storm drains and to surface waterbodies and their tributaries; clogged storm drains; and faded stencils or missing catch basin markers. The Principal Permittee's hotline and web site shall provide guidance regarding where to locate information regarding general Urban Runoff pollution control measures. The hotline and website information shall be included in outreach materials and shall be listed in the governmental pages of prominent regional phone books and on the Co-Permittees' website.

I. The Permittees shall maintain a Public Education Committee to provide oversight and guidance for the implementation of the public education program. The Permittees shall

continue to participate in the Public Education Committee to review and update existing guidance for the implementation of the public education program. One of the functions of the Public Education Committee shall be to review outreach materials for construction, industrial and commercial inspection programs and residential outreach to ensure they appropriately address common violations observed during inspections. Once deficiencies are identified, alternative text to address the deficiency shall be developed within 6 months and reported in the Annual Report. The Public Education Committee shall meet at least twice per year.

J. The Permittees shall continue to sponsor or staff a table or booth at community, regional, and/or countywide events to distribute public education materials related to Urban Runoff pollution prevention to the public. Each Permittee shall participate in at least one event per year.

K. Successful implementation of the provisions and limitations in this Order will require the cooperation of all the public agency organizations within Riverside County having programs/activities that have an impact on Urban Runoff quality. This may include, but not be limited to, those listed in Appendix 2. As such, the Permittees should coordinate their efforts with those organizations where feasible and appropriate to ensure participation in implementing the requirements of this Order. The Permittees should notify the Regional Board where assistance is needed improving local cooperation.

L. Within 18 months of adoption of this Order, each Permittee shall develop BMP Fact Sheets for mobile businesses for distribution consistent with the requirements of Section XI.D.6. At a minimum, the mobile business Fact Sheets/training program should include: laws and regulations dealing with Urban Runoff and discharges to MS4; appropriate BMPs and proper procedures for disposing of Wastes generated from each mobile business category.

M. The Principal Permittee shall continue to develop and distribute BMP guidance for Permittee and contract field operations and maintenance staff to provide guidance in appropriate Pollution Prevention measures, how to respond to spills and reports of Illegal Discharges, etc.

XIV. PERMITTEE FACILITIES AND ACTIVITIES

A. Each Permittee shall continue to implement measures to ensure that their facilities and activities do not cause or contribute to a Pollution or Nuisance in Receiving Waters, as defined in Section 13050 of the Water Code. The Permittees must annually review their activities and facilities to determine the need for revisions to Section 5 of the DAMP and to their LIP. The Annual Report shall include the findings of this review and a schedule for any needed revisions. The Permittees should continue to use Facility Pollution Prevention Plans as noted in Chapter 5 of the DAMP to ensure that the Permittee facilities are not sources of Pollutants to the Waters of the US to the MEP.

B. Within 12 months of adoption of this Order, each Permittee shall review its inventory of fixed facilities listed in the DAMP, its field operations and MS4 facilities to ensure that Permittee facilities and activities are addressed by Facility Pollution Prevention Plans consistent with Chapter 5 of the DAMP and do not cause or contribute to a Pollution or Nuisance in Receiving Waters. Existing Facility Pollution Prevention Plans shall be reviewed to insure proper BMPs for these facilities. For Permittee facilities and/or activities tributary to CWA Section 303(d) Impaired Water Bodies that generate Pollutants for which the water body is Impaired, additional Pollutant-specific Source Control BMPs to target that Pollutant shall be identified and implemented in the Facility Pollution Prevention Plan to the MEP.

C. Each Permittee shall conduct inspections of its fixed facilities and field operations identified in Chapter 5 of the DAMP annually to ensure that they do not contribute Pollutants to Receiving Waters. The Permittees shall record the findings in the inspection forms developed by the Permittees. Each Permittee shall implement BMPs to manage the application, storage, and disposal of pesticides, herbicides, and fertilizers associated with their facilities and activities. At a minimum, the Facility Pollution Prevention Plans for these facilities and activities shall:

1. Ensure that Permittee applicators (including contractors) and distributors have appropriate training, permits, and certifications;
2. Utilize integrated pest management measures that rely on non-chemical solutions, to the extent practicable;
3. Promote the use of native vegetation into facility landscaping;
4. Include schedules for irrigation and chemical application to the extent feasible; and
5. Collect and properly dispose of unused pesticides, herbicides, and fertilizers.
6. The following BMP fact sheets are identified as minimum BMPs::
   i. SC-35/SC-61, Safer Alternative Products
   ii. SC-41, Building & Grounds Maintenance
   iii. SC-60, Housekeeping Practices
   iv. SC-73, Landscape Maintenance

D. Each Permittee shall review, update, and implement the individual clean out schedules and frequency for its MS4, including open channels, catch basins, retention/detention facilities and wetlands created for Urban Runoff treatment during the Wet and Dry Season to protect Receiving Water quality consistent with the MEP standard. The inspection and cleaning frequency for all portions of the specified MS4 shall be included in each Permittee's LIP and shall be evaluated annually to determine the need for adjusting the inspection and cleaning frequency. Each Permittee must clean those MS4 facilities where there is evidence of Illegal Discharge. In addition, each Permittee must clean those retention/detention basins and MS4 where the inspection reveals that the storage

volume is about 25% full or if accumulated sediment or debris impairs the hydraulic capacity of the facility.

E. Unless otherwise supported by field information, each Permittee shall at a minimum inspect, clean, and maintain at least 80% of its open channels, catch basins, retention/detention basins, and wetlands created for Urban Runoff treatment on an annual basis, with 100% of the facilities in a two year period. The MS4 clean out schedule shall continue to be included in the Annual Report.

F. Each Permittee shall examine opportunities to retrofit existing MS4 facilities with water quality protection measures, where feasible.

G. PERMITTEE COMPLIANCE WITH GENERAL PERMITS

1. GENERAL CONSTRUCTION PERMIT

a. All Permittee Construction Sites shall be in compliance with the latest adopted version of the General Construction Permit.

b. This Order authorizes the discharge of storm water runoff from Permittee Construction Sites that may result in land disturbance consistent with the acreage criteria of the General Construction Permit.

c. Prior to commencement of construction activities, the Permittees shall notify the Executive Officer of the proposed Construction Site by submitting a NOI, or Permit Registration Documents (PRDs) as provided in Attachment 5, and a location map depicting the Construction Site location. The filing fees for these NOIs/PRDs are waived for the Permittees.

d. Upon completion of the construction project, the Executive Officer shall be notified of the completion of the project by submitting (1) A Notice of Termination (NOT), provided in Attachment 5. (2) Photographs of the completed project; (3) A site map (depicting the project location and the locations of structural post-construction BMPs, including the latitude and longitude if appropriate); and (4) copies of the final field verification reports required under Section XII.I.

e. The Permittees shall develop, approve, and implement a WQMP for Permittee projects that meet the requirements of Section XII.D. of this Order.

f. The Permittees shall develop and implement a SWPPP and the monitoring and reporting program for their construction projects that meet the requirements of the latest version of the General Construction Permit. The Permittee must review and approve SWPPPs prepared by their contractors.

g. The Permittees shall give advance notice to the Executive Officer of planned changes in the construction activity, which may result in non-compliance with the latest version of the General Construction Permit.

h. Emergency Permittee projects required to protect public health and safety are exempted from compliance with the requirements of this subsection until the emergency ends, at which time they need to comply with the requirements of this section.

2. GENERAL DE-MINIMUS PERMIT DISCHARGES

a. The Permittees are authorized to discharge de-minimus types of discharges listed under the latest adopted version of the Regional Board's General De Minimus Discharge Permit, currently Order No. R8-2009-0003. The de-minimus discharges from Permittee owned and/or operated facilities and/or activities shall be in compliance with Order No. R8-2009-0003 except that the Permittees need not pay the filing fee.

b. The Permittees shall notify the Executive Officer of the proposed discharge at least 15 days prior to start of the discharge, by submitting a NOI and supporting documents, as provided in Attachment 7.

c. For existing Permittee Dischargers (authorized to discharge under Order No. R8-2009-003 prior to the adoption date of this Order), discharges will continue to be regulated under the terms and conditions of Order No. R8-2003-0003 until a new discharge authorization is issued, provided that the Discharger submits, by June 10, 2010, an updated NOI, a copy of the current Monitoring & Reporting Program previously issued to the Discharger, and proposed treatment modifications (if any). If no application for continued discharges are submitted by that date, the Discharger shall do one of the following:

i. Cease discharge and submit a letter informing the Regional Board that coverage under Order R8-2009-003 is no longer needed; or

ii. Apply for new discharge authorization as a new de-minimus discharge, under this Order.

XV. TRAINING PROGRAM FOR STORM WATER MANAGERS, PLANNERS, INSPECTORS AND MUNICIPAL CONTRACTORS

A. Within 24 months of adoption of this Order, the DAMP and each Permittee's LIP shall be updated to include a program to provide formal and where necessary, informal training to Permittee staff that implement the provisions of this Order. Formal training must be implemented as described herein and may consist of regional training provided by the Permittees or individual Co-Permittee training provided in-lieu of Principal Permittee training. Informal training (i.e. tailgate training) shall be implemented by each Permittee on an as-needed basis to supplement the formal

training. Each Permittee shall maintain a written and/or electronic record of stormwater training provided to its storm water and related program staff.

B. The training programs should be coordinated with the local Vector Control District to ensure that vector control issues related to post-construction BMPs maintenance and operation are incorporated into the training curriculum.

C. **Formal Training**: The formal training programs shall educate Permittee employees responsible for implementing requirements of this Order, by providing training on the following Permittee activities: construction site inspection, WQMP review, residential/industrial/commercial site inspection, and Permittee facility maintenance. Formal training may be conducted in classrooms or using videos, DVDs or other multimedia. The program shall consider all applicable Permittee staff such as storm water program managers, construction/industrial/ commercial/residential inspectors, planners, engineers, public works crew, etc. and shall: define the required knowledge and competencies for each Permittee compliance activity, outline the curriculum, include testing or other procedures to determine that the trainees have acquired the requisite knowledge to carry out their duties, and provide proof of completion of training such as Certificate of Completion, and/or attendance sheets. The formal training curriculum shall:

1. Highlight the potential effects that Permittee or Public activities related to their job duties can have on water quality.
2. Overview the principal applicable water quality laws and regulations that are the basis for the requirements in the DAMP.
3. Discuss the provisions of the DAMP that relate to the duties of the target audience, including but not limited to:
    a. The requirements of the DAMP regarding Storm Water Ordinances, resolutions, codes, and standards that relate to the duties of the target audience, including enforcement thereof;
    b. Overview of CEQA requirements contained in Section XII.C of this Order.
    c. Implementation and assessment of SWPPPs and Facility Pollution Prevention Plans relative to the duties of the target audience;
    d. Selection, implementation and maintenance of appropriate BMPs relative to the duties of the target audience;
    e. Tools, checklists and procedures included in the DAMP to assist in implementing the requirements of this Order relative to the duties of the target audience.

D. **Informal Training:** The informal training shall ensure that staff have the requisite knowledge to implement the applicable provisions in the Permittee's LIP, such as (but not limited to):

1. The requirements of local Storm Water Ordinances, resolutions, codes, and standards that relate to the duties of the target audience;
2. Local tools, checklists and/or procedures to implement the requirements of this Order relative to the duties of the target audience.
3. The proper use and maintenance of erosion and sediment controls;
4. Vector control issues related to storm water pollution control BMPs.

E. **Reporting**: Formal training shall be summarized and documented in the Annual Reports.

F. **Schedule**: At a minimum, the training schedule should include the following:

1. New Permittee employees responsible for implementing requirements of this Order must receive informal training within six months of hire and formal training within one year of hire.
2. Permittee facility maintenance staff must receive formal training at least once every two years.
3. Permittee inspection and code enforcement (if applicable) employees must receive formal or informal refresher training focused on appropriate BMP implementation at least once a year prior to the rainy season.
4. Other existing Permittee employees responsible for implementing the requirements of this Order must receive formal training at least once during the term of this Order.
5. The start date for training programs described in this Section shall be included in the schedule required in Section III.A.1.q, but shall be no later than six months after Executive Officer approval of DAMP updates applicable to the Permittee activities described in Section XIV.

G. The Permittees shall require verification of BMP training from contract staff where applicable.

H. The Permittee(s) shall include designated Regional Board staff on training notification e-mails announcing upcoming formal training sessions.

XVI. NOTIFICATION REQUIREMENTS

A. Within 24 hours of discovery, the Permittees shall provide oral or email notification to Regional Board staff of events within its jurisdiction that are determined to be an Emergency Situation. Following oral notification, a written report must be submitted within 10 days of receipt of notice of the Emergency Situation, detailing the nature of the non-compliance, any corrective action taken by the site/facility owner, other relevant information (e.g., past history of the Emergency Situation, environmental damage resulting from the Emergency Situation, site/facility owner responsiveness) and the type of enforcement, consistent with Section 4 of the DAMP, that will be carried out by the Co-Permittee. Further, incidences of noncompliance shall be

recorded along with the information noted in the written report and the final outcome/enforcement for the incident in the databases for Construction Sites, and Industrial or Commercial Facility inspections, as appropriate.

B. Notification requirements for non-Emergency Situations that are discovered during the course of Construction Site and Industrial Facility inspections that may be a violation of the General Stormwater Permits are addressed in Sections XI.A.7 of this Order.

C. Sewage spill notification shall be consistent with the timelines specified in the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ.

D. All reportable quantities of Hazardous Waste spills as per 40CFR 117 and 302 shall be reported within 24 hours. All spill incidents shall be also included in the Annual Report. These requirements are consistent with the Notification requirements for IC/IDs that are addressed in Section IX.B of this Order.

E. Enforcement requirements for Construction Sites and Industrial Facilities operating without an applicable General Stormwater Permit are specified in Section XI.A.7. These Sites and Facilities shall be reported within 14 calendar days to Regional Board staff by electronic mail or other written means. Permittees' notifications of facilities' failure to obtain required coverage under the General Construction Permit, or General Industrial Permit, including requirements to file PRDs. A PRD, NOI, No Exposure Certification, Notice of Non-applicability, and/or 401 Certification must include, at a minimum, the following documentation:

   1. Name of the Site or Facility
   2. Operator of the Site or Facility
   3. Owner of the Site or Facility
   4. Construction or Commercial/Industrial activity being conducted at the Site or Facility that is subject to the General Construction Permit, General Industrial Permit or 401 Certification
   5. Records of communication with the facility operator regarding the violation, which must include at least an inspection report.

F. The Permittees shall report to the Executive Officer:

   1. Any enforcement actions and known discharges of Urban Runoff to MS4 facilities, known to the Permittees, which may have an impact on human health or the environment consistent with Sections XI.A and XI.B above; if the discharge is to Canyon Lake or any tributary to Canyon Lake, Elsinore Valley Municipal Water District shall also be notified immediately; and
   2. Any suspected or reported activities on federal, state, or other entity's land or facilities, where the Permittees do not have any jurisdiction, and where the suspected or reported activities may be contributing Pollutants to Waters of the US

XVII. PROGRAM MANAGEMENT ASSESSMENT/DAMP REVIEW

A. By November 30 of each year, the Permittees shall evaluate the effectiveness of the Urban Runoff management program described in the DAMP to determine the need for any revisions in order to reduce Pollutants in MS4 discharges consistent with the MEP standard consistent with the reporting requirements in Appendix 3, Section IV.B. In addition, the first Annual Report (November 2010) after adoption of this Order shall include the following:

1. Review of the formal training needs of Permittee employees.
2. Review of coordination meeting/training for the designated NPDES inspectors.
3. Proposal for assessment of Urban Runoff management program effectiveness on an area wide as well as jurisdiction-specific basis. Permittees shall utilize the CASQA Guidance[58] for developing these assessment measures at the six outcome levels. The assessment measures must target both water quality outcomes and the results of municipal enforcement activities consistent with the requirements of Appendix 3, Section IV.B.

B. The Annual Report shall include the findings of this review and a schedule to address necessary revisions, or a copy of the amended DAMP with the proposed changes. Replacement pages are acceptable if modifications are not extensive. Annual Reports shall also be submitted in electronic format.

C. Upon the effective date of this Order, the Permittees shall implement the 2007 DAMP and modify it to be consistent with the requirements of this Order and the schedules contained herein.

D. Each Permittee shall designate at least one representative to the Management Steering Committee and Technical Committee. The Principal Permittee shall be notified immediately, in writing, of changes to the designated representative to either Committee. The designated representative for each Committee shall attend that Committee's meeting as follows: at least one (1) out of two (2) Management Steering Committee meetings and eight (8) out of ten (10) Technical Committee meetings per year to discuss issues related to permit implementation and regional and statewide issues.

E. The Permittees shall continue to implement all elements of the approved DAMP. Program elements revised in compliance with the requirements of this Order must be implemented in conformance with the schedules specified in this Order following approval of the Executive Officer.

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[58] CASQA, May 2007. Municipal Storm Water Program Effectiveness Assessment Guidance.

XVIII. FISCAL RESOURCES

A. Each Permittee shall exercise its full authority to secure the resources necessary to meet the requirements of this Order. This Order may be revised to adjust time schedules to accommodate prioritization of available resources.

B. The Permittees shall prepare and submit a financial summary to the Executive Officer. The financial summary shall be submitted with the Annual Report each year and shall, at a minimum, include the following:

1. Each Permittee's MS4 Permit compliance expenditures for the previous fiscal year;
2. Fiscal developments that may impact availability of funding for MS4 Permit compliance program implementation and to achieve the required implementation schedule;
3. Each Permittee's MS4 Permit compliance program budget for the current fiscal year;
4. A description of the source of funds to implement the MS4 Permit compliance program, and;
5. Each Permittee's estimated budget to implement the MS4 Permit compliance program for the next fiscal year.

XIX. MONITORING AND REPORTING PROGRAM

The Permittees must comply with Monitoring and Reporting Program No. R8-2010-0033, Appendix 3, and any revisions thereto, which are hereby made a part of this Order. The Executive Officer is hereby authorized to revise the Monitoring and Reporting Program in a manner consistent with this Order to allow the Permittees to participate in regional, statewide, national or other monitoring and reporting programs in lieu of or in addition to Monitoring and Reporting Program No. R8-2010-0033. In addition, dates for completion and implementation of certain program elements and reporting requirements are outlined in the Monitoring and Reporting Program.

XX. PROVISIONS

A. All reports submitted by the Permittees as per the requirements in this Order for the approval of the Executive Officer shall be publicly noticed and made available on the Regional Board's website, or through other means, for public review and comments. The Executive Officer shall consider all comments received prior to approval of the reports. Any unresolved significant issues shall be scheduled for a public hearing at a Regional Board meeting prior to approval by the Executive Officer.

B. Permittees shall demonstrate compliance with all the requirements in this Order and shall implement the DAMP and any modifications, revisions, or amendments thereto, which are developed pursuant to this Order or determined by the Permittees to be necessary to

meet the requirements of this Order. The DAMP, including any approved amendments thereto is hereby made an enforceable component of this Order.

C. The Permittees shall implement all elements of the DAMP and its components. Where the dates in the DAMP are different from the corresponding dates in this Order, the dates in this Order shall prevail. Any proposed revisions to the DAMP shall be submitted with the Annual Report for review and approval by the Executive Officer. All approved revisions to the DAMP shall be implemented as per the time schedules approved by the Executive Officer. In addition to those specific controls and actions required by: (1) the terms of this Order and (2) the DAMP and its components, each Permittee shall implement additional controls, if any are necessary, to reduce the discharge of Pollutants in Urban Runoff consistent with the MEP standard.

D. Certain BMPs implemented or required by the Permittees for Urban Runoff management may create habitat for vectors (e.g., mosquitoes and rodents) if not properly designed and maintained. Close collaboration and cooperative effort between the Permittees and local vector control agencies and the State Department of Health Services are necessary to minimize potential vector habitat and public health impacts resulting from vector breeding. Nothing in this Order is intended to prohibit inspection or abatement of vectors by the State or local vector control agencies in accordance with the respective Health and Safety Code.

E. Upon approval by the Executive Officer all plans, reports and subsequent amendments required by this Order shall be implemented and shall become an enforceable part of this Order. Prior to approval by the Executive Officer, these plans, reports and amendments shall not be considered as an enforceable part of this Order.

F. The MS4 permit application and special NPDES program requirements are contained in 40 CFR 122.21 (a), (b), (d)(2), (f), (p); 122.41 (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l); and 122.42 (c), and are incorporated into this Order by reference.

G. The Permittees must comply with all terms, requirements, and conditions of this Order. Any violation of this Order constitutes a violation of the CWA, its regulations and the California Water Code, and is grounds for enforcement action, Order termination, Order revocation and re-issuance, denial of an application for re-issuance, Order revisions, or a combination thereof.

H. Permittees must continue to take reasonable steps to minimize or prevent any discharge to the MS4 that has a reasonable likelihood of adversely affecting human health or the environment.

I. Regional Board staff, USEPA, and other authorized representatives must be allowed to:

1. Inspect Permittee records associated with compliance of this Order.

2. Access and copy records that are kept under the conditions of this Order.

3. Photograph and inspect any facilities or equipment (including monitoring and control equipment) that are related to or may impact storm water discharge or authorized Non-storm Water discharge.

4. Conduct sampling, and monitoring activities for the purpose of assuring compliance with this Order, or as otherwise authorized by the CWA and/or the Water Code.

5. Review the Permittee's programs and request the Regional Board to authorize modification to Permittee programs to comply with the requirements of this Order.

6. Request copies of data, monitoring reports, and sampling data and copies of the Permittee's conclusions and evaluations of the data.

J. This Order does not convey any property rights or any exclusive privileges.

K. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

L. When Permittees become aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Board, or USEPA, the Permitttees must promptly submit such facts or information.

M. All applications, reports, or information submitted to the Regional Board, State Board, and/or USEPA are to be signed and certified by either:

1. A principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA)

2. A duly authorized representative of the person in 1, above. A person is a duly authorized representative only if the authorization is made in writing by a person described above;

3. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

4. The written authorization is submitted to the Executive Officer.

5. If an authorization described above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Executive Officer prior to or together with any reports, information, or applications, to be signed by an authorized representative.

6. Any person signing a document described above must make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations".

XXI. PERMIT MODIFICATION

A. Following appropriate public notice, and in accordance with 40 CFR 122.41(f), this Order may be modified, revoked or reissued prior to its expiration date for the following reasons:
   1. To address significant changes in conditions identified in the technical reports required by the Regional Board which were unknown at the time of the issuance of this Order;
   2. To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Resources Control Board or any amendments to the Basin Plan (including TMDLS) approved by the Regional Board, the State Board and, if necessary, by the Office of Administrative Law and the USEPA;
   3. To comply with any applicable requirements, guidelines, or regulations issued or approved under the Clean Water Act, if the requirements, guidelines, or regulations contain different conditions or additional requirements than those included in this Order; or,
   4. To incorporate new or revised program elements and compliance schedule(s) necessary to comply with this Order;

B. The filing of a request by the Permittees for modification, revocation and re-issuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any conditions of this Order.

C. Pursuant to Section 13228 of the Water Code, the Regional Board may exercise its option for allowing the portion of the City of Murrieta located within the Santa Ana Region to be regulated by the San Diego Regional Water Quality Control Board under its Riverside County MS4 Permit. Similarly, if the San Diego Regional Water Quality Control Board authorizes this Regional Board to exercise authority over the City of Menifee within the

portions of the City regulated by the San Diego Regional Water Quality Control Board, this Regional Board will exercise its authority under this Order in those Regions.

XXII. PERMIT EXPIRATION AND RENEWAL

A. This Order expires on January 29, 2015, and the Permittees must file a ROWD no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements. The ROWD shall, at a minimum, include the following:

1. Names and mailing address(es) of the primary administrative and technical contacts for the Permittees that operate the MS4;
2. Any revisions to the DAMP including, but not limited to, all the activities the Permittees propose to undertake during the next permit term, goals and objectives of such activities, an evaluation of the need for additional source control and/or structural BMPs, any proposed pilot studies, etc.;
3. Changes in land use and/or population including map updates;
4. Any significant changes to the MS4 including map updates of the MS4; and
5. An assessment of the overall Urban Runoff management program and its effectiveness in meeting Water Quality Standards. If Water Quality Standards are not being met, the ROWD shall include new or revised program elements and compliance schedule(s) necessary to comply with Section VI of this Order.

B. The ROWD, Annual Reports and other information submitted under this Order shall be signed by either a principal executive officer or a ranking elected official (40 CFR 122.22(a)(3)) or a duly authorized representative as per 40 CFR 122.22(b).

C. This Order shall serve as an NPDES Permit pursuant to Section 402(p) of the Clean Water Act, or amendments thereto, and shall become effective ten days after the date of its adoption provided the Regional Administrator of the USEPA has no objections. If the Regional Administrator objects to its issuance, the Permit shall not become effective until such objection is withdrawn.

D. The Regional Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.

E. Order No. R8-2002-0011 is hereby rescinded.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 29, 2010**.**

_____

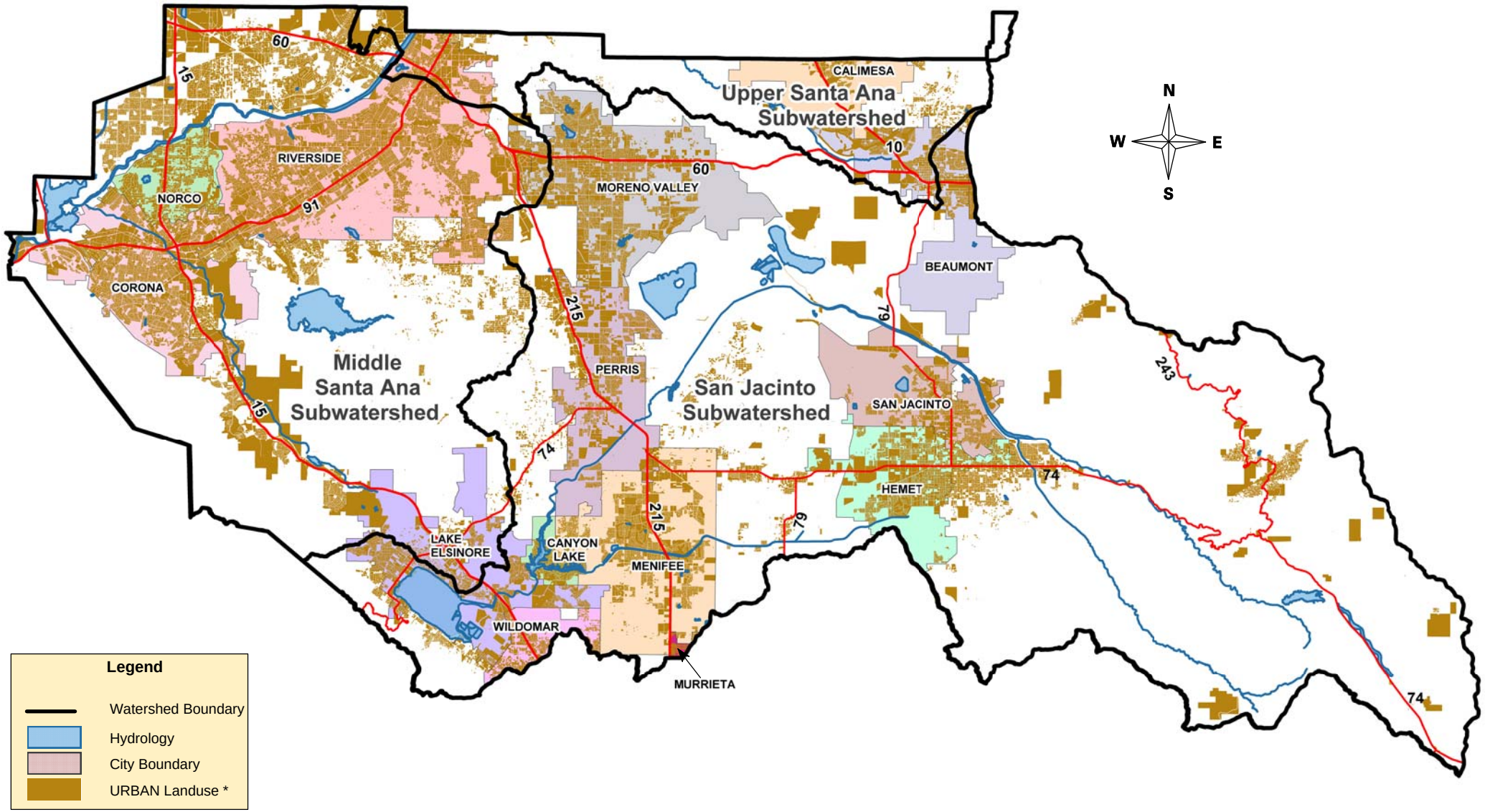
Gerard J. Thibeault
Executive Officer

APPENDIX 1

PERMIT AREA

ORDER NO. R8-2010-0033

ORDER NO. R8-2010-0033 (NPDES NO. CAS618003)
RIVERSIDE COUNTY AREA-WIDE URBAN RUNOFF MANAGEMENT PLAN



APPENDIX 1

*** Areas not in URBAN: Agricultural, State, Federal, Tribal, Preserves & Open Space, Rural-Residential, Highways/Freeways**

APPENDIX 2

OTHER ENTITIES THAT MAY DISCHARGE POLLUTANTS TO THE MS4

ORDER NO. R8-2010-0033

Appendix 2

OTHER POTENTIAL DISCHARGERS TO THE MS4s

Government Agencies

Department of the Air Force,
March Air Force Base – Special Districts
(regulated under an individual NPDES permit)
State Parks
U.S. Army Corps of Engineers
Caltrans (regulated under a state-wide NPDES permit)
Department of Corrections
U.S. Forest Service
U.S. Department of the Interior – Bureau of Land Management

Hospitals

Corona Community Hospital
Hemet Valley Medical Center
Kaiser Foundation Hospital – Riverside
Loma Linda Hospital (Sun City)
Parkview Memorial Hospital
Riverside Community Hospital
Riverside County Regional Medical Center
Riverside General Hospital

Railroads

AT&SF Railway Company
Burlington Northern Railroad Company
Southern Pacific Railroad Company
Union Pacific Railroad

Special Districts/ Wastewater Agencies

Edgemont Community Services District
Jurupa Community Services District
Santa Ana Watershed Project Authority
Rubidoux Community Services District
Valley Wide Park and Recreation District

School Districts

Alvord Unified School District
Corona – Norco Unified School District
Hemet Unified School District
Lake Elsinore Unified School District
Menifee Union School District
Moreno Valley Unified School District
Nuview Union School District
Perris Elementary School District
Perris Union High School District
Riverside Unified School District
Romoland School District
San Jacinto Unified School District
Val Verde School District

Universities and Colleges

California Baptist University
La Sierra University
Mt. San Jacinto College
Riverside Community College
University of California, Riverside
California School for the Deaf, Riverside

Water Districts

Eastern Municipal Water District
Elsinore Valley Municipal Water District
Lake Hemet Municipal Water District
Lee Lake Water District
Metropolitan Water District
Western Municipal Water District

Tribal Lands

Soboba Band of Luiseno Indians
Morongo Band of Mission Indians

APPENDIX 3

MONITORING AND REPORTING PROGRAM

ORDER NO. R8-2010-0033

State of California
California Regional Water Quality Control Board
Santa Ana Region

Monitoring and Reporting Program No. R8-2010-0033
NPDES No. CAS618033

for
Riverside County Flood Control and Water Conservation District,
The County of Riverside and the Cities of Riverside County
Within the Santa Ana Region
AREA-WIDE URBAN STORM WATER RUNOFF MANAGEMENT PROGRAM

I. OBJECTIVES

The overall goal of the Urban Runoff monitoring program is to support the development of an effective Urban Runoff management program. The following are the major objectives:

A. To identify those Receiving Waters, which, without additional action to control pollution from urban storm water runoff, cannot reasonably be expected to achieve or maintain applicable Water Quality Standards required to sustain the designated beneficial uses, the goals, and the objectives of the Basin Plan.

B. To develop and support an effective Urban Runoff management program.

C. To identify significant water quality problems, related to discharges of Urban Runoff within the Permit Area.

D. To determine water quality status, trends, and Pollutants of concern associated with Urban Runoff and their impact on the Beneficial Uses of the Receiving Waters.

E. To analyze and interpret the collected data to determine the impact of Urban Runoff and/or validate relevant water quality models.

F. To characterize Pollutants associated with Urban Runoff, and to assess the influence of urban land uses on Receiving Water quality and associated Beneficial Uses.

G. To identify other sources of Pollutants in Urban Run off to the maximum extent possible (e.g., including, but not limited to, atmospheric deposition, contaminated sediments, other non-point sources, etc.)

H. To identify and permit or prohibit Illicit Connections.

I. To identify, verify and prohibit Illegal Discharges.

J. To verify and to identify sources of Pollutants in Urban Runoff.

K. To evaluate the effectiveness of the DAMP and WQMPs, including an estimate of Pollutant reductions achieved by the Site Design (Low Impact Development [LID], Treatment Control and Source Control BMPs implemented by the Permittees.

L. To evaluate the effectiveness of proposed Urban Runoff management programs to protect Receiving Water quality.

II. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR 122.41(j)].

1. This includes any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality in the case of storm channels and flow quality in the case of streams and lakes

2. All sample collection, handling, storage, and analysis shall be in accordance with test procedures under 40 CFR Part 136 (latest edition) "*Guidelines Establishing Test Procedures for the Analysis of Pollutants*," promulgated by the USEPA, the guidance being developed by the State Board pursuant to Water Code Section 13383.5, or other methods which are more sensitive than those specified in 40 CFR 136 and approved by the Executive Officer.

3. For priority Toxic Pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) shall be used for all analyses, unless otherwise specified.

4. For priority Toxic Pollutants, if the Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Principal Permittee must submit documentation from the laboratory to the Regional Board Executive Officer for approval prior to raising the ML for any constituent.

B. All chemical, bacteriological, and Toxicity analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.

C. Analytical methods, target reporting limits and data reporting formats shall be compatible with California's Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Management Plan and with SWAMP's Procedures for Conducting Routine Field Measurement unless otherwise specified in this Monitoring and Reporting Program (MRP).

D. Revisions of this MRP are appropriate to ensure that the Permittees are in compliance with requirements and provisions contained in this Order. Revisions may be made under the direction of the Executive Officer at any time during the term of the Order, and may include redistribution of monitoring resources to address TMDL needs, a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples collected.

E. The Executive Officer is authorized to allow the Permittees to participate in regional, statewide, national, or other monitoring programs in addition to or as part of this Urban Runoff monitoring program. Also, the Permittees are authorized to complement their Urban Runoff monitoring data with data from other monitoring sources, provided the monitoring conditions and sources are similar to those in the Santa Ana River watershed.

F. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both [40 CFR 122.41(j)(5)].

III. MONITORING PROGRAM

A. The Principal Permittee has been monitoring Urban Runoff and Receiving Waters since the first MS4 permit term. The Principal Permittee currently implements the Consolidated Monitoring Program (CMP) and participates in a number of other storm water or TMDL related monitoring programs such as: TMDL Bacterial and Nutrient Monitoring, WLA Compliance, BMP Effectiveness, Urban Source and Trend Evaluation, Receiving Water Quality, Hydromodification and Bioassessment. The Principal Permittee shall continue to implement the CMP and continue to participate in other related monitoring programs.

B. The Principal Permittee, on behalf of the Co-Permittees, participates (through a memorandum of understanding and cooperative agreements) with the 16 member agencies of the Storm Water Monitoring Coalition (SMC). The Permittees shall continue to cooperate with other MS4 permittees (including

Orange County and San Bernardino County), Southern California Coastal Water Research Project (SCCWRP), POTW operators, the dairy industry, the Santa Ana Watershed Project Authority (SAWPA), and other public and private organizations in the watershed to develop coordinated surface water quality monitoring programs, databases, and special studies as appropriate. The Regional Board supports continued coordination with SCCWRP and the SMC to facilitate and implement coordinated watershed based monitoring programs. The Permittees may use coordinated monitoring efforts such as the Middle Santa Ana River (MSAR) and Lake Elsinore/Canyon Lake (LE/CL) TMDL Task Forces, SCCWRP and SMC regional monitoring programs to address partially, or in full, the requirements of this MRP. A proposed coordinated monitoring program shall result in the development and implementation of a monitoring plan that:

1. Fully addresses the requirements of this MRP;

2. Describes how the external monitoring programs address the requirements of the MRP;

3. Include a quality assurance plan, including data management, validation, verification mechanism for the portions of the monitoring directly conducted by the Permittees;

4. Reference the locations of the quality assurance plans for regional components; and

5. Result in a coordinated Annual Report summarizing the pertinent Urban Runoff data from the coordinated programs necessary to address this MRP.

C. Within 12 months of adoption of this Order, the Permittees shall review the CMP, Regional and TMDL related monitoring programs that they conduct or participate to determine their effectiveness in achieving the Urban Runoff assessment requirements contained in Section IV.B, below. If this review indicates any data gaps, the Principal Permittee shall submit a revised CMP, or coordinate revisions to other regional programs for approval of the Executive Officer to ensure that the combined efforts adequately address the requirements of Section IV.B. The revised CMP, including a description of how other regional efforts combine with the CMP to address requirements of Section IV.B shall be submitted within 16 months of adoption of this Order and shall be implemented within six months of its approval by the Executive Officer. Pending approval of the revised CMP, current monitoring efforts will continue to be implemented.

D. <u>TMDL/303(d) Listed Waterbody Monitoring</u>: The Permittees identified as dischargers in adopted TMDLs shall continue to participate in TMDL monitoring programs as required by TMDL Implementation Plans. The compliance schedules for the two approved TMDLs within the Permit Area are beyond the five year MS4 Permit term. This Order requires Permittees identified as

dischargers in their respective TDMLs to conduct monitoring required by the TMDL Implementation Plans to determine the effectiveness of the BMPs implemented in reducing Pollutant loads and eventually to attain WLA by the deadlines specified in the respective TMDL Implementation Plans.

1. MSAR Bacteria WLA TMDL USEP monitoring

    a. On June 14, 2007, the TMDL task force members submitted a source evaluation plan and a monitoring plan. The Regional Board approved these plans on June 29, 2007, Resolution No. R8-2007-0046. A revised monitoring plan and an urban Bacterial Indicator source evaluation plan were approved by the Regional Board on April 18, 2008, Resolution No. R8-2008-0044. The MSAR Permittees within the MSAR watershed shall continue to conduct monitoring and source evaluations in accordance with the approved plans and report the findings in accordance with the schedules specified in the approved plans or as updated by subsequent Regional Board approved revisions.

    b. In conformance with Task 3 of the TMDL Implementation Plan contained in Resolution R8-2005-0001, the Permittees shall individually, or in conjunction with the MSAR TMDL Task Force, prepare a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs. The first report shall be due February 15, 2010.

    c. The Permittees shall conduct monitoring and reporting consistent with Section VI.D. of this Order to evaluate the effectiveness of the BMPs implemented in the watershed and determine their progress towards attaining compliance with the interim WQBELs, and final BMP-based WQBELS, if approved, or the final numeric WQBELS/WLAs.

2. Lake Elsinore/Canyon Lake Nutrient TMDL

    a. Monitor and report the effectiveness of the BMPs implemented in the watershed to control nutrient inputs into the lakes from Urban Runoff. Submit an Annual Report summarizing all relevant data from water quality monitoring programs and evaluating compliance with the LE/CL TMDL by reporting the effectiveness of the BMPs implemented in the watershed to control nutrient inputs into the lake from Urban Runoff pursuant to Regional Board Resolution No. R8-2006-0031 and R8-2007-0083, or as amended by subsequent Regional Board adopted resolutions.

    b. The Permittees shall conduct monitoring and reporting consistent with Section VI.D. of this Order to evaluate the effectiveness of the BMPs implemented in the watershed and determine their progress towards attaining compliance with the interim WQBELs, and final BMP-based WQBELS, if approved, or the final numeric WQBELS/WLAs.

E. In addition, any requirements developed by the State Board in accordance with Water Code Section 13383.5 shall be considered during any revision of the CMP. The revised CMP shall, at a minimum, include the following:

1. Mass Emissions Monitoring – Core Stations:

a. An estimate of flow in cubic feet per second (cfs) from the Outfall/stream at the time of sampling.

b. Monitor mass emissions in Urban Runoff to:

i) Estimate the total mass emissions from the MS4s to Receiving Waters.

ii) Assess trends in mass emissions associated with specific urban storm water discharges from the MS4 over time.

iii) Determine if Urban Runoff may be contributing to exceedances of Water Quality Objectives or Beneficial Uses in Receiving Waters by comparing water quality data from Outfall and Receiving Water results to: (1) Water quality Objectives (WQOs); (2) California Toxic Rule (CTR) (3) USEPA Multi-Sector Permit Parameter Benchmark Values and (4) other MS4 discharger's monitoring data or other appropriate data identified by the Permittees. The Permittees should also evaluate the Regional Monitoring reports prepared by SCCWRP to assess trends in Urban Runoff and Receiving Water quality within the Permit Area.

iv) Representative samples from the first sampleable storm event (based on mobilization criteria to be established in the CMP) of the Wet Season (October 1 to May 31) and two more storm events shall be collected during the Wet Season. A minimum of two Dry Weather samples shall also be collected. Samples from the first sampleable storm event each year shall be analyzed for constituents according to the list provided in the 2007-2008 Santa Ana Region Monitoring Annual Report, Attachment A. This list includes 40 CFR 122 Appendix D Tables II and III, and Tables IV and V if expected to be present, and additional constituents. All samples shall be analyzed for *E. coli*, nutrients (Nitrates + Nitrites, potassium, and phosphorous), hardness[1], metals, pH, TSS, TOC, pesticides/herbicides, and Pollutants/stressors for 303(d) listed Receiving Waters. Dry Weather samples should also include analyses for TPH (8015M – direct injection) and oil and grease. The analyte list will be reviewed annually. Constituents may be added to the list for a selected monitoring station if they are expected to be present, and removed from the list if three consecutive samples from the station have not had detectable concentrations of the constituent.

[1] Hardness is necessary to evaluate some metal Water Quality Objectives in receiving waters.

v) Monitoring locations shall be integrated into a GIS database system. All monitoring data shall continue to be placed in an electronic database.

2. Water Column Toxicity Monitoring: Analyses for Toxicity to aquatic species shall be performed on receiving water samples to determine if there may be impacts of Urban Runoff on Toxicity of Receiving Waters. The *Ceriodaphnia dubia* survival (acute), Fathead Minnow larval survival (acute), and Selenastrum Capricornutum growth (chronic) tests shall be used to evaluate Toxicity on the sample from the first sampleable storm event, plus one other Wet Season storm event sample. Where applicable, two Dry Weather samples shall also be collected or equivalent procedures shall be proposed in the CMP. In addition, criteria shall be identified which will trigger the initiation of Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TREs).

   To the extent that the Toxicity testing developed as part of the Regional Bioassessment Monitoring described in item 5 and Section D below, or other standardized Toxicity testing protocols developed by the State Board, Regional Board, SMC or SCCWRP, satisfies the objective of determining the impact of Urban Runoff on Toxicity of Receiving Waters, the Permittees may satisfy this requirement by participating in the regional bioassessment effort or conducting Toxicity testing consistent with the standardized protocols.

3. Illicit Connection/Illegal Discharge (IC/ID) Monitoring: The Permittees shall review and update their Dry Weather and Wet Weather reconnaissance strategies to identify and eliminate IC/IDs using the Guidance Manual for Illicit Discharge, Detection, and Elimination developed by the Center for Watershed Protection[2] or any other equivalent program. Where possible, the use of GIS to identify geographic areas with a high density of industries associated with gross Pollution (e.g. electroplating industries, auto dismantlers) and/or locations subject to maximum sediment loss (e.g. New Development) may be used to determine areas for intensive monitoring efforts. The Dry Weather monitoring for nitrogen and total dissolved solids shall be used to establish a baseline dry weather flow concentration for TDS and TIN at each Core monitoring location.

4. Sources of Data: Where possible and applicable, water quality data shall be obtained from monitoring efforts of other public or private agencies/entities (e.g., Caltrans).

5. Bioassessment: In lieu of developing an independent bioassessment program as required in the prior term permit, the Principal Permittee, on behalf of the Co-Permittees, participates (through a memorandum of understanding and cooperative agreements) with the 16 member agencies of the SMC. The SMC's Bioassessment Working Group conducts bioassessments on a regional basis. The Principal Permittee in coordination with SCCWRP shall ensure that

[2] USEPA (Illicit Discharge Detection and Elimination - A Guidance Manual for Program Development and Technical Assessments) by the Center for Watershed Protection and Robert Pitt, University of Alabama, October 2004, updated 2005).

a sufficient number of monitoring stations are selected for this program from locations within the Permit Area.

a. The Principal Permittee, in collaboration with the SMC, shall conduct sampling, analysis, and reporting of specified in-stream biological and habitat data within the 5-year permit cycle according to the protocols specified in the SCCWRP Tech Report No. 539.

b. Within Riverside County, the bioassessment project area consists of the lower half of the MSAR watershed, the San Jacinto watershed, and the northern Santa Margarita watershed (northern San Diego) for a total of 1.5 watershed units, a minimum of 9 samples shall be collected per year[3]. Within Riverside County's Santa Ana and San Jacinto Watersheds, which are in the Permit Area, the Permittees shall sample 5 sites per year. SWAMP samples 2 sites per year.

c. For long-term trend monitoring, the Principal Permittee shall collect a minimum of 1 sample per year during the dry weather index period, as noted in the SCCWRP Tech Report No. 539. Additional samples may be collected to improve data quality for trend analysis. At a minimum, chemistry and aquatic Toxicity should be used as indicators for trend analysis.

d. Any baseline and historic information on stream geomorphology and ecological health, including aquatic habitats, in the Receiving Waters and the findings from the trend analysis shall be used to evaluate the effectiveness of Urban Runoff management program, including the requirements specified in the Order.

6. A Quality Assurance Program Plan (QAPP) within the CMP that describes how data will be collected and analyzed to ensure that data is consistent with State and Regional Board monitoring programs and is of high quality. Dischargers shall develop a QAPP that is compatible with the State's Surface Water Ambient Monitoring Program (SWAMP) QAPP and approved by the Regional Board's Quality Assurance Officer. A QAPP template is available, upon request, through the State Board's SWAMP website (http://www.waterboards.ca.gov/water_issues/programs/swamp/qapp.shtml). All analytical methods, target reporting limits, and data reporting formats should be SWAMP compatible unless otherwise specified in this MRP. The QAPP will include location of sample site(s), description of analytical techniques, data quality objectives, and other standard quality assurance information.

[3] See Table 4 page 15 of Technical Report No.539.

7. A procedure for the collection, analysis, and interpretation of existing data from local, regional or national monitoring programs. These data sources may be utilized to:
   a. Characterize different sources of Pollutants discharged to the MS4;
   b. Determine pollutant generation, transport and fate;
   c. Develop a relationship between land use, development size, storm size and the event mean concentration of Pollutants;
   d. Determine spatial and temporal variances in Urban Runoff quality and seasonal and other bias in the collected data; and
   e. Identify any unique features of the permitted area.
   f. The Permittees are encouraged to use water quality data from similar studies, if available.

8. The CMP update shall include descriptions of:
   a. The number of monitoring stations;
   b. Monitoring locations within MS4s, Major Outfalls, and Receiving Waters; environmental indicators (e.g., ecosystem, flow, biological, habitat, chemical, sediment, stream health, etc.) chosen for monitoring; The initial update shall at least contain the sampling stations listed in Table 1, below:

Table 1 Current Core Monitoring Stations

Station Number	Class	Station Description	Latitude	Longitude
40	Outfall	Corona Storm Drain – Line K Harrison & Sheridan St.	33.885	-117.568611
316	Outfall	Sunnymead Chanel – Line B Alessandro & Heacock	33.917778	-117.242222
318	Outfall	Hemet Channel @ Sanderson Ave.	33.734167	-117.005556
364	Outfall	Magnolia Center – SD @ Santa Ana River	33.964722	-117.414444
702	Outfall	University Wash – Market & Bowling Green	33.9975	-117.370833
707	Outfall	North Norco Channel @ Country Club Lane	33.907778	-117.583889
752	Outfall	Perris Line J - Sunset Ave below Murrieta Rd.	33.803333	-117.2075

   c. Total number of samples to be collected from each station, frequency of sampling during Wet Weather and Dry Weather, short duration or long duration storm events, type of samples (grab, 24-hour composite, etc.), justification for composite versus discrete sampling, type of sampling equipment, quality assurance/quality control procedures followed during sampling and analysis, analysis protocols to be followed (including sample preparation and maximum reporting limits), and qualifications of laboratories performing analyses;

d. A procedure for analyzing the collected data and interpreting the results. This procedure shall include the evaluation of the effectiveness of the BMPs, a comparative analysis of the Permittees' monitoring data to the USEPA Multi-Sector Permit Parameter Benchmark Values and applicable Water Quality Objectives specified in Chapter 4 of the Basin Plan, and the need for any refinement of the WQMPs, the DAMP and or/the LIPs.

e. Parameters selected for field screening and for laboratory work; and

f. A description of the responsibilities of all the participants in this program, including cost sharing.

g. Receiving Water Monitoring:

Permittees shall select at least one representative receiving water location within each of the San Jacinto River and Santa Ana River watersheds. These locations should be close Major Outfalls, coordinated with other regional monitoring programs to the extent feasible, include locations where chronic and/or persistent water quality problems associated with Urban Runoff have been identified, and should be selected so as to be useful to determine if Urban Runoff is causing or contributing to violations of Water Quality Standards in the Receiving Waters.

h. Monitoring within MS4s:
Permittees shall evaluate their current CMP MS4 monitoring locations (identified in Table 1, above) to ensure that they are representative of urban runoff. The objective of this monitoring element is to determine the pollutant loads from the MS4s and to determine their trend. This monitoring requirement may be incorporated into the mass emissions monitoring described in III.E.1, above.

F. REGIONAL WATERSHED MONITORING

1. The objectives of the Regional Watershed Monitoring Program overseen by the SWAMP and the SMC and coordinated by SCCWRP are:

   a. To assess the current status of streams in Southern California.

   b. To identify major stressors to aquatic life.

   c. To monitor the trend in water quality in Southern California streams.

2. The bioassessment discussed above, should provide information about the biological, chemical and toxicological integrity of Receiving Waters. Baseline and trend monitoring information on the biotic and geomorphological condition of the Receiving Waters should be used to evaluate the effectiveness of the Urban Runoff pollution control measures.

3. The Riverside County Regional Watershed monitoring area is within the lower half of the MSAR watershed, the San Jacinto watershed, and the northern Santa Margarita watershed (northern San Diego) for a total of 1.5 watershed units[4]. Within Riverside County's Santa Ana and San Jacinto watersheds, the Permittees sample 5 sites per year. SWAMP samples 2 sites per year.

4. The sampling sites in each watershed unit were determined according to distribution or abundance of the three land uses: urban, agriculture, or open. The sampling grid includes 15 watershed units located from Ventura to San Diego and as far east as San Bernardino and Riverside Counties. A total of 450 samples in the 15 watershed units will be collected within a five year period to assess the spatial extent of impacts to streams within the area. Samples will be collected at sites representing each of the three land use types. Each site will be sampled only once during an index period and not all sites need to be sampled during the same year. One-fifth of the samples (90 samples) will be collected each year for the 15 watersheds. Sampling events shall be conducted between 4 to 12 weeks following the last significant rainfall. No sampling shall occur within 72 hours of any measurable rainfall. The default index period will be from May 15 to July 15. The specifics and details of the Regional Watershed Program are discussed in "The Regional Monitoring of Southern California's Watershed SMC Bioassessment Working Group", SCCWRP, Technical Report No. 539, December 2007 (The Tech Report).

5. Any baseline and historic information on stream geomorphology and ecological health, including aquatic habitats, in the Receiving Waters and the findings from the trend analysis shall be used to evaluate the effectiveness of Urban Runoff management program, including the requirements specified in the Order.

G. HYDROMODIFICATION MONITORING PROGRAM

This Order requires development and implementation of a Hydromodification Monitoring Plan as part of the Watershed Action Plan (WAP) to evaluate the effectiveness of hydromodification controls implemented within the Permit Area (Some or all of the following requirements may be satisfied by the Permittees participation in the "Development of Tools for Hydromodification Assessment and Management' Project" undertaken by the SMC and coordinated by SCCWRP and follow on efforts to develop Hydromodification monitoring guidance).

1. The Order requires the Permittees to revise the DAMP to incorporate Watershed Action Plan principles within three years of adoption of the Order. The hydromodification requirements require the Permittees to identify

[4] See Table 4 page 15 of Technical Report No.539.

vulnerable streams and possible BMPs to minimize HCOCs and tools to measure any impacts on geomorphology and aquatic resources.

2. The Hydromodification monitoring program shall:

   a. Assess the effectiveness of Hydromodification management within the Permit Area.

   b. Predict the effects of urbanization on stream stability within the Permit Area.

H. LOW IMPACT DEVELOPMENT BMP MONITORING

The Principal Permittee shall continue to participate in data collection and monitoring to assess the effectiveness of LID techniques in semi-arid climate as part of the SMC project titled, "Quantifying the Effectiveness of Site Design/ Low Impact Development Best Management Practices in Southern California". The Principal Permittee is also developing a regional LID BMP testing and demonstration facility at the main office that meets the intent of this requirement (currently the facility data is intended to be integrated into the SMC project).

IV. RECORD KEEPING REQUIREMENTS

A. All monitoring activities shall meet the following requirements:

1. The Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports prepared as per this MRP and records of all data used to complete the Report of Waste Discharge and Annual Reports for a period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Board or USEPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge [40 CFR 122.41(j)(2), CWC section 13383(a)].

2. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

3. Calculations for all Effluent Limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this MRP [40 CFR 122.41(l)(4)(iii)].

B. PROGRAM EFFECTIVENESS ASSESSMENT AND REPORTING

1. All progress reports and proposed strategies and plans required by this Order shall be signed by the Principal Permittee, and copies shall be submitted to the Executive Officer under penalty of perjury.

2. The Permittees shall submit an Annual Report to the Executive Officer and to the Regional Administrator of the USEPA, Region 9, no later than November 30th, of each year. This progress report shall also be submitted in a mutually agreeable electronic format that is text searchable. Any monitoring data shall also be submitted electronically in the form outlined in Section IV.B.4 of this MRP. At a minimum, the Annual Report shall include the following:

   a. A review of the status of program implementation and compliance (or non-compliance) with the schedules contained in this Order;

   b. An assessment of the effectiveness of BMPs established under the IC/ID program and the DAMP. The effectiveness may be measured in terms of how successful the program has been in eliminating IC/IDs and/or reducing pollutant loads in urban storm water runoff, including summaries of Permittee actions to investigate and eliminate or permit IC/IDs and measures to reduce and/or eliminate the discharge of Pollutants, including trash and debris

   c. As assessment of BMPs and their effectiveness in addressing Pollutants causing or contributing to an exceedance of water quality objectives in Receiving Waters that are on the 303(d) list of impaired waters. The effectiveness evaluation shall consider changes in land use and population on the quality of Receiving Waters and the impact of development on sediment loading within sediment impaired Receiving Waters and recommend necessary changes to program implementation and monitoring needs.

   d. An assessment of the Permittees compliance status with the Receiving Waters Limitations, Section VII of this Order, including any proposed modifications to the DAMP if the Receiving Water Limitations are not fully achieved.

   e. An overall program assessment. The Permittees are encouraged to use the program assessment methodology described in the 2007 ROWD. The Permittees should determine, to the extent practicable, water quality

improvements and Pollutant load reductions resulting from implementation of various program elements. The Permittees may also use the "Municipal Storm Water Program Effectiveness Assessment Guidance" developed by CASQA in May 2007 as guidance for assessing program effectiveness at various outcome levels. The assessment should include each program element required under this Order, the expected outcome and the measures used to assess the outcome. The Permittees may propose any other methodology for program assessment using measurable targeted outcomes.

f. Description of program modifications and improvements identified during the program assessment above along with implementation schedule for incorporation of revisions into the Local Implementation Plans (LIPs).

g. An assessment of any modifications to the WQMPs, or the DAMP made to comply with CWA requirements to reduce the discharge of Pollutants to the MEP;

h. A summary, evaluation, and discussion of monitoring results from the previous year and any changes to the monitoring program to be made the following year;

i. A fiscal resources analysis progress report as described in Section XVIII.B of Order No. R8-2010-0033 including:

   i. Each Permittee's expenditures for the previous fiscal year;

   ii. Each Permittee's budget for the current fiscal year; and

   iii. A description of the source of funds.

j. A draft work plan that describes the proposed implementation of the LIPs and DAMP for next fiscal year. The work plan shall include clearly defined tasks, responsibilities, and schedules for implementation of the storm water program and each Permittee's actions for the next fiscal year;

k. Major changes in any previously submitted plans/policies;

l. If the Implementation Agreement is revised, a copy of the signature page and revisions to the Implementation Agreement.

m. A review of each Permittee's Storm Water Ordinances and their enforcement practices to assess their effectiveness in prohibiting non-exempt, Non-storm Water discharges to the MS4 (The Permittees may propose appropriate BMPs in lieu of prohibiting these discharges, where the Permittees are responsible for ensuring that dischargers adequately maintain those BMPs).

3. The Co-Permittees shall be responsible for the submittal of all required information/materials needed to comply with this order in a timely manner to the Principal Permittee. A duly authorized representative of the Co-Permittee shall sign all such submittals under penalty of perjury.

4. The monitoring data transmittals to the Regional Board shall be in the form developed by the SMC and approved by the State Board in the document entitled "Standardized Data Exchange Formats". This document was developed in order to provide a standard format for all data transfers so that data can be universally shared and evaluated from various programs.

V. REPORTING SCHEDULE

All reports required by this Order shall be submitted to the Executive Officer in accordance with the following schedule:

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
III.A.1.e III.B.3.a,d,e & XVII.D.		Management Steering Committee meetings to discuss MS4 Permit implementation	Held at least twice per year.	Annual Report
III.A.1.f III.B.3.a,d,e & XVII.D.		Permittee Technical Committee meetings to discuss permit implementation	Held at least 10 times each year	Annual Report
III.B.3.a,d,e & XVII.D.		Co-Permittees participate in Management Steering and Technical Committee meetings to discuss MS4 Permit implementation	Attend at least 1 out of 2 Management and 8 out of 10 Technical meetings each year	Annual Report
III.A.1.r		The Principal Permittee shall develop a library of BMP performance reports, and revise the BMP performance report annually thereafter.	Within 6 months of permit adoption	
III.A.1.s		The Principal Permittee shall coordinate a review of the DAMP with the Co-Permittees to determine the need for update or revisions and establish a schedule for those revisions.	Within 6 months of permit adoption	
III.B.2.g		Submit up-to-date MS4 facility maps	Annually to Principal Permittee	Annual Report

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
III.B.2.h		Submit reports & information for Annual Report	Annually to Principal Permittee	Annual Report
III.C.		Evaluate Implementation Agreement annually to determine need for revision.	Annually	Report findings and schedule for revisions to the Implementation Agreement in 2009-2010 Annual Report.
III.C.		Allow new permittees to join MS4 permit	Per schedule required in Section III.A.1.s	Report findings and schedule for revisions to the Implementation Agreement in 2009-2010 Annual report.
IV.A.		Permittees shall develop and submit for approval a LIP Template	Within 6 months of adoption of Order	
IV.B.		Complete a Co-Permittee specific LIP	Within 12 months of approval of the Template	Within 12 months of approval of the Template
VI.D.1.a.ii		Submit reports summarizing all relevant data from the watershed-wide water quality monitoring program.	Beginning in 2010 Cool (or wet) weather Warm (or dry) weather	 May 31st December 31st.
VI.D.1.a.iii		Submit comprehensive reports every three years summarizing the data collected for the preceding 3 year period and evaluating progress towards achieving the urban waste load allocation by the dates specified in the TMDL.	Beginning in 2010 every three years	February 15, 2010.
VI.D.1.a.iv		Submit semi-annual reports each year as required under the approved USEP, and any amendments thereto.	The Dec 31st report (VI.D.1.a.ii) and the Jan 31st report (VI.D.1.a.iv) may be incorporated into the (VI.D.1.a.ii) report for the years the tri-annual report is generated.	Semi-annually on January 31st and July 31st

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
VI.D.1.a.v		Revise the DAMP as specified in Task 4.2 of the MSAR-TMDL Implementation Plan.	Sumarize data in Annual Report.	Annual Report
VI.D.1.a.vi		Revise the Water Quality Management Plan (WQMP)	As specified in Task 4.4 of the MSAR-TMDL Implementation Plan.	Annual Report
VI.D.1.a.vii		Amend the Local Implementation Plans (LIP) to be consistent with the revised DAMP and WQMPs within 90 days after said revisions are approved by the Regional Board. Summarize any such LIP amendments in the annual report		Annual Report
VI.D.1.b. & VI.D.1.c.		The MSAR Permittees shall submit a Comprehensive Bacteria Reduction Plan (CBRP) to achieve the final WQBELs for bacterial indicators during the Dry Season by December 31, 2015. Enforcement starts no sooner than January 1, 2016		Draft by December 31, 2010 Final by Dec 31, 2015.
VI.D.1.c.i.(8)		Revise the DAMP, WQMP, & LIPs	Within 180 days of CBRP approval.	
VI.D.2.a.		Submit Phase 2 Alternatives	December 31, 2010	
		Submit O&M for Agreement for Fishery Management Program	December 31, 2010	
		Submit O&M for Agreement for Aeration and Mixing Systems	December 31, 2010	
		Submit Phase 2 Projects Plans	June 30, 2011	
		Complete Phase 2 Project Implementation	December 31, 2014	
		Implement in-lake and watershed monitoring programs	Annual Reports due August 31 every year.	
VI.D.2.b.		Linkage Analysis Study	August 31, 2010	
		Watershed Source Loading Study	August 31, 2010	

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
		Model Evaluation	December 31, 2010	
		Construct/Calibrate Model	June 30, 2011	
		Conduct Model Scenarios	August 31, 2011	
		Model Update Final Report	November 30, 2011	
VI.D.2.c.		Revise DAMP, WQMP, & LIPs to incorporate the compliance plans required above.		Annual Report
VI.D.2.h.		Summarize all relevant data from water quality monitoring programs and evaluate compliance with the LE/CL TMDL	Annually	Annual Report
VI.D.2. d. & VI.D.2. e.		Submit CNRP	December 31, 2011	December 31, 2020.
VI.D.2.a.		Initiate Phase 2 LE/CL TMDL data collection.	December 31, 2010	
VI.D.2.j.		Tables 9 & 10 become WQBELs if CNRP is not adopted by Regional Board	December 31, 2020	
VII.D.1		Report upon determination that discharges from the MS4 are causing or contributing to an exceedance of an applicable WQS	Within two (2) working days	Within Annual update of DAMP
VII.D.2		Modify DAMP, LIP, and MRP to address Receiving Water Limit Violations and implementation schedule.	---	30 days after approval of Subsection VI.D. report by Executive Officer
VII.D.4		Report any exceedance solely due to discharges outside the Permittees jurisdiction.		Within two (2) working days of becoming aware of the situation, provide oral or e-mail notice and provide written documentation within ten (10) calendar days of becoming aware of the situation.
VIII.C.		Promulgate ordinances that would control for known pathogen or Bacterial Indicator sources	Within 3 years of adoption	Annual Report

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
VIII.F.		Review Storm Water Ordinances for effectiveness in prohibiting discharges to the MS4	Annual Report	
VIII. G.		Certification statement, signed by the Chief legal counsel, that the Permittee has obtained all necessary legal authority	Within 24 months of Order adoption.	Annual Report
VIII.H.		Permittees shall effectiveness of, implementation and enforcement response procedures.	Annually	Annual Report
IX. A.		Eliminate or permit IC/IDs		60 calendar days from receipt of notice from a third party.
IX.D.		Review and revise IC/ID program	18 months after Order adoption	Annual Report
IX.G.		Annually review and evaluate their IC/ID or IDDE program to determine if the program needs to be adjusted.	Annually	Annually
IX.H.		Maintain database summarizing IC/ID incident response	Annually	Annual Report
X.D.		Maintain inventory of septic systems within its jurisdiction completed in 2008.	Ongoing	Annual Report.
XI.A.11.		Each Permittee shall document, evaluate and annually report the effectiveness of its enforcement procedures in achieving prompt and timely compliance.	Annually	Annual Report
XI.A.13.		Permittees to evaluate and report adequacy of inspection programs conducted by other agencies on behalf of Permittee.	Annually	Annual Report

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
XI.B.4.		An inventory and inspection frequency of: Wet Season(Oct 1 – May 31): High = 1/mo., Med = 2/season, low = 1/season Dry Season: All construction sites shall be inspected at a frequency sufficient to ensure that sediment and other Pollutants are properly controlled and that unauthorized, Non-Storm Water discharges are prevented		Annual Report
XI.C.3		All high priority industrial facilities are to be inspected at least once a year; all medium priority sites are to be inspected at least once every two years; and all low priority sites are to be inspected at least once per permit cycle.		Annual Report
XI.D.4		All high priority sites shall be inspected at least once a year; all medium priority sites shall be inspected at least every two years; and all low priority sites shall be inspected at least once per MS4 Permit cycle.		Annual Report
XI.D.6		Notify all mobile businesses operating within the County concerning the minimum source control and pollution prevention measures that they must develop and implement.	Within 18 months of adoption of this Order	Annually
XI.D.7		The Principal Permittee shall develop an enforcement strategy to address mobile businesses.	Within 24 months of adoption of this Order	Annually

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
XI.E.1		Each Permittee shall develop and implement a residential program to reduce the discharge of Pollutants from residences to the MS4s to the MEP.	Within 18 months of adoption of this Order	Annually
XI.E.6.		Co-Permittees to provide an evaluation of its residential program	Annually starting with the second Annual Report following MS4 Permit adoption	Annually starting with the third Annual Report following MS4 Permit adoption
XII.B.3 & B8.		The Co-Permittees shall submit to the Regional Board a Watershed Action Plan	Within three years of adoption of MS4 Permit.	Annual Report
XII.B.5		Develop HMP	Submit within 4 years of adoption	
XII.C.1.		Each Permittee shall review the watershed protection principles and policies in its General Plan and related documents to eliminate barriers to LID.	Within 24 months of adoption of this Order	Annually
XII.D.1.		Each Permittee to submit a revised WQMP to incorporate new elements required in the Order	Within 18 months of adoption of this Order	Annual Report
XII.D.5.		Principal Permittee to develop recommendations for streamlining regulatory agency approval of regional Treatment Control BMPs.	Within 24 months of adoption of this Order	Annually
XII.E.1		Permittees shall update the WQMP to incorporate LID principles,	18 months of Order adoption	
XII.E.4.		Revise Ordinances to promote Green Infilstructure	18 months of Order adoption. Implement within 6 months of EO approval.	
XII.E.5.		Each Permittee to update its landscape ordinance consistent with requirements of AB 1881 and annually evaluate effectiveness with respect to water efficiency and water conservation goals	January 31, 2010	2011-2012 Annual Report

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
XII. F.		Develop standard design and post-development BMP guidance for streets, roads etc. projects.	Within 24 months of adoption of this Order, Implement within 6 months of EO approval.	
XII.G1.		Permittees shall establish technically-based feasibility criteria for project evaluation to determine feasibility of implementing LID	Within 18 months of MS4 Permit adoption	No reporting specified
XII.H.		Each Permittee shall develop and implement standard procedures and tools, and include in its LIP.	Within 18 months of adoption of this Order	Annually
XII.K.4.		The Permittees shall maintain a database to track operation and maintenance of post-construction BMPs.		Annually
XII.K.5		Public Agency Treatment Control BMPs, shall be inspected prior to the Wet Season.	Within18 months of Order adoption and within the 5 year permit term.	Annually
		New Development (Redevelopment) Treatment Control BMPs, shall be inspected prior to the Wet Season.	Based on schedule submitted but at least once within the 5 year permit term.	Annually
XII.K.6.		Provide list of all post-construction Treatment Control BMPs approved, constructed and/or operating	Annually	Annual Report
XII.L.		Provisions for LID and HCOC included in WQMP.	Within 45 days of approval of WQMP.	
XIII.A.		Review public education and outreach efforts and revise their activities to adapt to the needs identified in the annual reassessment.		Annual Report
XIII.B.		Status report on Public Education and Outreach requirements and changes to the ongoing program	Annually	Annual Report

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
XIII.C.		Implement assessment program to measure increases in public knowledge of impacts of Urban Runoff on Receiving Waters	First Annual Report following MS4 Permit adoption	
XIII.F.		The Permittees shall develop, maintain and distribute BMP guidance for the control of those potentially polluting activities identified during the previous permit cycle, which are not otherwise regulated by any agency, including guidelines for the household use of fertilizers, pesticides, herbicides and other chemicals, and guidance for mobile vehicle maintenance, carpet cleaners, commercial landscape maintenance, and pavement cutting.	Within 18 months of adoption of this Order	Annual Report
XIII.I.		The Public Education Committee shall meet at least twice per year.		Annual Report
XIII.J.		Sponsor or staff an Urban Runoff table or booth at community, regional, and/or countywide events to distribute public education materials to the public.	Each Permittee shall participate in at least one event per year.	Annually
XIII.K.		Involve public agency organizations, listed in Appendix 2, in Urban Runoff program. Notify the Regional Board where assistance is needed in improving local cooperation.		Annual Report
XIII.L		Develop and distribute BMP Fact Sheets for mobile businesses	Within 18 months of adoption of this Order	
XIV.A.		Review activities and facilities to determine the need for revisions to Section 5 of the DAMP and LIP.	Annually	Annual Report

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
XIV.B.		Each Permittee shall review its inventory of fixed facilities listed in the DAMP, its field operations and MS4 facilities to ensure that public agency facilities and activities do not cause or contribute to a Pollution or nuisance in Receiving Waters.	Within 12 months of adoption of this Order	Annual Report
XIV.C.		Conduct inspections of its fixed facilities and field operations.	Annually	Annual Report
XIV. D.		Evaluate cleaning schedule.	Annually	Annual Report
XIV.E.		Unless otherwise determined, each Permittee shall inspect, clean & maintain at least 80% of it's open channels, catch basins, retention/detention basins, and wetlands created for Urban Runoff treatment.	Annually	Annual Report
XIV.G1.c.		Notify the Executive Officer of the proposed construction project by electronically submitting Permit Registration Documents (PRDs).	Prior to commencement of each construction project.	
XIV.G1.d.		the Executive Officer shall be notified of the completion of the project by submitting a Notice of Termination (NOT).	Upon completion of each construction project.	
XIV.G2.b.		Notify the Executive Officer of each proposed deminimus discharge at least 15 days prior to start of the discharge	At least 15 days prior to discharge.	At least 15 days prior to discharge.
XV.A		DAMP and each Permittee's LIP shall be updated to include a program to provide formal and where necessary, informal training to Permittee staff that implement the provisions of this Order	Within 24 months of adoption of Order	DAMP will be updated within 24 months of adoption of Order. LIP will be updated within 12 months of approval of LIP template by EO

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[(a)]**			
XV.A., XV.E. .		Each Permitee's LIP shall describe a program to provide formal and informal training to Permittee staff and contractors that implement the provisions of this Order. Provide the specified training.	Within 24 months of adoption of this Order and annually thereafter.	LIP will be updated within 24 months of order adoption.
XV.F.		Principal Permittee shall provide and document training to applicable Permittee staff on area wide procedures such as the DAMP, and any other applicable guidance and procedures developed by the Permittees to address activities in fixed facilities as well as field operations, including MS4 maintenance.	Within 12 months of adoption of this Order, within 12 months of hire and every two years, thereafter.	Bi-annually
XV.H*		Principal Permittee shall notify Regional Board staff		When notifying Permittees of training session.
XVI.A.		Notify of emergency events..		Within 24 hours of discovery
XVI.C		Sewage spill notification shall be consistent with the timelines specified in the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ.		Consistent with 2006-003-DWQ.
XVI.D.		Hazardous Waste Spills	Notify within 24 hours.	
XVI.E.		Facilities operating without an applicable General permit.		Reported within 14 calendar days
XVII.A.		Evaluate the effectiveness of the Urban Runoff management program.	By November 30 of each year.	Annually by November 30.
XVII.B.		Amended DAMP pages.		Annual Report
XVIII.B.		Financial analysis report		Annual Report
XXII.A.		Report of Waste Discharge	180 days before permit expires	Jan 29, 2015

Reference		Item	Completion Time after Permit Adoption or Frequency	Report Due Date
Permit	**DAMP[a]**			
Appendix 3, III.C.		Review CMP to determine their effectiveness in Urban Runoff program assessment	Within 12 months of adoption of this Order	N/A
		Submit Revised CMP	Within 16 months of adoption of this Order and implement within 6 months of approval.	
Appendix 3, III.D.1.b.		Prepare a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs.	Every three years	The first report shall be due February 15, 2010.
Appendix 3, III.D.2		Submit an annual report summarizing all relevant data from water quality monitoring programs and evaluating compliance with the LE/CL TMDL by reporting the effectiveness of the BMPs implemented in the watershed to control nutrient inputs into the lake from Urban Runoff pursuant to Regional Board Resolution No. R8-2006-0031 and R8-2007-0083, or as amended by subsequent Regional Board adopted resolutions.	Annually	Annual Report
Appendix 3, IV.B.2.		Annual Report	Annually	November 30th

(a) This column to be completed by Permittees.

Date: 1-29-10

Ordered by

Gerard J. Thibeault
Executive Officer

APPENDIX 4

GLOSSARY

ORDER NO. R8-2010-0033

Appendix 4, GLOSSARY

40 CFR – Code of Federal Regulations Title 40: Protection of the Environment.

Annual Report – Report summarizing compliance information required to be submitted annually to the Regional Board on or before each November 30th.

Anthropogenic – Generated from human activities

APN – Assessor's parcel number

Basin Plan – Water Quality Control Plan developed by the Regional Board for the Santa Ana River watershed.

BAT [Best Available Technology] – Technology-based standard established by Congress in CWA Section 402(p)(3)(A) for industrial dischargers of storm water. Technology-based standards establish the level of Pollutant reductions that dischargers must achieve, typically by treatment or by a combination of Source Controls and Structural BMPs. BAT generally emphasizes treatment methods first and Pollution Prevention and Source Control BMPs secondarily. The best economically achievable technology that will result in reasonable further progress toward the national goal of eliminating the discharge of all Pollutants is determined in accordance with regulations issued by the USEPA Administrator. Factors relating to the assessment of BAT shall take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the permitting authority deems appropriate.

BCT [Best Conventional Technology] – Treatment techniques, processes, and procedure innovations, and operating methods that eliminate or reduce chemical, physical, and biological Pollutant constituents.

Beneficial Use – Uses of water necessary for the survival or well being of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals. “Beneficial Uses” that may be protected include, but are not limited to: domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. Existing Beneficial Uses are those that were attained in the surface or ground water on or after November 28, 1975; and potential Beneficial Uses are those that would probably develop in future years through the implementation of various control measures. “Beneficial Uses” are equivalent to “Designated Uses” under federal law. [California

Water Code Section 13050(f)] Beneficial Uses for the Receiving Waters are identified in the Basin Plan.

Biological Integrity – Defined in Karr J.R. and D.R. Dudley. 1981. Ecological perspective on water quality goals. Environmental Management 5:55-68 as: "A balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitat of the region." Also referred to as ecosystem health.

BMP [Best Management Practices] – Defined in 40 CFR 122.2 as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the Pollution of Waters of the U.S. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In the case of MS4 permits, BMPs are typically used in place of Numeric Effluent Limits.

CAFO – Concentrated animal feeding operation.

Caltrans – California Department of Transportation.

CAP – The Commercial and Industrial Compliance Assistance Program is a Riverside County Environmental Health Department program that includes a storm water survey and educational outreach as part of existing inspections of Hazardous Material handlers and retail food service activities. Hazardous Waste handling facilities are inspected at least once during a two-year cycle. Restaurants are inspected at least once during the MS4 Permit cycle. Any completed surveys that indicate non-compliance are forwarded to the appropriate jurisdiction's code enforcement division. The Permittees notify Regional Board staff when conditions are observed during such inspections that appear to violate the General Storm Water Permits or a permit issued by the Regional Board.

CEQA – California Environmental Quality Act (Section 21000 et seq. of the California Public Resources Code).

CIEP – Compliance Inspection and Enforcement Program

Cleaning – Removal of litter or debris that can impact Receiving Waters.

CMP – Consolidated Program for Water Quality Monitoring, Riverside County Flood Control and Water Conservation District, October 2008.

Commercial Facilities – Businesses that have the potential to discharge Pollutants to the MS4 not otherwise covered by the General Industrial Permit that are described in Section 8.1 of the DAMP. These businesses are inspected as part of the CAP or equivalent as described in Section 8.1 of the DAMP. Commercial Facilities include businesses based in a Permittee's jurisdiction that perform mobile carpet, drape or

furniture cleaning; mobile automobile or other vehicle washing and mobile high pressure or steam cleaning.

Comprehensive TMDL Plan – A plan presenting a long-term solution designed to achieve compliance with the WLAs by the dates specified in the TMDLs. This plan includes a description of the proposed BMPs and the documentation demonstrating that the BMPs are expected to attain the WLAs by the compliance dates when implemented.

Conditions of Concern – Scour, erosion (sheet, rill and/or gully), aggradation (raising of a streambed from sediment deposition), and changes in fluvial geomorphology, hydrology or the aquatic ecosystem.

Construction Site – A site with activities for which building or grading permits have been issued and activities at the site include: soil movement; uncovered storage of materials or wastes, such as dirt, sand or fertilizer; or exterior mixing of cementaceous products, such as concrete, mortar or stucco.

Contamination – As defined in the Porter-Cologne Water Quality Control Act, contamination is "an Impairment of the quality of waters of the State by Waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease." Contamination includes any equivalent effect resulting from the disposal of Waste whether or not Waters of the U.S. are affected.

Co-Permittees – County of Riverside and the cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Menifee, Murrieta, Moreno Valley, Norco, Perris, Riverside, San Jacinto and Wildomar.

County – County of Riverside, a legal subdivision of the State of California.

CSA 152 – County Service Area 152

CWA – Federal Clean Water Act

CZARA – Coastal Zone Act Reauthorization Amendments of 1990

DAMP [Drainage Area Management Plan] – The DAMP is a programmatic document developed by the Permittees and approved by the Executive Officer that outlines the major programs and policies that the Permittees individually and/or collectively implement to manage Urban Runoff in the Permit Area.

DDT – Dichlorodiphenyltrichloroethane – An insecticide first used in 1939. Most uses of DDT were banned in 1972, with limited exception for public health purposes.

De Minimus Permit – General De Minimus Permit for Discharges to Surface Waters, Order NO. R8-2009-0003, NPDES No. CAG 998001

Design Capture Volume – (See Permit, XII.E.2)

Discretionary Project – Per Section 15357 of the Guidelines for CEQA "Discretionary Project" means a project which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations. A timber harvesting plan submitted to the State Forester for approval under the requirements of the Z'berg-Nejedly Forest Practice Act of 1973 (Pub. Res. Code Sections 4511 et seq.) constitutes a discretionary project within the meaning of the California Environmental Quality Act. Section 21065(c).

Direct Discharge (Table 3a) – A discharge directly from an MS4 to a receiving water such that the MS4 discharge does not first co-mingle with waters from another receiving water or conveyance.

Dry Season/Dry Weather - The season excluding the Wet Season. Generally it will be June 1 through September 30 of each year, unless specifically defined otherwise in a applicable TMDL Implementation Plan.

Effective Impervious Area (EIA) – EIA is the portion of the total impervious area that is directly connected to the drainage collection system. EIA includes street surfaces, paved driveways connecting to the street, rooftops which are hydraulically connected to the curb or storm sewer system, and paved parking lots that drain to a storm sewer system.

Impervious area such as rooftops, streets, sidewalks, and parking areas do not allow water to drain into the soil. Impervious area that collects and drains the water directly to a stream or wetland system via pipes or sheet flow is considered “effective impervious area” because it effectively drains the landscape. Impervious area that drains to landscaped areas, swales, parks and other impervious areas is considered “ineffective” because the water is allowed to infiltrate through the soil and into ground water, without a direct connection to the stream or wetland.

Reducing effective impervious area is defined as disconnecting impervious surfaces such as sidewalks, rooftops, parking areas, and streets, from the drainage system so that runoff percolates into the soil and does not flow directly to streams. Disconnecting the stormwater system allows the watersheds’ hydrologic cycle to respond in a manner that more closely reflects pre-disturbed conditions. EIA reduction can occur as part of new development, redevelopment, or be part of a retrofit design. The level of benefit is determined by how well the practices minimize runoff in small to mid size storm events.

Effectiveness Assessment Outcome Level 1 - Compliance with Activity-based Permit Requirements – Level 1 outcomes are those directly related to the implementation of specific activities prescribed by this Order or established pursuant to it.

Effectiveness Assessment Outcome Level 2 - Changes in Attitudes, Knowledge, and Awareness – Level 2 outcomes are measured as increases in knowledge and awareness among target audiences such as residents, businesses, and municipal employees.

Effectiveness Assessment Outcome Level 3 - Behavioral Change and BMP Implementation – Level 3 outcomes measure the effectiveness of activities in affecting behavioral change and BMP implementation.

Effectiveness Assessment Outcome Level 4 - Load Reductions – Level 4 outcomes measure load reductions which quantify changes in the amounts of pollutants associated with specific sources before and after a BMP or other control measure is employed.

Effectiveness Assessment Outcome Level 5 - Changes in Urban Runoff and Discharge Quality – Level 5 outcomes are measured as changes in one or more specific constituents or stressors in discharges into or from MS4s.

Effectiveness Assessment Outcome Level 6 - Changes in Receiving Water Quality – Level 6 outcomes measure changes to receiving water quality resulting from discharges into and from MS4s, and may be expressed through a variety of means such as compliance with water quality objectives or other regulatory benchmarks, protection of biological integrity, or beneficial use attainment.

Effluent Limitations – means any restriction on quantities, discharge rates, and concentrations of Pollutants which are discharged from Point Sources into Waters of the U.S., waters of the "contiguous zone," or the ocean (40 CFR 122.2).

Emergency Situation – At a minimum, sewage spills that could impact water contact recreation, all sewage spills above 1,000 gallons, an oil spill that could impact wildlife, a Hazardous Material spill where residents are evacuated, all reportable quantities of Hazardous Waste spills as per 40CFR 117 and 302, and any incident reportable to the OES (1-800-852-7550).

Erosion and Sediment Control Plan (ESCP) – These are water quality protection plans that include control measures for erosion prevention and sediment controls that would minimize the mobilization of sediment from the project site.

ESA – Environmentally Sensitive Area - An area "in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in

an ecosystem and which would be easily disturbed or degraded by human activities and developments" (Reference: California Public Resources Code § 30107.5).

ESAs subject to storm water mitigation requirements are:

1. Areas adjacent to Receiving Waters designated as "Preservation of Biological Habitats of Special Significance (BIOL)", "Spawning, Reproduction, and Development (SPWN)" or "Rare, Threatened, or Endangered Species (RARE)" Beneficial Uses in the Basin Plan;

2. Areas within the MSHCP that contain rare or especially valuable plant or animal life or their habitat. These areas are considered mitigated as the MSHCP contains substantive alternatives analysis for any proposed development that has the potential to impact resources.

3. Areas adjacent to CWA 303(d) Listed Water Bodies or adopted TMDLs with implementation plans that have yet to achieve the Urban WLA or LA goals; and

4. Any other equivalent environmentally sensitive areas which the Permittees have defined.

Executive Officer - The Executive Officer of the Regional Board.

General Construction Permit – State Board Order No. 2009-0009 DWQ (NPDES No. CAS000002) or the most recent draft of the General Construction Permit issued by the State Board subsequent to issuance of this Order.

General Dairy Permit – Regional Board Order No. R8-2007-0001 (NPDES No. CAG018001) for CAFOs.

General De Minimus Discharges Permit – Regional Board Order No. R8-2009-0003.

General Industrial Permit – State Board Order No. 97-03 DWQ (NPDES No. CAS000001) or the most recent General Permit for Storm Water Discharges Associated with Industrial Activities issued by the State Board subsequent to issuance of this Order.

General Storm Water Permits – General Industrial Permit (State Board Order No. 97-03 DWQ, NPDES No. CAS000001) and General Construction Permit (State Board Order No. 2009-0009-DWQ NPDES No. CAS000002), or the most recent applicable General Permit issued by the State Board subsequent to the issuance of this Order.

General Utility Vaults Permit-– State Board Order No. 2006-0008-DWQ, NPDES No. CAG990002.

GIS – Geographical Information System.

Green Infrastructure – Generally refers to technologically feasible and cost-effective systems and practices that use or mimic natural processes to infiltrate, evapotranspirate, or reuse stormwater or runoff on the site where it is generated. This is a concept that highlights the importance of the natural environment in decisions about land use planning. In particular there is an emphasis on the "life support" functions provided by a network of natural ecosystems, with an emphasis on connectivity to support long term sustainability. (Also see Low Impact Development.)

Hazardous Material – Any substance that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity. These also include materials named by the USEPA to be reported if a designated quantity of the material is spilled into the Waters of the U.S. or emitted into the environment.

Hazardous Waste – defined as "any waste, which, under Section 600 of Title 22 of this code, is required to be managed according to Chapter 30 of Division 4.5 of Title 22 of this code." [CCR Title 22, Division 4.5, Chapter 11, Article1]

HCOC – Hydrologic Condition of Concern - An HCOC exists when a site's hydrologic regime is altered and there are significant impacts on downstream channels and aquatic habitats, alone or in conjunction with impacts of other projects.

Hydromodification - the "alteration of the hydrologic characteristics of coastal and non-coastal waters, which in turn could cause degradation of water resources."[1] (USEPA 2007)

IC/ID – Illicit Connection/Illegal Discharge

IDDE - Illicit Discharge Detection and Elimination Program

Illegal Discharge –Defined at 40 CFR 122.26(b)(2) as any discharge to the MS4 that is not composed entirely of storm water, except discharges pursuant to an NPDES permit, discharges that are identified in Section VI.A. of this Order, and discharges authorized by the Executive Officer.

Illicit Connection – Any connection to the MS4 that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term Illicit Connection includes all non storm-water discharges and connections except discharges pursuant to an NPDES permit, discharges that are identified in Section V, Effluent Limitations and

[1] USEPA. 2007. *National Management Measures to Control Nonpoint Source Pollution from Hydromodification.* EPA 841-B-07-002. U.S. Environmental Protection Agency, Office of Water, Washington DC

Discharge Specifications, of this Order, and discharges authorized by the Executive Officer.

Impaired – Relates to waterbodies where it is presumed Beneficial Uses are not attained.

Impaired Waterbody / Impaired Waters – Section 303(b) of the CWA requires each of California's Regional Water Quality Control Boards to routinely monitor and assess the quality of waters of their respective regions. If this assessment indicates that Beneficial Uses are not met, then that waterbody must be listed under Section 303(d) of the CWA as an Impaired Waterbody. The 2006 water quality assessment found a number of water bodies within the Permit Area as Impaired pursuant to Section 303(d). In the Permit Area, these include: Canyon Lake (for pathogens); Lake Elsinore (for PCBs and unknown toxicity); Lake Fulmor (for pathogens); Santa Ana River, Reach 3 (pathogens); and Santa Ana River, Reach 4 (for pathogens).

Impairment – A waterbody condition where Beneficial Uses are not attained.

Implementation Agreement – The Implementation Agreement establishes the responsibilities of each Permittee and a procedure for funding the shared costs.

Impressions – The most common measure is "gross impressions" that includes repetitions. This means if the same person sees an advertisement or hears a radio or sees a TV advertisement a thousand times, that will be counted as 1000 Impressions.

Industrial Facility – Facilities defined in Attachment 1 of the General Industrial Permit. These facilities are also addressed by the CAP or equivalent as described in Section 8.1 of the DAMP.

LA – [Load Allocations] – Distribution or assignment of TMDL Pollutant loads to entities or sources for existing and future Non-Point Sources, including background loads.

Land Disturbance – The clearing, grading, excavation, stockpiling, or other construction activity that result in the possible mobilization of soils or other Pollutants into the MS4. This specifically does not include routine maintenance activity to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. This also does not include emergency construction activities required to protect public health and safety. The Permittees should first confirm with Regional Board staff if they believe that a particular routine maintenance activity is exempt under this definition from the General Construction Permit or other Orders issued by the Regional Board.

Local Implementation Plan (LIP) – Document describing an individual Permittee's procedures, ordinances, databases, plans, and reporting materials for compliance with the MS4 Permit.

Low Impact Development (LID) – Comprises a set of technologically feasible and cost-effective approaches to storm water management and land development that combines a hydrologically functional site design with Pollution Prevention measures to compensate for land development impacts on hydrology and water quality. LID techniques mimic the site's predevelopment hydrology by using site design techniques that store, infiltrate, evapotranspire, bio-treat, bio-filter, bio-retain or detain runoff close to its source.

Major Outfall – Outfalls with a pipe diameter of 36 inches or greater or drainage areas draining 50 acres or more.

Management Steering Committee – Committee to address Urban Runoff management policies for the Permit Area and coordinate the review and necessary revisions of the DAMP and Implementation Agreement. The Management Steering Committee consists of one or more city manager or equivalent representatives from each Permittee.

MEP [Maximum Extent Practicable] MEP is an acronym for "Maximum Extent Practicable" and refers to the standard for implementation of storm water management programs.
Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal storm water permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system design and engineering
methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

In practice, compliance with the MEP standard is evaluated by how well the Permittees implement the "minimum measures" identified by EPA, including: (1)Public education and outreach on storm water impacts; (2) Public involvement/participation; (3) Illicit discharge detection and elimination; (4) Construction site storm water runoff control; (5) Post-construction storm water management in new development and redevelopment; and (6) Pollution prevention/good housekeeping for municipal operations. Collectively, these minimum measures are often referred to as "Best Management Practices" or BMPs. The MEP standard does not require Permittees to reduce pollutant concentrations below natural background levels, nor does it require further reductions where pollutant concentrations in the receiving water already meet water quality objectives. In implementing the MEP standard, it is appropriate for Permittees to prioritize their resource allocation to address the storm water pollution problems that pose the greatest and most immediate threat to human health or the environment.

MEP is a technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that operators of MS4s must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve, typically by treatment or by a combination of source control and treatment control BMPs. MEP

generally emphasizes pollution prevention and source control BMPs primarily (as the first line of defense) in combination with treatment methods serving as a backup (additional line of defense). MEP considers economics and is generally, but not necessarily, less stringent than BAT. A definition for MEP is not provided either in the statute or in the regulations. Instead the definition of MEP is dynamic and will be defined by the following process over time: municipalities propose their definition of MEP by way of their urban runoff management programs. Their total collective and individual activities conducted pursuant to the urban runoff management programs becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for MS4 maintenance). In the absence of a proposal acceptable to the Regional Board, the Regional Board defines MEP.

In a memo dated February 11, 1993, entitled "Definition of Maximum Extent Practicable," Elizabeth Jennings, Senior Staff Counsel, SWRCB addressed the achievement of the MEP standard as follows:

“To achieve the MEP standard, municipalities must employ whatever Best management Practices (BMPs) are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing pollutants to the MEP means choosing effective BMPs, and rejecting applicable BMPS only where other effective BMPS will serve the same purpose or the BMPS would not be technically feasible, or the cost would be prohibitive. In selecting BMPS to achieve the MEP standard, the following factors may e useful to consider:

a. Effectiveness: Will the BMPS address a pollutant (or pollutant source) of concern?

b. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?

c. Public Acceptance: Does the BMP have public support?

d. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?

e. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc?

The final determination regarding whether a municipality has reduced pollutants to the maximum extent practicable can only be made by the Regional or State Water Boards, and not by the municipal discharger. If a municipality reviews a lengthy menu of BMPS and chooses to select only a few of the least expensive, it is likely that MEP has not been met. On the other hand, if a municipal discharger employs all applicable BMPS except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit derived, it would have met the standard. Where a choice may be made between two BMPS that should provide generally comparable

effectiveness, the discharger may choose the least expensive alternative and exclude the more expensive BMP. However, it would not be acceptable either to reject all BMPS that would address a pollutant source, or to pick a BMP base solely on cost, which would be clearly less effective. In selecting BMPS the municipality must make a serious attempt to comply and practical solutions may not be lightly rejected. In any case, the burden would be on the municipal discharger to show compliance with its permit. After selecting a menu of BMPS, it is the responsibility of the discharger to ensure that all BMPS are implemented."

Ministerial – Per Section 15369 of the CEQA Guidelines, Ministerial describes a governmental decision involving little or no personal judgment by the public official as to the wisdom or manner of carrying out the project. The public official merely applies the law to the facts as presented but uses no special discretion or judgment in reaching a decision. A ministerial decision involves only the use of fixed standards or objective measurements, and the public official cannot use personal, subjective judgment in deciding whether or how the project should be carried out. Common examples of ministerial permits include automobile registrations, dog licenses, and marriage licenses. A building permit is ministerial if the ordinance requiring the permit limits the public official to determining whether the zoning allows the structure to be built in the requested location, the structure would meet the strength requirements in the Uniform Building Code, and the applicant has paid his fee.

MSAR – Middle Santa Ana River

MSHCP – Western Riverside County Multiple Species Habitat Conservation Plan

MS4 – **[Municipal Separate Storm Sewer System]** – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, natural drainage features or channels, modified natural channels, man-made channels, or storm drains): (i) Owned or operated by a State, city town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to Waters of the U.S.; (ii) Designated or used for collecting of conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the POTW as defined at 40 CFR 122.2.

New Development – The categories of development identified in Section XI.D of this Order. New Development does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of a facility, nor does it include emergency New Development required to protect public health and safety. Dischargers should confirm with Regional Board staff whether or not a particular routine maintenance activity is subject to this Order.

New Urbanism – New Urbanism refers to the use of creative strategies to develop ways that preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land. This is based on principles of planning and architecture that work together to create human-scale, walkable communities that preserve natural resources.

NOI [Notice of Intent] – A NOI is an application for coverage under the General Storm Water Permits.

Non-Point Source – Refers to diffuse, widespread sources of Pollution. These sources may be large or small, but are generally numerous throughout a watershed. Non-Point Sources, include but are not limited to urban, agricultural or industrial area, roads, highways, construction sites, communities served by septic systems, recreational boating activities, timber harvesting, mining, livestock grazing, as well as physical changes to stream channels, and habitat degradation. Non-Point Source Pollution can occur year round any time rainfall, snowmelt, irrigation, or any other source of water runs over land or through the ground, picks up Pollutants from these numerous, diffuse sources and deposits them into rivers, lakes and coastal waters or introduces them into groundwater.

Non-storm Water – All discharges to and from a MS4 that do not originate from precipitation events (i.e., all discharges to a MS4 other than storm water). Non-storm Water includes Illicit Discharges, non-prohibited discharges and NPDES permitted discharges.

NOT - Notice of Termination – Formal notice to the Regional Board of intent to terminate water discharge for projects covered under a General Stormwater Permit.

NPDES [National Pollutant Discharge Elimination System] – Permits issued under Section 402(p) of the CWA for regulating discharge of Pollutants to Waters of the U.S.

Nuisance – As defined in the Porter-Cologne Water Quality Control Act a Nuisance is "anything which meets all of the following requirements: 1) Is injurious to health, or is indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. 2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. 3) Occurs during, or as a result of, the treatment or disposal of Wastes."

Numeric Effluent Limitations – A quantitative limitation on Pollutant concentrations or levels to protect Beneficial Uses and Water Quality Objectives of a water body. When Numeric Effluent Limits are met at the "end-of-pipe," the effluent discharge generally will not cause Water Quality Standards to be exceeded in the receiving waters (i.e., Water Quality Standards will also be met).

Nurdles – A plastic pellet, also known as pre-production plastic pellet or plastic resin pellet.

NURP - National Urban Runoff Program

OES – The Governor's Office of Emergency Services, an agency of the State of California.

"Only Rain Down The Storm Drain" Pollution Prevention Program – County Urban Runoff public education program.

Open Space – Any parcel or area of land or water that is essentially unimproved or devoted to an open-space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety. [Riverside County General Plan, adopted October 7, 2003. Technical Appendix A , Glossary]

Order – Order No. R8-2010-0033 (NPDES No. CAS618033)

Outfall – Means a Point Source as defined by 40 CFR 122.2 a, the point where a municipal separate storm sewer discharges to Waters of the U.S. and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances which connect segments of the same stream or other Waters of the U.S. and are used to convey Waters of the U.S.. [40 CFR 122.26 (b)(9)]

PAHs – Polycyclic aromatic hydrocarbons. PAHs occur in oil, coal, and tar deposits, and are produced as byproducts of fuel burning (whether fossil fuel or biomass). As a Pollutant, they are of concern because some compounds have been identified as carcinogenic, mutagenic, and teratogenic. PAHs are also found in foods.

Party – Defined as an individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof. [40 CFR 122.2]

PCBs – Polychlorinated biphenyls. Due to PCB's toxicity and classification as persistent organic Pollutants, PCB production was banned by the United States Congress in 1976 and by the Stockholm Convention on Persistent Organic Pollutants in 2001.

Permit Area – In the Santa Ana Region, the portion of the Santa Ana River watershed that is within the County and regulated under the MS4 Permit. The Permit Area is identified on Appendix 1 as "Permittee Urban Area" and those areas under the Permittee's jurisdictions designated as "Agriculture" and "Open Space" on Appendix 1 that will convert to Permittee Urban Area when developed to industrial, commercial, or residential use during the term of the Order.

Permittees – Co-Permittees and the Principal Permittee

Point Source – Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft from which pollutants are or may be discharged.

Pollutant – Broadly defined as any agent that may cause or contribute to the degradation of water quality such that a condition of Pollution or Contamination is created or aggravated.

Pollutants of Concern –Pollutants expected to be present on the project site. In developing this list, consideration should be given to the chemicals and potential Pollutants available for storm water to pick-up or transport to Receiving Waters and legacy Pollutants at the project site. Pollutants of Concern for New Development and Significant Redevelopment projects are those Pollutants identified above for which a downstream water body is also listed as Impaired under the CWA Section 303(d) list or by a TMDL.

Pollution – As defined in the Porter-Cologne Water Quality Control Act, Pollution is the alteration of the quality of the Waters of the U.S. by Waste, to a degree that unreasonably affects either of the following: A) the waters for Beneficial Uses (i.e., when the Water Quality Objectives have been violated); or B) facilities that serve these Beneficial Uses. Pollution may include Contamination.

Pollution Prevention –Defined as practices and processes that reduce or eliminate the generation of Pollutants, in contrast to Source Control, Pollution Control, Treatment Control BMPs, or disposal.

Post-Construction BMPs – A subset of BMPs including Site Design, Source Control, and Treatment Control BMPs which detain, retain, filter or educate to prevent the release of Pollutants to surface waters during the final functional life of development.

POTW – [Publicly Owned Treatment Works] – Wastewater treatment facilities owned by a public agency.

Principal Permittee – Riverside County Flood Control and Water Conservation District [RCFC&WCD].

Public Education Committee – Committee established by the Permittees to provide oversight and guidance for the implementation of the public education program.

QAPP - Quality Assurance Project Plan

Rainy Season – See Wet Season.

RCFC&WCD – Riverside County Flood Control and Water Conservation District

REC – Recreational Beneficial Use.

Receiving Water(s) – Waters of the U.S.within the Permit Area.

Receiving Water Limitations – Requirements included in the Orders issued by the Regional Boards to assure that the regulated discharges do not violate Water Quality Standards established in the Basin Plan at the point of discharge to Waters of the U.S. Receiving Water Limitations are used to implement the requirement of CWA section 301(b)(1)(C) that NPDES permits must include any more stringent limitations necessary to meet Water Quality Standards.

Receiving Water Quality Objectives – Water Quality Objectives specified in the Basin Plan for Receiving Waters.

Region – The portion of the Santa Ana River watershed within Riverside County.

Regional Board – California Regional Water Quality Control Board, Santa Ana Region.

RGO – Retail gasoline outlet

Riverside County – Territory within the geographical boundaries of the County.

ROWD [Report of Waste Discharge] – Application for issuance or re-issuance of WDRs.

Sanitary Sewer Overflow (SSO) – Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system.

Santa Ana Region – Area under the jurisdiction of the Regional Board.

SARA – Superfund Amendments and Reauthorization Act. SARA amended the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) on October 17, 1986. SARA reflected USEPA's experience in administering the complex Superfund program during its first six years and made several important changes and additions to the program. SARA:

- stressed the importance of permanent remedies and innovative treatment technologies in cleaning up Hazardous Waste sites;
- required Superfund actions to consider the standards and requirements found in other State and Federal environmental laws and regulations;
- provided new enforcement authorities and settlement tools;

- increased State involvement in every phase of the Superfund program;
- increased the focus on human health problems posed by Hazardous Waste sites;
- encouraged greater citizen participation in making decisions on how sites should be cleaned up; and
- increased the size of the trust fund to $8.5 billion.

SARA also required USEPA to revise the Hazard Ranking System (HRS) to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled Hazardous Waste sites that may be placed on the National Priorities List (NPL).

SAWBAA – Santa Ana Watershed Benefit Assessment Area

SCCWRP – Southern California Coastal Water Research Project

Sediment – Soil, sand, and minerals washed from land into water. Sediment resulting from anthropogenic sources (i.e. human induced land disturbance activities) is considered a Pollutant. This Order regulates only the discharges of Sediment from anthropogenic sources and does not regulate naturally occurring sources of Sediment. Sediment may destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

SIC [Standard Industrial Classification] – Four digit industry code, as defined by the US Department of Labor, Occupational Safety and Health Administration. The SIC Code is used to identify if a facility requires coverage under the General Industrial Activities Storm Water Permit.

Significant Redevelopment – As defined in Section XI.D.3.a.

SIP - Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California

Site Design BMPs – Any project design feature that reduces the creation or severity of potential pollutant sources or reduces the alteration of the project site's natural flow regime. Redevelopment projects that are undertaken to remove Pollutant sources (such as existing surface parking lots and other impervious surfaces) or to reduce the need for new roads and other impervious surfaces (as compared to conventional or low-density New Development) by incorporating higher densities and/or mixed land uses into the project design, are also considered site design BMPs

Smart Growth Principles – Smart Growth refers to the use of creative strategies to develop ways that preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land.

SMC - Storm Water Monitoring Coalition

Source Control BMPs – In general, activities or programs to educate the public or provide low cost non-physical solutions, as well as facility design or practices aimed to limit the contact between Pollutant sources and storm water or authorized Non-Storm Water. Examples include: activity schedules, prohibitions of practices, street sweeping, facility maintenance, detection and elimination of IC/IDs, and other non-structural measures. Facility design (structural) examples include providing attached lids to trash containers, canopies for fueling islands, secondary containment, or roof or awning over material and trash storage areas to prevent direct contact between water and Pollutants.

Southern California Monitoring Coalition (SMC) - A regional group working to improve monitoring program design, parameter test methods, calibrate labs, evaluate the effectiveness of BMPs, and/or advance the science and understanding of Urban Runoff impacts on Receiving Waters.

SSMP – Sewer System Management Plan

SSO Order – Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ.

State Board – California State Water Resources Control Board

Storm Water – Storm water runoff and snow melt runoff from urban, open space, and agricultural areas consisting only of those discharges that originate from precipitation events. Storm water is that portion of precipitation that flows across a surface to the MS4 or receiving waters. Examples of this phenomenon include: the water that flows off a building's roof when it rains (runoff from an impervious surface); the water that flows into streams when snow on the ground begins to melt (runoff from a semi-pervious surface); and the water that flows from a vegetated surface when rainfall is in excess of the rate at which it can infiltrate into the underlying soil (runoff from a pervious surface). When all other factors are equal, runoff increases as the perviousness of a surface decreases. During precipitation events in urban areas, rain water may pick up and transports Pollutants through storm water conveyance systems, and ultimately to Waters of the U.S.

Storm Water Ordinance – The Storm Water/Urban Runoff Management and Discharge Control Ordinances and ordinances addressing grading and erosion control adopted by each of the Co-Permittees.

Structural BMPs – Physical facilities or controls that may include secondary containment, treatment measures, (e.g. first flush diversion, detention/retention basins, and oil/grease separators), run-off controls (e.g., grass swales, infiltration trenches/basins, etc.), and engineering and design modification of existing structures.

Subdivision Map Act - Section 65000 et seq. of the California Government Code

SWAMP - Surface Water Ambient Monitoring Program

SWPPP [Storm Water Pollution Prevention Plan] – Plan required by the General Construction Permit to minimize and manage Pollutants to minimize Pollution from entering the MS4, identifying all potential sources of Pollution and describing planned practices to reduce Pollutants from discharging off the site.

SWQSTF – Storm Water Quality Standards Task Force

TDS – Total dissolved solids.

Technical Committee – A committee consisting of one or more representatives from each Permittee that provides technical direction on the development of the DAMP and the implementation of the overall Urban Runoff program.

Technology-Based Effluent Limitations – A permit limit for a Pollutant that is based on the capability of a treatment method to reduce the Pollutant to a certain concentration.

TIN – Total Inorganic Nitrogen

TMDL [Total Maximum Daily Load] – Maximum amount of a Pollutant that can be discharged into a water body from all sources (point and non-point) and still maintain Water Quality Standards. Under CWA Section 303(d), TMDLs must be developed for all water bodies that do not meet Water Quality Standards after application of technology-based controls.

TMDL Implementation Plan – Component of a TMDL that describes actions, including monitoring, needed to reduce Pollutant loadings and a timeline for implementation. TMDL Implementation Plans can include a monitoring or modeling plan and milestones for measuring progress, plans for revising the TMDL if progress toward cleaning up the waters is not made, and the date by which Water Quality Standards will be met (USEPA Final TMDL Rule: Fulfilling the Goals of the CWA, EPA 841-F-00-008, July 2000).

Toxic Substance – A substance that can cause Toxicity.

Toxicity – Adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies.

Treatment Control BMPs – Any engineered system designed and constructed to remove Pollutants from Urban Runoff. Pollutant removal is achieved by simple gravity

settling of particulate Pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process.

Tributary – a stream, river, or MS4 which flows into downstream receiving water, MS4 or BMP.

TSS – Total suspended solids.

Uncontaminated Pumped Groundwater – Groundwater that meets the surface Water Quality Objectives specified in the Basin Plan to which it is proposed to be discharged.

Urban Runoff – Urban Runoff includes those discharges from residential, commercial, industrial, and construction areas within the Permit Area and excludes discharges from Open Space[2], feedlots, dairies, farms and agricultural fields. Urban Runoff discharges consist of storm water and non-storm water surface runoff from drainage sub-areas with various, often mixed, land uses within all of the hydrologic drainage areas that discharge into the Waters of the U.S. In addition to Urban Runoff, the MS4s regulated by this Order receive flows from Open Space, agricultural activities, agricultural fields state and federal properties and other non-urban land uses not under the control of the Permittees. The quality of the discharges from the MS4s varies considerably and is affected by, among other things, past and present land use activities, basin hydrology, geography and geology, season, the frequency and duration of storm events, and the presence of past or present illegal and allowed disposal practices and Illicit Connections.

The Permittees lack legal jurisdiction over storm water discharges into their respective MS4 facilities from agricultural activities, California and federal facilities, utilities and special districts, Native American tribal lands, wastewater management agencies and other point and non-point source discharges otherwise permitted by or under the jurisdiction of the Regional Board. The Regional Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. Similarly, certain activities that generate Pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, leaching of naturally occurring minerals from local geography. Urban Runoff does not include background Pollutant loads or naturally occurring flows.

USEP – Urban Source Evaluation Plan for the MSAR TMDL.

USEPA – United States Environmental Protection Agency.

[2] This use of Open Space excludes Open Space integrated into urbanized areas such as pocket parks, landscaped medians, walking trails, etc. Open Space is intended to address essentially unimproved areas in strictly unurbanized settings.

Waste – As defined in Water Code Section 13050(d), "Waste includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal." Article 2 of CCR Title 23, Chapter 15 (Chapter 15) contains a waste classification system that applies to solid and semi-solid waste that cannot be discharged directly or indirectly to waters of the state and which therefore must be discharged to land for treatment, storage, or disposal in accordance with Chapter 15. There are four classifications of waste (listed in order of highest to lowest threat to water quality): hazardous waste, designated waste, non-hazardous solid waste, and inert waste.

Waste Discharge Requirements (WDRs) – As defined in Section 13374 of the California Water Code, the term "Waste Discharge Requirements" is the equivalent of the term "permits" as used in the Federal Water Pollution Control Act, as amended. The Regional Board usually reserves reference to the term "permit" to Waste Discharge Requirements for discharges to surface Waters of the U.S.

Waste Load Allocations (WLAs)– Maximum quantity of Pollutants a discharger of waste is allowed to release into a particular waterway, as set by a regulatory authority. Discharge limits usually are required for each specific water quality criterion being, or expected to be, violated. Distribution or assignment of TMDL Pollutant loads to entities or sources for existing and future Point Sources.

WQBEL – Water Quality Based Effluent Limitations

Water Code – California Water Code

Waters of the U.S. – Waters of the U.S. can be broadly defined as navigable surface waters and all tributary surface waters to navigable surface waters. Groundwater is not considered to be a Waters of the U.S. As defined in 40 CFR 122.2, the Waters of the U.S. are defined as: (a) All waters, which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) All interstate waters, including interstate "wetlands;" (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as Waters of the U.S. under this definition; (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition; (f) The territorial seas; and (g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)

through (f) of this definition. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the USEPA.

Water Quality Objectives – Means the numeric or narrative limits or levels of water quality constituents or characteristics which are established for the reasonable protection of Beneficial Uses of water or the prevention of Nuisance within a specific area. [California Water Code Section 13050(h)]

Water Quality Standards –The water quality goals of a waterbody (or a portion of the waterbody) designating Beneficial Uses to be made of the water and the Water Quality Objectives or criteria necessary to protect those uses. These standards also include California's anti-degradation policy.

Watershed – That geographical area which drains to a specified point on a watercourse, usually a confluence of streams or rivers (also known as drainage area, catchments, or river basin).

Watershed Action Plan (WAP) – Integrated plans for managing a watershed that include consideration of water quality, Hydromodification, water supply and habitat protection. The Watershed Action Plan integrates existing watershed based planning efforts and incorporates watershed tools to manage cumulative impacts of development on vulnerable streams, preserve structure and function of streams, and protect source, surface and groundwater quality and water supply in the Permit Area. The Watershed Action Plan should integrate Hydromodification and water quality management strategies with land use planning policies, ordinances, and plans within each jurisdiction.

WDID [Waste Discharge Identification] – Identification number provided by the State when a Notice of Intent is filed.

Wet Season/Wet Weather – October 1 through May 31st of each year unless defined otherwise in the specific applicable TMDL implementation plan. The Middle Santa Ana River TMDL defines the wet season as November 1 through March 31st and the Canyon Lake/Lake Elsinore TMDL monitoring defines it as October 1st through May 31st.

WQMP – Water Quality Management Plan as discussed in Section 6 of the DAMP.

WRCOG - Western Riverside Council of Governments

APPENDIX 5

NOTICE OF INTENT AND NOTICE OF TERMINATION FOR MUNICIPAL CONSTRUCTION ACTIVITIES

ORDER NO. R8-2010-0033

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD – SANTA ANA REGION

NOTICE OF INTENT

TO COMPLY WITH THE TERMS OF THE RIVERSIDE COUNTY MUNICIPAL STORMWATER PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

ORDER No. R8-2010-0033 (NPDES No. CAS618033)

MARK ONLY ONE ITEM 1. ☐ New Construction/Reconstruction 2. ☐ Change of Information for WDID# _____

I. OWNER

Name	Contact Person		
Mailing Address	Title		
City	State **CA**	Zip	Phone ( ) – Fax ( ) – Email :

II. CONTRACTOR INFORMATION

Name	Contact Person		
Local Mailing Address	Title		
City	State	Zip	Phone ( ) – Fax ( ) – Email:

III. SITE INFORMATION

A. Project Title	Site Address		
City/Unincorporated Area	State **CA**	Zip	Contact Person Phone ( ) –
B. Construction commencement date: (Month / Day / Year)	C. Projected construction completion date: (Month / Day / Year)		

D. Type of Work: ☐ Utility ☐ Flood Control ☐ Transportation ☐ Other (Specify) Description of Work: _____	E. Total size of project/construction site: ____Acres Total size of area to be disturbed:_ ____Acres.

IV. RECEIVING WATER INFORMATION

A. Does the storm water runoff from the construction site discharge to (check all that apply):

1. ☐ Indirectly to Waters of the U.S.
2. ☐ MS4 Facility - Enter owner's name:_____
3. ☐ Directly to Waters of U.S. (e.g. , river, lake, creek, stream, or to a pipe/channel that flows without inflow from other sources between site and water body etc.)

V. IMPLEMENTATION OF NPDES PERMIT REQUIREMENTS

A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (mark one) ☐ A SWPPP has been prepared for this project and is available for review ☐ A SWPPP will be prepared and ready for review by (date): ___/___/___ B. Date WQMP approved by MS4 Permittee: ___/___/___ ☐ Not Applicable.	C. MONITORING PROGRAM (MP) (mark one) ☐ A MP has been prepared for this facility and is available for review ☐ A MP will be prepared and ready for review by (date): ___/___/___

VI. CERTIFICATIONS

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. In addition, I certify that Order No. R8-2010-0033; (specifically Sections XII.F., XIV, XVI, and XX), including the development and implementation of a Storm Water Pollution Prevention Plan and a Monitoring Program Plan, will be complied with."

Printed Name: _____ **Title:** _____

Signature: _____ **Date:** _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD – SANTA ANA REGION

NOTICE OF TERMINATION

OF COVERAGE UNDER THE RIVERSIDE COUNTY MUNICIPAL STORMWATER PERMIT
FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

ORDER No. R8-2010-0033 (NPDES No. CAS618033)

I. WDID No. _____

II. OWNER

Name	Contact Person		
Mailing Address	Title		
City	State	Zip	Phone ( ) – Fax ( ) – Email:

III. SITE INFORMATION

A. Original Project Title	Site Address			
City/Unincorporated Area	State CA	Zip	Site Contact Person	
B. Contractor Name	Phone ( ) – Fax ( ) – Email:		Title	
Local Mailing Address	City		State	Zip
Qualified SWPPP Practitioner	Phone ( ) – Fax ( ) – Email:			

IV. BASIS OF TERMINATION

__ 1. The construction project is completed and the following conditions have been met.

- ☐ All elements of the Storm Water Pollution Prevention Plan have been completed.
- ☐ Construction materials and waste have been disposed of properly.
- ☐ The site is in compliance with all local storm water management requirements.
- ☐ A post-construction storm water operation and management plan is in place (Attach a description of the post construction BMPs, the location (Latitude /Longitude), and a map of the locations of the post construction BMPs).
- ☐ Date field verification inspection performed and include a copy of the field verification report. ___/___/___

__ 2. Construction activities have been suspended; either temporarily ____ or indefinitely ___ and the following conditions have been met.

- ☐ All elements of the Storm Water Pollution Prevention Plan have been completed.
- ☐ Construction materials and waste have been disposed of properly.
- ☐ The site is permanently stabilized (greater than 3 years without maintenance).
- ☐ The site is in compliance with all local storm water management requirements.

Date of suspension ____ / ____ / ____ Expected start up date ____ / ____ / ____

V. CERTIFICATION

I certify under penalty of law that all storm water discharges associated with construction activity from the identified site that are authorized by NPDES General Permit No. CAS000002 have been eliminated or that I am no longer the owner of the site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under the General Permit, and that discharging pollutants in storm water associated with construction activity to Waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an owner of liability for any violation of the General Permit or the Clean Water Act.

Printed Name: _____ **Title:** _____

Signature: _____ **Date:** _____

APPENDIX 6

FACT SHEET

ORDER NO. R8-2010-0033

State of California

California Regional Water Quality Control Board

Santa Ana Region

3737 Main Street, Suite 500

Riverside, CA 92501- 3348

FACT SHEET

January 29, 2010

ITEM: 09

SUBJECT: Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County within the Santa Ana Region, Urban Runoff Management Program, Order No. R8-2010-0033 (NPDES No. CAS 618033)

I. INTRODUCTION

A. PROJECT

The attached pages contain information concerning an application for renewal of Waste Discharge Requirements and a National Pollutant Discharge Elimination System (NPDES) permit, Order No. R8-2010-0033 (Order), NPDES No. CAS 618033, which prescribes Waste Discharge Requirements for Urban Runoff (as defined in Appendix 4) from the cities and the unincorporated areas in Riverside County within the jurisdiction of the Santa Ana Regional Board Water Quality Control Board (Regional Board). This Order regulates discharges of Urban Runoff from the Permit Area, as defined in Order No. R8-2010-0033 and shown in Appendix 1.

If appropriate Pollution control measures are not implemented, Urban Runoff, (as defined in Appendix 4 – Glossary), may contain pathogens (bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients, mostly nitrogen and phosphorus compounds), oxygen-demanding substances (decaying matter), pesticides (DDT, chlordane, diazinon, chlorpyrifos), heavy metals (cadmium, chromium, copper, lead, zinc), and petroleum products (oil & grease, PAHs, petroleum hydrocarbons).

If not properly managed and controlled, urbanization may change the stream hydrology and increase Pollutant loading to Receiving Waters. As a watershed undergoes urbanization, pervious surface area decreases, runoff volume and velocity may increase, riparian habitats and wetland habitats decrease, the frequency and severity of flooding may increase, and Pollutant loading may increase. Most of these impacts occur due to human activities (Anthropogenic) that occur during and/or after urbanization. The Pollutants and hydrologic changes may

cause declines in aquatic resources, cause toxicity to aquatic organisms, and impact human health and the environment. Based on information provided in Section D of the Riverside County Flood Control and Water Conservation District's (RCFC&WCD or the Principal Permittee as context indicates) Hydrology Manual, it is feasible that, in semi-arid regions, development may result in the creation of a net increase in absorption.

Properly planned high-density development may reduce urban sprawl and problems associated with sprawl. Urban in-fill and high-density development are elements of smart growth, which creates the opportunity to maintain relatively natural open space elsewhere in the Permit Area (see Appendix 4). The goal of Low Impact Development (LID) is to mimic pre-development runoff quality and quantity.

On April 27, 2007, The RCFC&WCD in cooperation with the County of Riverside (the County) and the incorporated cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, and San Jacinto jointly submitted a NPDES Application No. CAS 618033, a Report of Waste Discharge (the ROWD) and a revised Drainage Area Management Plan (DAMP) to renew the Municipal Separate Storm Sewer System (MS4) NPDES permit for the Santa Ana River watershed (the Permit Area) within Riverside County. This Order renews the NPDES permit authorizing Urban Runoff in the Permit Area (see Appendix 1, "urban area" includes those portions of "agriculture" and "open space" that convert to industrial, commercial, or residential use during the term of this Order). To more effectively carry out the requirements of this Order, the Permittees have agreed that the RCFC&WCD will continue as the Principal Permittee and the County and the incorporated cities will continue as the Co-Permittees.

On February 5, 2008 Wildomar residents voted for cityhood and the City incorporated on July 1, 2008. Menifee residents voted for cityhood on June 3, 2008 and the City incorporated on October 1, 2008. On May 6, 2009, the City of Menifee and on May 5, 2009, the City of Wildomar submitted Letters of Intent to be a Co-Permittee in this Order and for the purposes of this Order shall be considered as such. The cities in the Permit Area, along with the County, are collectively referred to as the Co-Permittees, and collectively, with the Principal Permittee, the Permittees.

B. PROJECT AREA

The Permit Area contains 1,396 square miles or 19.1% of the 7,300 square miles within Riverside County and includes 15 of the 26 municipalities within Riverside County. The California Department of Finance estimates that as of January 1,

2006, the population of Riverside County is 1,953,330 of which 1,237,388[1] reside within the Permit Area. The California Department of Finance estimates that as of January 1, 2009, the population of Riverside County was 2,107,653[2]. Beaumont, Calimesa, and Canyon Lake have populations of 25,000 or less. The County, Corona, Moreno Valley and Riverside have populations of 100,000 or more. The Southern California Association of Governments estimates that the County of Riverside will grow by 16% between 2006 and 2010 (2008 RTP Growth Forecast by City). The most significant percentage growth in population between 2006 and 2010 occurred in the Cities of Beaumont, Calimesa, and San Jacinto.

Land uses in Riverside County within the Santa Ana River Region include open space, residential, commercial, light industrial, heavy industrial, and agriculture. The agricultural land uses include row crops, nurseries, citrus groves and vineyards, dairies, ranches, poultry and hog farms, and other agricultural related uses with one single-family residence allowed per 10 acres (County of Riverside General Plan, Land Use Element 2003). The conversion of agricultural lands and open space to other "developed" land uses has been ongoing and will continue. Based on Riverside County Assessor's Parcel Data as of February 2006, the land use mix of the County area within the Santa Ana Region was: 29,441 acres used or zoned for commercial/industrial purposes (3.3%), 70,499 acres for residential purposes (7.9%), 11,798 acres utilized for improved streets and roads (1.3%), 9,872 acres are used for parks and recreational facilities (1.1%), 70,164 acres are used for rural residential (7.9%), 453,976 acres are utilized for open space (50.8%), and 48,627 acres are used for agricultural purposes (5.4%). The federal, state, tribal, and non-Permittee jurisdictional lands within the portion of Riverside County within the Santa Ana Region total 199,064 acres (22.3%).

Less than one fifth (1/5) of Riverside County is within the Permit Area. The Permit Area includes the "urban area" as shown in Appendix 1 and those portions of "agriculture" and "open space" as shown on Appendix 1 that do convert to industrial, commercial or residential use during the term of this Order. The Permit Area is delineated by the San Bernardino-Riverside County boundary line on the north and northwest, the Orange-Riverside County boundary line on the west, the Santa Ana-San Diego Regional Board boundary line on the south, and the Santa Ana-Colorado River Basin Regional Board boundary line on the east. Sixty-seven percent of Riverside County's population resides within the Regional Board's jurisdiction. The San Diego and the Colorado River Basin Regional Water Quality Control Boards regulate Urban Runoff from those portions of Riverside County outside of the Permit Area shown in Appendix 1.

[1] As per Section 3.3.1 of the 2007 ROWD, (Western Riverside Council of Governments (WRCOG), excluding the cities of Menifee and Wildomar

[2] E-1 report dated April 30, 2009 (http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/2008-09/documents/E-1_2009%20Press%20Release.pdf).

C. CLEAN WATER ACT REQUIREMENTS

The federal Clean Water Act (the "CWA") established a national policy designed to help maintain and restore the physical, chemical and biological integrity of the nation's waters. In 1972, the CWA established the NPDES permit program to regulate the discharge of Pollutants from Point Sources to "Waters of the U.S.". From 1972 to 1987, the main focus of the NPDES program was to regulate conventional Pollutant sources such as sewage treatment plants and industrial facilities. As a result, on a nationwide basis, non-point sources, including agricultural runoff and Urban Runoff, now contribute a larger portion of many kinds of Pollutants than the more thoroughly regulated sewage treatment plants and industrial facilities.

The National Urban Runoff Program (NURP) final report to the Congress (USEPA, 1983) concluded that the goals of the CWA could not be achieved without addressing Urban Runoff discharges. The 1987 CWA amendments established a framework for regulating Urban Runoff. Pursuant to these amendments, the Santa Ana Regional Board began regulating discharges from MS4s in 1990.

II. REGULATORY BACKGROUND AND CLEAN WATER ACT REQUIREMENTS

As water flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas, it may intercept Pollutants from these areas and transport them to Waters of the U.S.. As indicated in I.A, above, Urban Runoff may contain pathogens, sediment, trash, fertilizers, oxygen-demanding substances, pesticides, heavy metals, and petroleum products. If not properly managed and controlled, urbanization may adversely impact water quality and quantity in the receiving waters.

However, urban development projects that incorporate LID concepts may reduce the impact of urban development on runoff water quality and quantity.

Studies[3] conducted in the Southern California area have established storm water runoff from urban areas as significant sources of Pollutants in surface waters. The Santa Ana River is impacted by agricultural, other discharges and Urban Runoff as it flows through the San Bernardino County and Riverside County areas prior to flowing through Orange County and into the Pacific Ocean.

If not properly controlled, Urban Runoff could be a significant source of Pollutants in the Waters of the U.S. Table 1 includes a list of Pollutants, potential sources, and some of the adverse environmental consequences mostly resulting from urbanization.

[3] Bay, S., Jones, B. H. and Schiff, K, 1999, Study of the Impact of Stormwater Discharge on Santa Monica Bay. Sea Grant Program, University of Southern California; and Haile, R.W., et al., 1996, An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Southern California Coastal Water Research Project (1992), Surface Runoff to the Southern California Bight.

Table 1[4]
Pollutant Sources and Impacts of a Number of Pollutants
On Waters of the U.S.

Pollutants	Sources	Effects and Trends
Toxins (e.g., biocides, PCBs, trace metals, heavy metals)	Industrial and municipal wastewater; runoff from farms, forests, urban areas, and landfills; erosion of contaminated soils and sediments; vessels; atmospheric deposition	Poison and cause disease and reproductive failure; fat-soluble toxins may bioconcentrate, particularly in birds and mammals, and pose human health risks. Inputs into Waters of the U.S. have declined, but remaining inputs and contaminated sediments in urban and industrial areas pose threats to living resources.
Pesticides (DDT, diazinon, chlorpyrifos)	Urban Runoff, agricultural runoff, commercial, industrial, residential and farm use	The use of legacy pesticides (DDT, chlordane, dieldrin) has been banned or restricted; still persists in the environment; some of the other pesticide uses are curtailed or restricted.
Biostimulants (organic wastes, plant nutrients)	Sewage and industrial wastes; runoff from farms and urban areas; nitrogen from combustion of fossil fuels	Organic wastes overload bottom habitats and deplete oxygen; nutrient inputs stimulate algal blooms (some harmful), which reduce water clarity, and alter food chains supporting fisheries. While organic waste loading has decreased, nutrient loading has increased (NRC, 1993a, 2000a).
Petroleum products (oil, grease, petroleum hydrocarbons, PAHs)	Urban Runoff and atmospheric deposition from land activities; accidental spills; oil & gas production activities; natural seepage; and PAHs from internal combustion engines	Petroleum hydrocarbons can affect bottom organisms and larvae; spills affect birds, mammals and aquatic life. While oil Pollution from accidental spills and production activities has decreased, diffuse inputs from land-based activities have not (NRC, 1985).
Radioactive isotopes	Atmospheric fallout, industrial and military activities	Bioaccumulation may pose human health risks where contamination is heavy.
Sediments	Erosion from farming, construction activities, forestry, mining, development; river diversions; coastal dredging and mining	Reduce water clarity and change bottom habitats; carry toxins and nutrients; clog fish gills and interfere with respiration in aquatic fauna. Sediment delivery by many rivers has decreased, but sedimentation poses problems in some areas.
Plastics and other debris	Ships, boats, fishing nets, containers, trash, Urban Runoff	Entangles aquatic life or is ingested; degrades, beaches, lake shores, near shore habitats, and wetland habitats. Floatables (from trash) are an aesthetic Nuisance and can be a substrate for algae and insect vectors.
Thermal	Cooling water from power plants and industry, urban run off from impervious surfaces	Kills some temperature-sensitive species; and displaces others. Generally, less a risk to marine life than thought 20 years ago.
Noise	Vessel propulsion, sonar, seismic prospecting, low-frequency sound used in defense and research	May disturb marine mammals and other organisms that use sound for communication.
Pathogens (bacteria, protozoa, viruses)	Sewage, Urban Runoff, livestock, wildlife, and discharges from boats and cruise ships.	Pose health risks to swimmers and consumers of aquatic life. Sanitation has improved, but standards have been raised (NRC 1999a).
Alien species	Ships and ballast water, fishery stocking, aquarists	Displace native species, introduce new diseases; growing worldwide problem (NRC 1996).

[4] Adapted from "Marine Pollution in the United States" prepared for the Pew Oceans Commission, 2001.

The CWA prohibits the discharge of any Pollutant to navigable waters from a Point Source unless an NPDES permit authorizes the discharge. Efforts to improve water quality under the NPDES program traditionally and primarily focused on reducing Pollutants in discharges of industrial process wastewater and municipal sewage. The 1987 amendments to the CWA required MS4s and industrial facilities, including construction sites, to obtain NPDES permits for storm water runoff from their facilities. On November 16, 1990, the USEPA promulgated the final NPDES Phase I storm water regulations. The storm water regulations are contained in 40 CFR Parts 122, 123 and 124.This Order does not constitute an unfunded local government mandate subject to subvention under Article XIIIB, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Order implements federally mandated requirements under federal Clean Water Act section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. U.S.E.P.A.* (9th Cir. 1992) 966 F.2d 1292, 1308, fn.17). The authority exercised under this Order is not reserved state authority under the Clean Water Act's savings clause (*cf. Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 882-883.)

Likewise, the provisions of this Order to implement total maximum daily loads (TMDLs) are federal mandates. The federal Clean Water Act requires TMDLs to be developed for water bodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once the U.S. Environmental Protection Agency or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable wasteload allocation. (40 C.F.R. § 122.44(d)(1)(vii)(B).)

Second, the local agency permittees' obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges. With a few inapplicable exceptions, the Clean Water Act regulates the discharge of pollutants from point sources (33 U.S.C. § 1342) and the Porter-Cologne regulates the

discharge of waste (Wat. Code, § 13263), both without regard to the source of the pollutant or waste. As a result, the "costs incurred by local agencies" to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

The Clean Water Act and the Porter-Cologne Water Quality Control Act largely regulate storm water with an even hand, but to the extent there is any relaxation of this even-handed regulation, it is in favor of the local agencies. Except for municipal separate storm sewer systems, the Clean Water Act requires point source dischargers, including discharges of storm water associated with industrial or construction activity, to comply strictly with water quality standards. (33 U.S.C. § 1311(b)(1)(C), *Defenders of Wildlife v. Browner* (1999) 191 F.3d 1159, 1164-1165 [noting that industrial storm water discharges must strictly comply with water quality standards].) As discussed in prior State Water Resources Control Board decisions, this Order does not require strict compliance with water quality standards. (SWRCB Order No. WQ 2001-15, p. 7.) The Order, therefore, regulates the discharge of waste in municipal storm water more leniently than the discharge of waste from non-governmental sources.

Third, the local agency permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order. The fact sheet demonstrates that numerous activities contribute to the pollutant loading in the municipal separate storm sewer system. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

Fourth, the Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in federal Clean Water Act section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent, the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (Accord *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the Permittees have voluntarily sought a program-based municipal storm water permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. E.P.A.* (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The local agencies' voluntary decision to file a report of waste discharge proposing a program-based

permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. USEPA* (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fifth, the local agencies' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIIIB, Section (6) of the California Constitution.

On July 13, 1990, the Regional Board adopted the first term Riverside County Area-wide MS4 Permit, Order No. 90-104 (NPDES No. CA 8000192), for Urban Runoff from areas in Riverside County within the Permit Area. On March 8, 1996, the Regional Board renewed Order No. 90-104 by adopting the second term area-wide MS4 Permit, Order No. 96-30, (NPDES No. CAS618033). On October 25, 2002, the Regional Board renewed Order No. 96-30 by adopting the third term area-wide MS4 Permit, Order No. R8-2002-0011.

This Order renews the area-wide NPDES MS4 Permit for the Permit Area for the fourth-term, in accordance with Section 402 (p) of the CWA and all requirements applicable to an NPDES permit issued under the issuing authority's discretionary authority. The requirements included in this Order are consistent with the CWA, the federal regulations governing urban storm water discharges, the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan), the California Water Code, and the State Water Resources Control Board's (State Board) Plans and Policies.

The Basin Plan is the basis for the Regional Board's regulatory programs. The Basin Plan was developed and is periodically reviewed and updated in accordance with relevant federal and state law and regulation, including the CWA and the California Water Code. As required, the Basin Plan designates the Beneficial Uses of the waters of the Region and specifies Water Quality Objectives intended to protect those uses. (Beneficial Uses and Water Quality Objectives, together with an anti-degradation policy, comprise federal "Water Quality Standard"). The Basin Plan also specifies an implementation plan, which includes certain discharge prohibitions. In general, the Basin Plan makes no distinctions between wet and dry weather conditions in designating Beneficial Uses and setting Water Quality Objectives, i.e., the Beneficial Uses, and correspondingly, the Water Quality Objectives are assumed to apply year-round. (Note: In some cases, Beneficial Uses for certain surface waters are designated as "I", or intermittent, in recognition of the fact that surface flows (and Beneficial Uses) may be present only during wet weather.) Most Beneficial Uses and Water Quality Objectives were established in the 1971, 1975, 1983, and 1995 Basin Plans. The 1995 Basin Plan was updated in February 2008[5]. Amendments to the Basin Plan included new nitrate-nitrogen and TDS objectives for specified

[5] http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml

management zones, new nitrogen and TDS management strategies applicable to both surface and ground waters and various Total Maximum Daily Loads (TMDLs) and TMDL Implementation Plans that had been adopted for Impaired Waterbodies within the region.

Water Code Section 13241 requires that certain factors must be considered when Water Quality Objectives are established. These factors include economics and the need for developing housing in the Region. During the 2002 MS4 Permit development process, the Permittees raised an issue regarding compliance with Section 13241 of the California Water Code with respect to Water Quality Objectives for wet weather conditions, specifically the cost of achieving compliance during wet weather conditions and the need for developing housing within the Region and its impact on Urban Runoff. During the 2006 review of the Basin Plan, this matter was incorporated on the triennial review list. To begin addressing this issue, Regional Board staff, in collaboration with the MS4 Permittees in the Santa Ana River watershed, has organized a Storm Water Quality Standards Task Force (SWQSTF).

The SWQSTF is analyzing, monitoring and documenting actual and potential Beneficial Uses of surface waters within the Santa Ana River watershed. Based on the findings, the SWQSTF plans to recommend changes to the current Beneficial Use designations and Water Quality Objectives specified in the Basin Plan. This Order may be reopened to incorporate any changes to the Water Quality Standards. The SWQSTF is currently focusing on Recreational Beneficial Uses. In the meantime, the provisions of this Order will result in reasonable further progress towards the attainment of the existing Water Quality Objectives, in accordance with the discretion in the permitting authority recognized by the United States Court of Appeals for the Ninth Circuit in Defenders of Wildlife vs. Browner, 191 F.3d 1159, 1164 (9th Cir. 1999).

III. EXCLUSIONS TO THE PERMIT AREA

Areas of the County not addressed or which are excluded by the storm water regulations and areas not under the jurisdiction of the Permittees were excluded from the area requested for coverage under the ROWD. These include the following areas and activities:

- Federal lands and State properties, including, but not limited to, military bases, national forests, hospitals, colleges and universities, and highways;
- Native American tribal lands;
- Open space and rural (non-urbanized) areas;

- Agricultural lands (return flows from irrigated agriculture and nonpoint source agricultural activities are exempted under the CWA); and

- Utilities, railroads, and special districts (including school districts, park districts, publicly owned treatment works (POTWs) and water utilities, etc.).

These areas in the Permit Area for which coverage under a NPDES MS4 permit is excluded, are shown in Appendix 1. The Regional Board will coordinate with these entities to implement programs that are consistent with the requirements of this Order. The Regional Board, pursuant to 40 CFR 122.26(a), has the discretion and authority to require non-cooperating entities to participate in this Order. The Regional Board may also consider such facilities for coverage under its NPDES permitting scheme pursuant to USEPA Phase II stormwater regulations.

The Regional Board recognizes that the Permittees should not be held responsible for discharges from such facilities or Pollutants in those discharges. However, to the extent that the Permittees authorize the connection of the discharges from these facilities into their MS4, this Order requires the Permittees to notify these facilities, in writing, of the state and local post-construction standards and/or other applicable requirements of this Order.

IV. BENEFICIAL USES

Stormwater flows discharged to MS4s in the Permit Area are tributary to various waterbodies (inland surface streams, lakes and reservoirs) of the State. The Beneficial Uses of these waterbodies may include municipal and domestic supply, agricultural supply, industrial service and process supply, groundwater recharge, water contact recreation, non-contact water recreation, and sport fishing, warm freshwater habitat, cold freshwater habitat, preservation of biological habitats of special significance, wildlife habitat and preservation of rare, threatened or endangered species. The ultimate goal of this Order is to protect the Beneficial Uses and quality of the Receiving Waters.

To protect the Beneficial Uses of the Receiving Waters, the Pollutants from all sources, including Urban Runoff, need to be controlled. Recognizing this, and the fact that Urban Runoff contains Pollutants, an area-wide MS4 permit is the most effective way to develop and implement a comprehensive Urban Runoff management program in a timely manner. This area-wide MS4 permit contains requirements with time schedules that will allow the Permittees to continue to address water quality problems caused by Urban Runoff through their management programs to reduce Pollutants in Urban Runoff discharges consistent with the MEP standard [See Appendix 4, Glossary].

V. WATERSHED MANAGEMENT IN THE UPPER SANTA ANA RIVER BASIN

A. Management Approach

To regulate and control Urban Runoff from the Permit Area to the MS4, an area-wide approach is expected to be most effective. The entire MS4 is not controlled by a single entity; the RCFC&WCD, the County, several cities, the State Department of Transportation (Caltrans), and the U.S. Army Corps of Engineers, in addition to other smaller entities, manage portions of the MS4. In addition to the cities, the County and the RCFC&WCD, there are a number of other significant contributors of Urban Runoff to the MS4. These include: large institutions such as the State university system, prisons, schools, hospitals, etc.; federal facilities such as military sites, etc.; State agencies, such as Caltrans; water and wastewater management agencies such as Eastern and Western Municipal Water District; the National Forest Service and State parks. The State Board has issued a separate NPDES MS4 permit to Caltrans. In addition, Caltrans, and the other contributors identified, are not under the jurisdiction of the Permittees. The management and control of the entire MS4 cannot be effectively carried out without the cooperation and efforts of all these entities. Also, it would not be effective to issue a separate MS4 permit to each of the entities within the Permit Area whose land/facilities drain into the MS4 facilities operated by the Permittees and ultimately to Waters of the U.S.. The Regional Board has concluded that the best management option for the Permit Area is to issue an area-wide NPDES MS4 permit to the Permittees.

Although, the Urban Runoff from the Permit Area drains to the Prado Basin, and ultimately into Orange County, Urban Runoff from Orange County areas are regulated under NPDES No. CAS 618030. Some areas within Riverside County are within the Colorado River Basin and San Diego Regional Boards' jurisdictions. Permit requirements for Urban Runoff from the drainage areas of Riverside County within the jurisdiction of the San Diego and Colorado River Basin Regional Boards are addressed by those Regional Boards.

In developing Urban Runoff management and monitoring programs, consultation/coordination with other drainage management entities and other Regional Boards is essential. Common programs, reports, implementation schedules and efforts are desirable and will be utilized to the MEP.

Cooperation and coordination among all the stakeholders are essential for efficient and economical management of the Santa Ana River watershed. It is also critical to manage Non-point Sources at a level consistent with the management of Urban Runoff in a watershed in order to successfully prevent or remedy water quality Impairment. Regional Board staff will facilitate coordination of monitoring and management programs among the various stakeholders.

An integrated watershed management approach for Urban Runoff in the Santa Ana River watershed is consistent with the Strategic Plan (2008-2012[6]) and Initiatives for the State and Regional Boards and the draft California Water Plan Update[7]. A watershed wide approach is also necessary for implementation of the Load Allocations (LAs) and Waste Load Allocations (WLAs) developed under the TMDL process. The Permittees and all the affected entities are encouraged to participate in regional or watershed solutions, instead of project-specific and fragmented solutions.

The Pollutants in Urban Runoff originate from multiple sources and effective control of these Pollutants requires a cooperative effort of all the stakeholders and many regulatory agencies. Every stage of urbanization should be considered in developing appropriate Urban Runoff Pollution control methodologies. The program's success depends upon consideration of Pollution control techniques during planning, construction and post-construction operations. At each stage, appropriate Pollution Prevention , Site Design , Source Control, and, if necessary, Treatment Control BMPs should be considered.

B. SUB-WATERSHEDS AND MAJOR CHALLENGES

The Santa Ana River watershed is the major watershed within the Santa Ana Region. This watershed is divided into three sub-watersheds: the Lower Santa Ana, Upper Santa Ana, and San Jacinto.

1. The lower Santa Ana River sub-watershed (downstream from Prado Basin) includes the north half of Orange County. The Upper Santa Ana River sub-watershed includes the southwestern corner of San Bernardino County and the northwestern corner of Riverside County. The San Jacinto sub-watershed includes the northwest corner of Riverside County south of the Upper Santa Ana River sub-watershed within the Santa Ana Region.

   Generally, the San Bernardino County drainage areas drain to the Riverside County drainage areas, and Riverside County drainage areas discharge to Orange County through Prado Dam on the Santa Ana River. Most of the flow in the Santa Ana River is recharged into the groundwater in San Bernardino, Riverside, and Orange counties but infrequently some of the flow may be discharged to the Pacific Ocean as a result of heavy storm events.

   Water from rainfall and snow melt runoff, and surfacing ground water from various areas either discharge directly to the Santa Ana River or to watercourses tributary to the Santa Ana River. Other major rivers in the Permit Area include the San Jacinto River and Temescal Creek. The San

[6] State Water Resources Control Board, Strategic Plan Update, 2008-2012, September 2, 2008
[7] http://www.waterplan.water.ca.gov/docs/cwpu2009/1208prd/vol2/UrbanRunoff_PRD_09.pdf

Jacinto Mountain areas drain into the San Jacinto River, which discharges into Canyon Lake and then to Lake Elsinore. The San Jacinto River is ephemeral. Smaller storms tend to be fully captured by Canyon Lake, which the San Jacinto River drains into, with discharges from Canyon Lake to Lake Elsinore only occurring in larger events or wetter years. Any overflow from Lake Elsinore is tributary to Temescal Creek, which flows into the Santa Ana River at the Prado Flood Control Basin. Overflow from Lake Elsinore occurs infrequently, only once every 12 to 15 years.

2. Upper Santa Ana River Sub-watershed:

   a. Reach 3 of the Santa Ana River (Prado Dam to Mission Boulevard in Riverside): Pathogens are the Pollutant of Concern for Reach 3 based on adopted TMDLs and the 2006 303(d) list . With the adoption of the TMDL for Bacterial Indicators, the Basin Plan now contains schedules for achieving compliance with WLAs for Bacterial Indicators in the Middle Santa Ana River (MSAR) subwatershed.

   b. Reach 4 of the Santa Ana River: Reach 4 of the Santa Ana River is the portion of the River from Mission Boulevard Bridge in Riverside to the San Jacinto fault (Bunker Hill Dike) in San Bernardino. Reach 4 is also listed in the CWA Section 303(d) as an Impaired Waterbody. Most of Reach 4 of the River is in San Bernardino County. Pathogens are the Pollutant of Concern for Reach 4and a TMDL is scheduled for completion in 2019.

   c. Other water quality problems along this reach of the River include the buildup of total dissolved solids (TDS, dissolved salts or minerals) and nitrogen, largely in nitrate form. The buildup of TDS and nitrates can impact downstream Beneficial Uses, including groundwater recharge. The buildup of TDS and nitrate is mostly due to agricultural uses, including dairies and the application of fertilizers, municipal and industrial wastewater discharges, and reuse and recycling operations. A complex set of programs and policies are included in the Basin Plan to address this problem, including a water supply plan, a wastewater management plan, and a groundwater management plan. Other elements of the Basin Plan include the Non-point Source program and the storm water program. The Basin Plan identifies the Statewide General Permits and the MS4 permits as the regulatory tools for storm water management in the Basin. In light of the recently adopted Nitrogen-TDS objectives for certain management zones, this Order requires the Permittees to determine baseline concentration of these constituents in dry weather runoff, if any, from significant Outfall locations. The Order also includes Effluent Limitations for TDS and nitrates under dry weather conditions.

d. San Jacinto Sub-watershed: Canyon Lake and Lake Elsinore are in this watershed and are listed on the 2006 303(d) list for pathogens (Canyon Lake) and PCBs and unknown Toxicity (Lake Elsinore). Nutrient TMDLs have been developed for both Canyon Lake and Lake Elsinore. The Basin Plan contains schedules for achieving compliance with WLAs for nutrients in the San Jacinto sub-watershed (Canyon Lake/Lake Elsinore).

C. CWA SECTION 303(d) LIST AND TMDLS:

Pursuant to Section 303(b) of the CWA, the 2006 water quality assessment conducted by the Regional Board listed a number of waterbodies within the Region under Section 303(d) of the CWA as Impaired Waterbodies. These are waterbodies where Water Quality Objectives are being violated and it is presumed that the designated Beneficial Uses are not met. The sources of the Impairments include POTW discharges, and runoff from agricultural, open space and urban land uses. The Impaired Waterbodies in Riverside County within the Santa Ana Regional Board's jurisdiction are listed in Table 2. In addition, CWA Section 303(d) requires states to develop and submit to USEPA for approval a list of waterbodies that are not meeting Water Quality Standards and are not expected to attain these standards even with technology based controls. CWA Section 305(b) requires States to biennially prepare and submit to the USEPA for approval a report assessing statewide surface water quality.

Regional Board staff have reviewed and reevaluated all water quality monitoring and information, combined the CWA Section 305(b) Report with the Section 303(d) List of Impaired Waters and introduced the Proposed 2008 303(d)-305(b) Integrated Report that was adopted by the Regional Board on April 24, 2009. The additional Impaired Waterbodies that are on this list are also identified in Table 2. The Proposed 2008 303(d)-305(b) Integrated Report will not be effective until it has been approved by the State Board or the USEPA.

Federal regulations require that a TMDL be established for each 303(d) listed waterbody for each of the Pollutants causing Impairment. The TMDL is the total amount of the Pollutant that can be discharged without Impairing Water Quality Standards in the Receiving Water, i.e., Water Quality Objectives are met and the Beneficial Uses are protected. It is the sum of the individual WLAs for point source inputs, and LAs for Non-point Source inputs and natural background, with a margin of safety. The TMDLs are the basis for limitations established in Waste Discharge Requirements. TMDLs are being developed for all Pollutants identified in Table 2. The Permittees are required to revise their DAMP, at the direction of the Executive Officer, to incorporate TMDL Program Implementation Plans developed and approved pursuant to the process for the designation and implementation of TMDLs for Impaired Waterbodies.

For 303(d) listed waterbodies identified as potentially Impaired by Urban Runoff and without a TMDL, the Permittees are required to provide special protections such as requiring effective post-construction BMPs, enhanced training programs and developing targeted public outreach that would address the Pollutants of Concern.

This Order incorporates TMDLs that have been adopted for Bacterial Indicator in the MSAR watershed and for nutrients in the Lake Elsinore and Canyon Lake watersheds. On August 26, 2005, the Regional Board adopted Resolution No. R8-2005-001 amending the Basin Plan to incorporate Bacterial Indicator TMDL for MSAR watershed. On December 20, 2004, the Regional Board adopted resolution R8-2004-0037 amending the Basin Plan to incorporate the Lake Elsinore and Canyon Lake nutrient TMDLs. The stakeholders in these watersheds, including applicable Permittees, are collaborating in the development and implementation of the TMDLs.

This Order includes conditions necessary to implement the TMDLs already approved by the Regional Board as required by federal regulations at 40 CFR 122.44(d)(vii)(B). This Order incorporates the WLAs as Water Quality-Based Effluent Limitations (WQBEL) and requires Permittees to achieve the WLA for Urban Runoff through an iterative process of implementing BMPs. Failure to submit a TMDL Implementation Plan to the Regional Board or failure to implement the approved plan in a timely manner will be deemed to violate the conditions of this Order. The CWA requires the Permittees to have appropriate controls to reduce the discharge of Pollutants to the MEP, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such Pollutants (33 USC 1342(p)(3)(B)). MEP is a dynamic performance standard and it evolves as the knowledge of Urban Runoff control measures increases. Permittees are required to monitor and report effectiveness of their BMPs with respect to Pollutant reduction goal(s) as one measure of progress toward reducing Pollutant loads from urban sources in accordance with the compliance schedules specified in the TMDL Implementation Plans. If on-going monitoring indicates that implemented BMPs are insufficient to assure compliance with the relevant Water Quality Standard(s), then the Permittees are required to develop and implement more effective BMPs for the controllable urban sources within their jurisdiction to the MEP. In addition, the Permittees are required to submit a revised Comprehensive TMDL Plan documenting the completion schedule for any additional and/or more effective BMPs and must execute the plan upon approval by the Executive Officer. Taken together, these permit conditions are consistent with the facts and assumptions specified in the TMDLs, including the TMDL Implementation Plans, and are expected to achieve compliance with the related WLAs.

Discharge specifications are included for de-minimus types of discharges from Permittee-owned or Permittee-operated facilities and activities and for TDS and total inorganic nitrogen for dry weather discharges.

Table 2

2006 CWA Section 303(d) Listed Waterbodies and April 24, 2009 Proposed 2008 Integrated Report of 305(b) and 303(d) List of Water Quality Limited Segments

WATERBODY	HYDRO UNIT	POLLUTANT/ STRESSOR	SOURCE	SIZE AFFECTED
Canyon Lake	802.120	Pathogens	Nonpoint Source	453 Acres
Lake Elsinore	802.310	Unknown Toxicity	Unknown Nonpoint Source	2431 Acres
		PCB's.	Unknown Nonpoint Source	2431 Acres
		Proposed for 2008 Sediment Toxicity	Unknown Point and/or Nonpoint Sources	2431 Acres
Lake Fulmor	802.210	Pathogens	Unknown Nonpoint Source	4.2 Acres
Santa Ana River, Reach 3	801.200	Pathogens	Unknownn Nonpoint Source	3 miles
		Proposed for 2008 Copper – Wet Season	Unknown Nonpoint Source	3 Miles
Temescal Creek Reach 1		Proposed for 2008 pH	Unknown	Unknown

VI. FIRST, SECOND, AND THIRD TERM PERMITS

1. STORM WATER POLLUTION CONTROL PROGRAMS AND POLICIES

1. Prior to USEPA's promulgation of the final regulations implementing the storm water requirements of the 1987 CWA amendments, the counties of Orange, Riverside and San Bernardino requested an area-wide NPDES permit for storm

water runoff for each of the county areas within the Regional Board's jurisdiction. On July 13, 1990, the Regional Board issued Order No. 90-104 to the Permittees (first term MS4 Permit). In 1996, the Regional Board adopted Order No. 96-30 for the Riverside County Permit Area (second term permit). On October 24, 2002, the Regional Board adopted Order No. R8-2002-0011 for the Riverside County Permit Area (third term MS4 Permit). These MS4 Permits included the following requirements:

a. Prohibited Non-storm Water discharges to the MS4s with certain exceptions.
b. Required the Permittees to develop and implement a DAMP to reduce Pollutants in Urban Runoff to the MEP.
c. Required the discharges from the MS4 to meet in Receiving Waters.
d. Required the Permittees to identify and eliminate IC/IDs to the MS4.
e. Required the Permittees to establish legal authority to enforce Storm Water Ordinances.
f. Required monitoring of dry weather flows, storm flows, and Receiving Water quality, and program assessment.
g. Required the Permittees to inventory, prioritize and inspect construction sites and industrial and commercial facilities based on threat to water quality.
h. Required the Permittees to develop a restaurant inspection program to address practices that may impact Urban Runoff quality such as oil and grease disposal, trash bin area management, parking lot cleaning, spill clean-up, and inspection of grease traps or interceptors to ensure adequate capacity and proper maintenance.
i. Required the Permittees to review and approve Water Quality Management Plans (WQMPs) for categories of New Development and Significant Redevelopment projects to address post-development Urban Runoff water quality and Hydromodification.
j. Required the Permittees to develop a unified response plan to respond to sewage spills that may impact Receiving Water quality.

2. During the first term MS4 Permit, the Permittees developed a DAMP that was approved by the Executive Officer on January 18, 1994. The DAMP included five BMP groups: environmental education activities, solid waste activities, road drainage system operations and maintenance, regulatory and enforcement activities, and structural controls. The DAMP was updated as part of the second and third-term MS4 Permits. The Permittees submitted a revised DAMP with the ROWD for the fourth term MS4 Permit renewal.

3. The RCFC&WCD performs water quality monitoring activities in support of three separate area-wide NPDES MS4 Permits (Santa Ana, San Diego and Colorado River Basin) under the Consolidated Monitoring Program (CMP). The CMP

contains a combined 132 historical, active, and special project sampling locations in the three MS4 Permit regions. Within the Permit Area, water column samples and/or sediment samples have been collected at a total of 93 locations over the last nineteen years. These 93 locations are comprised of 45 MS4 outfalls, 43 Receiving Water, 8 sediment, and 2 special interest sampling locations. In addition, the Permittees participate in a number of sub-regional and regional monitoring programs and special studies.

4. During the third term MS4 Permit, the Executive Officer approved the delay in implementing the bioassessment requirement to allow the development of indices of biological integrity applicable to inland waters. Subsequently, a regional bioassessment monitoring was initiated by the Surface Water Ambient Monitoring Program (SWAMP) to determine the conditions of the receiving waters in a more holistic way. The Southern California Watershed Research Project (SCCWRP), in conjunction with the southern California MS4 Permit programs, has developed a regional bioassessment monitoring program in which the Permittees participating. This Order requires the Permittees to continue to participate in the regional bioassessment monitoring program. It is expected that these regional monitoring stations combined with other Permittee and regional monitoring efforts will be used to identify water quality problem areas and to re-evaluate the monitoring program and the effectiveness of the DAMP. The future direction of some of the DAMP program elements will depend upon the results of the ongoing studies and a holistic approach to watershed management.

5. Other elements of the Urban Runoff management program included identification and elimination of IC/IDs and establishment of adequate legal authority to control Pollutants in Urban Runoff discharges. The Permittees have completed a survey of their MS4 to identify IC/IDs and have adopted appropriate ordinances to establish legal authority. Some of the more specific achievements during the second and third term MS4 Permits are as follows:

   a. During the second term MS4 Permit, the Permittees operated under an Implementation Agreement that sets forth the responsibilities of the Permittees as defined in the 1996 MS4 Permit. The Permittees update this agreement during each MS4 Permit term. The Permittees have adopted Storm Water Ordinances regarding the management of Urban Runoff. The Storm Water Ordinances provide the Permittees with the legal authority to implement the requirements of the MS4 Permit and the key regulatory requirements contained in 40 CFR Section 122.26(d)(2)(I)(A-F).

   b. Revised DAMP: Includes 28 Construction Site and 36 Municipal and Industrial Source Control BMPs that are to be implemented by the Permittees for purposes of controlling Pollutants associated with Urban Runoff to the MEP. The Permittees also strengthened enforcement and compliance elements of the DAMP. Enhanced the Construction Site

inspections, the Industrial and Commercial Facility inspections, New Development review requirements, and the Permittee facilities and activities program.

c. Cooperated in the establishment of TMDL Task Forces and workgroups for Lake Elsinore, Canyon Lake and the MSAR.

d. Assisted in development and implementation of the TMDLs for Canyon Lake, Lake Elsinore and the MSAR.

e. Developed and updated methods to track program effectiveness such as resident surveys, tracking hotline inquiries, and web counters.

f. In August 1999 the RCFC&WCD and the County's Environmental Health Department executed an agreement that provides the framework for an area-wide Commercial and Industrial Compliance Assistance Program (CAP).

g. The Permittees have participated in the CMP.

h. The Permittees administered area-wide programs including: Hazardous Materials emergency response, household hazardous waste collection, industrial/commercial CAP and public education and outreach. Some of these programs were coordinated with Caltrans and local agencies.

i. A Municipal Facilities Strategy was established then later incorporated into the DAMP, the Supplement "A" New Development Guidelines were amended to require compliance with the Riverside County WQMP for specific categories of New Development and Significant Redevelopment projects.

j. The Riverside County WQMP was developed in 2004. The Model WQMP is a post-construction planning tool to address Urban Runoff from New Development and Significant Redevelopment. The WQMP is implemented on a watershed-specific level, and provides guidance for project specific post-construction BMPs to address the quantity and quality of Urban Runoff from New Development and Significant Redevelopment projects. Any New Development or Significant Redevelopment project that requires discretionary approval must submit a project-specific WQMP to the appropriate Permittee. The project-specific WQMP ensures that management of Urban Runoff to protect Receiving Water quality is considered a priority during project design and operation.

k. Established the Management Steering Committee that brings together the city managers in the Permit Area promoting consensus and communication on a regional basis.

l. Formation of sub-committees to guide and develop specific program elements (Construction Activities, Industrial/Commercial Activities, New Development/ Significant Redevelopment, Public Education, Permittee Facilities & Activities, Monitoring, & Finance).

m. Evaluated and revised ordinances, regulations, rules, and codes to ensure appropriate level of legal authority.

n. A Technical Advisory Committee for overall program development and implementation was established.

o. Program Review: A number of existing programs were reviewed to determine their effectiveness in combating Urban Runoff Pollution and to recommend alternatives and or improvements, including Permittee activities and facilities, IC/IDs to the MS4 systems, and existing monitoring programs.

p. Enhanced Public Education program through development of new outreach materials and programs.

q. Public Education: A number of steps were taken to educate the public, businesses, industries, and commercial establishments regarding their role in implementing Urban Runoff Pollution controls. The Industrial Facility dischargers were notified of the Urban Runoff regulatory requirements. For a number of unregulated activities, BMP guidance documents were developed and a toll free hotline was established for reporting any suspected water quality problems.

r. The Permittee's website hosted by RCFC&WCD, including the "Only Rain Down the Storm Drain" public information page, was developed and is continually enhanced. It contains resources for residential facilities, businesses, developers and contractors. The website is accessible from the RCFC&WCD home page. The website offers free brochures that all web site visitors can print in quantities or can order including:

  i. *After the Storm* – a citizen's guide to understanding MS4 Pollution in your neighborhood or when performing daily activities.

  ii. *Automotive Maintenance & Car Care* – guidelines for keeping your auto shop or retail fuel facility in environmental shape.

  iii. *Outdoor Cleaning Activities* – guideline for outdoor cleaning activities and wastewater disposal.

  iv. *Pools, Spas and Fountains* –Environmental maintenance suggestions for pool, spa, and fountain owners.

  v. *What's the Scoop* – tips for a healthy pet and a healthier environment.

  vi. *Household Hazardous Waste (HHW)* – A schedule of collection locations for proper disposal of HHW.

  vii. *Storm Water Pollution Found in Your Neighborhood* – door hanger.

s. In addition to the information provided on the Only Rain Down the Storm Drain website, the Public Education and Outreach Program has:

i. Tested and/or implemented several new Public Education and Outreach Program effectiveness tracking mechanisms including call tracking, web counters, testing, and surveys.

ii. Conducted a review of the efficacy of Permittee employee training programs.

iii. Enhanced the toll free storm water Pollution reporting hot line to include public education information and support for the public and other interested stakeholders.

iv. Enhanced on-line registration access for NPDES training to help facilitate training of appropriate Permittee employees.

v. Worked with the Riverside-Corona Resource Conservation District to develop home garden workshops and presentations to elementary and middle schools and staff to raise public awareness of Urban Runoff management issues and Source Control BMPs and to encourage volunteers, partners, and groups to gather annually for a trash and debris clean-up day along the Santa Ana River.

vi. Developed special newspaper and billing inserts, fliers and advertisements to raise public awareness of Urban Runoff management issues and Source Control BMPs. A radio advertising campaign was also developed and implemented for a limited time.

vii. Developed and presented workshops regarding household hazardous waste use and proper disposal at major home improvement stores throughout Riverside County.

viii. Placed numerous advertisements in the Penny Saver and Bargain Bulletin to raise public awareness of Urban Runoff management.

ix. In cooperation with certain County Service Areas and other programs, pet waste signs with bag dispensers have been installed at various parks to help encourage the proper disposal of animal waste.

x. Coordinated with County-wide Animal Control Facilities, as well as city-owned animal control facilities and Humane Societies, to distribute specific materials to the County Agricultural inspectors as well as Regional Board inspectors for use during facility inspections.

xi. Distributed educational and outreach materials to the County Agricultural inspectors as well as Santa Ana Regional Board staff inspectors for use during facility inspections.

xii. Cooperated with the Western Riverside Council of Government (WRCOG) in the Used Oil Block Cycle Grant that decreases the amount of illegally dumped motor oil by promoting the addition of new Certified Oil Collection Centers.

xiii. Participated in WRCOG's "Cleanest County in the West" program to address issues relating to litter and illegal dumping which targeted both students and adults.

xiv. Supplemental Environmental Projects: As a result of an environmental enforcement case settlement brought by the County Department of Environmental Health, Conoco Phillips and Downs Energy developed two posters and a billboard, respectively. These items were designed to increase the awareness of appropriate BMPs for retail fuel businesses.

t. Permittee Training: Training was provided to Permittee employees to implement New Development Guidelines and Public Works BMPs. The fourth-term MS4 Permit specifies additional training requirements to focus on necessary competencies for storm water program managers, Permittee planners and inspection staff. This was added following information collected during Regional Board staff audits of Permittees' storm water management programs, which found that a number of the Permittees' staff and/or contractors were not adequately trained to properly implement the required program elements contained within the third term MS4 Permit and/or training programs were not properly documented.

u. Related Activities: Modified MS4s by channel stabilization and creation of sediment basins; eliminated or permitted and documented Illicit Connections to the MS4s.

v. Pursued and received Proposition 50 Planning Grant to develop an Integrated Regional Watershed Management Plan for the San Jacinto watershed and to facilitate implementation of the Canyon Lake/Lake Elsinore Nutrient TMDL.

w. Pursued and received two Proposition 40 Integrated Regional Watershed Management Plan implementation grants to facilitate the MSAR TMDL and LE/CL TMDLs.

x. Co-Permittees developed and maintain an inventory database (or databases) of Construction Sites 1-acre or larger for which they have issued a building or grading permit. For each Construction Site/project included in a Co-Permittee's inventory, the Co-Permittees have assigned a priority of "high," "medium," or "low" to reflect the Construction Site's potential for Impairing Receiving Water quality.

y. Created databases for the Commercial and Industrial Facilities within each jurisdiction.

z. Developed a GIS Web Browser to assist developers and Permittees in identifying pertinent water quality information for proposed New Development projects.

aa. Developed Planning Application forms for Permittee use to ensure that the need for a project-specific WQMP was properly identified for New Development and Significant Redevelopment projects early in the planning process.

bb. Developed a FAQ and watershed Impairment maps to assist Permittees and developers with preparing and reviewing project-specific WQMPs.

cc. Enhanced online watershed maps to assist developers and the public with identifying areas tributary to Impaired Waterbodies.

dd. Developed a BMP design handbook to standardize BMP selection and design in Riverside County.

ee. Initiated development of an enhanced BMP Design Handbook to provide additional guidance for LID and post-construction BMP design.

ff. Participation in the Storm Water Monitoring Coalition (SMC) efforts to evaluate LID options and establish guidance for BMP implementation for Southern California areas.

gg. Participation in SCCWRP's Hydromodification studies to develop scientifically based design guidance for Southern California.

hh. Initiated cooperative program with County Environmental Health to promote environmental enhancement projects in lieu of fines for violations of environmental laws. This initiative resulted in the billboard advertising campaign to promote appropriate BMPs for gas stations and garages.

ii. Prepared a one-year evaluation of litter management BMPs. This evaluation assessed the relative efficiency and cost effectiveness of Anthropogenic litter management BMPs including: street sweeping, catch basin cleaning, deployment of trash receptacles, public education, and MS4 maintenance. As a result, a Litter Removal Inspection Form was developed that assisted the Permittees in identifying and prioritizing areas with litter problems. The Permittees augmented the litter management programs including employee/contractor training, Industrial and Commercial Facility inspections, recycling programs including bulk-item collection, participation in watershed clean-up efforts, and illegal dumping retrieval.

jj. The RCFC&WCD coordinated GIS-based maps for Permittee MS4 facilities. The MS4 maps are updated annually with new information provided by the Permittees as part of the Annual Reporting process. The GIS layers are also now available on the RCFC&WCD's website through an internet GIS browser.

kk. Updated Model Facilities Pollution Prevention Plan for Permittee facilities not requiring coverage under the General Permit for Storm Water Discharges Associated with Industrial Activities (General Industrial Permit).

ll. The Permittees completed a MS4 assessment in 2004 to identify opportunities for incorporation of regional BMP retrofits within the limits of existing infrastructure.

mm. Pursued a Proposition 13 Grant, through the Santa Ana Watershed Project Authority, to develop a LID BMP Demonstration and Testing Facility. RCFC&WCD has continued to develop this project and plans to start construction this winter despite the current freeze on new grant projects.

B. PRIOR TERM PERMITS - WATER QUALITY IMPROVEMENTS

An accurate and quantifiable measurement of the impact of the above stated Urban Runoff management programs is difficult, due to a variety of reasons, such as the variability in chemical water quality data, the incremental nature of BMP implementation, lack of baseline monitoring data, and the existence of some of the programs and policies prior to initiation of formal Urban Runoff management programs. There are generally two accepted methodologies for assessing water quality improvements: (1) conventional monitoring such as chemical-specific water quality monitoring; and (2) non-conventional monitoring, such as monitoring of the amount of HHW collected and disposed off at appropriate disposal sites, the amount of used oil collected, and the amount of Anthropogenic debris removed from the MS4, etc.

The Permittees' water quality monitoring data submitted to date document a number of exceedances of Basin Plan Water Quality Objectives for various Urban Runoff-related Pollutants; the most notable among these excceedances was fecal coliform bacteria. Where these exceedances have resulted in the development of TMDLs for the MSAR, this Order requires the Permittees named in the TMDL: to comply with the WLAs for Bacterial Indicators consistent with the Implementation Plan requirements defined in the MSAR Bacterial Indicator TMDL.

During the prior MS4 Permit terms, there was an increased focus on watershed management initiatives and coordination among the MS4 permittees in Orange, Riverside and San Bernardino Counties. These efforts resulted in a number of regional monitoring programs and other coordinated program and policy developments. The Principal Permittee continues to be an active participant in the SWQSTF, the Canyon Lake/Lake Elsinore nutrient TMDL, the MSAR Bacterial Indicator TMDL, and the SMC studies. In addition to the TMDL implementation and monitoring activities, the Permittees participate in the Regional Integrated Freshwater Bioassessment Monitoring Program, the BMP Effectiveness Project assessing the effectiveness of LID techniques. Riverside and San Bernardino MS4 Programs are also coordinating on the development of several outreach programs.

It is anticipated that with continued implementation of the revised DAMP, the programs proposed in the ROWD incorporated into this Order and other

requirements specified in this Order, the goals and objectives of the storm water regulations will be met, including protection of the Beneficial Uses of all Receiving Waters.

VII. FUTURE DIRECTION/2007 ROWD

A. Recognizing the significant resources utilized in developing the 2002 MS4 Permit and the significant commitment the Permittees are making to address water quality Impairments, including those identified in the 2006 303(d) List as high priority for establishment of TMDLs, the Permittees proposed in the 2007 ROWD to maintain the fundamental structure and content of the 2002 MS4 Permit and the 2005 DAMP with modifications to reflect:

1. Removed descriptions of studies that have been completed;
2. Updated references to related orders by the Regional Board and State Board;
3. Adoption of TMDL requirements;
4. Evolution of compliance programs;
5. Further standardization and definition of terms;
6. Consolidation of similar compliance requirements [training requirements, reporting requirements, IC/ID requirements] to simplify the Order, increase readability and prevent the need for duplicative language;
7. Deletion of requirements in the 2002 MS4 Permit that described the development of compliance program elements which were incorporated into the 2005 DAMP;
8. Development of LIPs by the Permittees during the fourth term Order;
9. Addition of Permittee coverage under the Small Linear Underground Projects (State Board Order No. 2003-0007-DWQ, NPDES No. CAS000005) and Utility Vaults (State Board Order No. 2006-0008-DWQ, NPDES No. CAG990002) General Permits;
10. Recognition that the Municipal Facilities Strategy and Enforcement Compliance Strategies have been incorporated into the DAMP; and
11. Regional Board staff comments received by the Permittees during the third term permit, including comments received during the January 22, 2007 ROWD kick-off meeting regarding topics such as LID, Hydromodification, LIPs, etc.

B. In addition, the 2007 ROWD proposed continuing with the 2005 DAMP with some revisions. Based on an effectiveness assessment analysis, the following significant changes were incorporated into the Permittees 2007 draft DAMP compliance programs:

1. The Permittees proposed to complete preparation of LIPs within 12 months of Order adoption. The Permittees propose to develop LIPs that will:
   a. Specify how each program element of the DAMP shall be implemented;
   b. Describe the ordinances, plans, policies, procedures, and tools (e.g., checklists, forms, educational materials, etc.) used to execute the DAMP;
   c. Identify the organizational units responsible for implementation of each program element;
   d. Establish internal reporting requirements to ensure and promote accountability; and
   e. Describe an adaptive method of evaluation and assessment of program effectiveness for the purpose of identifying program improvements.

2. The final report "BMP Siting Study for the Santa Ana Permit Area" was released in May 2005. The sites identified in this study are likely to be further evaluated for opportunities to implement Regional BMPs necessary to comply with existing and future TMDLs.

3. Proposed revisions to the 2002 MS4 Permit provisions to reflect the unified IC/ID reporting procedures currently contained within the DAMP for simplicity and clarity.

C. Regional Board Approach to Consolidation of Overlapping NPDES Permit Requirements

1. During the third term MS4 Permit, the Permittees reviewed the applicability of the General Permit-Small Linear Underground Projects (State Board Order No. 2003-0007-DWQ, NPDES No. CAS000005), the General Permit-De Minimus Discharges (Order No. R8-2003-0061 as amended by Order Nos. R8-2005-0041 and R8-2006-0004), and the General Permit-Utility Vaults (Order No. 2006-0008-DWQ, NPDES No. CAG990002) to their activities such as hydrant flushing, maintenance on potable water supply system(s), construction dewatering, and the short-term and intermittent discharges from the de-watering of utility vaults and underground structures. Since the DAMP incorporates BMPs for the activities covered by these general permits, the Permittees recommended separate coverage under the Small Linear Underground Projects, De Minimus Discharges, or Utility Vaults General Permits was not necessary. This Order now includes coverage for De Minimus discharges from Permittee-owned facilities and activities specifically excluded from coverage under the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality, NPDES NO. CAG998001, Order No. R8-2009-0003. Permittees shall continue to obtain separate coverage for activities covered

by the Small Linear Underground Projects and Utility Vaults General Permits, unless these permits are incorporated into the General Construction Permit.

2. Specific identification of the types of discharges that must have coverage under the General De Minimus Permit and the General Construction Permit, is included in Section 5 of the 2007 DAMP. This Order requires the Permittees to include a description of those de minimus discharges into the Permittees' LIP, including a Regional Board notification process.
3. Prioritized inspections and monitoring based on sampling and monitoring results and other metrics to help target activities that present the highest risk to water quality.

D. During the fourth term Order, the following revisions to the Public Education and Outreach Program will be priorities:

1. Continue coordination of public education outreach with adjacent MS4s.
2. Continue to evaluate and enhance outreach materials for IC/IDs, nutrients, fertilizers, and pesticides.
3. Continue to focus the Public Education and Outreach Program on the Pollutants causing the greatest impacts to water quality, determined by the monitoring results and the list of Impaired Waterbodies [303(d) list].

The Permittees have already taken several steps in this direction. For example, the Permittees have provided spray bottles with environmentally friendly pesticide recipes printed on the side to residents at community fairs; the Permittees have developed or are in the process of developing brochures for septic system management, landscape management, and gardening; the Riverside and San Bernardino County Permittees are coordinating on a Curiosity Quest Episode (KVCR Family Show) to promote BMPs for nutrients, fertilizers and pesticides and the Permittees place information in hardware and gardening stores regarding pesticide and fertilizer management. The Permittees also incorporate other materials to address general Pollutants of Concern.

E. As a result of continued program effectiveness assessment the Permittees propose to update Annual Reporting forms to incorporate specific reporting requirements for all effectiveness assessment metrics.

F. Enhanced online watershed maps to assist developers and the public with identifying areas tributary to Impaired Waterbodies.

G. WQMP

1. The Permittees committed to maintain the "Frequently Asked Questions" information sheet for New Development and Significant Redevelopment projects to assist with the development and implementation of the revised WQMP.

2. The Permittees committed to update the Riverside County Storm Water Quality Best Management Practice Design Handbook to (1) better incorporate LID design concepts, (2) incorporate guidance to describe how developments can offset Hydromodification impacts with LID and (3) incorporate additional design guidance to ensure maintainability and functionality of BMPs, throughout the life of the development. This Order further requires the Permittees to revise the WQMP consistent with the requirements of the Order.
3. The Permittees committed to maintain the WQMP template to assist developers with developing a project-specific WQMP.
4. An audit of each of the Permittees' Urban Runoff management programs during the third term MS4 Permit indicated no clear nexus between the watershed protection principles, including LID techniques, specified in the WQMP and the Permittees' General Plan or related documents such as Development Standards, Zoning Codes, Conditions of Approval, Project Development Guidance, etc.. It appears that many of the existing procedures, Development Standards, Ordinances and Municipal Codes may be barriers to implement LID BMPs. This Order requires the Permittees to facilitate LID techniques specified in this Order.

H. The Regional Board has proposed a revised Notice of Intent and Notice of Termination for Permittee construction projects to assist Regional Board staff with identifying locations and owners of Permittee projects.

I. The Permittees have committed to annual updates to Sanitary Sewer Overflow Procedures to ensure proper contact information for Permittee and outside agencies.

J. WATERSHED APPROACH

1. TMDL for Bacterial Indicator in the MSAR subwatershed and nutrients in the Canyon Lake and Lake Elsinore subwatershed are incorporated into this Order (See Section V.C). The Permittees support TMDL implementation and agreed to participate in a comprehensive water quality monitoring program to ensure that Urban Runoff meets the Water Quality Objectives identified in the Basin Plan and are consistent with the WLAs specified in the TMDLs. This Order requires that, consistent with the requirements of the respective TMDL Implementation Plans, the Permittees use the water quality monitoring of Urban Runoff to evaluate the effectiveness of the BMP programs.

2. The USEPA has recommended a shift to watershed-based NPDES permitting[8] and watershed approach[9] to CWA programs, including NPDES programs. The Permittees and the Regional Board also recognize that a watershed-based approach is expected to be effective in controlling Pollutants in Urban Runoff. Consistent with this approach, this Order requires the Permittees to develop and implement programs that integrate Hydromodification and water quality management strategies with land use planning policies, ordinances, and plans within each jurisdiction. A *watershed approach* considers the diverse Pollutant sources and stressors and watershed goals within a defined geographic area (i.e., watershed boundaries). A watershed approach has three basic components:

   a. *Geographic Focus*: Watersheds are nature's boundaries. They are the land areas that drain to surface waterbodies, and they generally include lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape. Groundwater recharge areas are also considered.

   b. *Sound Management Techniques Based on Strong Science and Data*: Sound scientific data, tools, and techniques are critical to evaluate the process. Actions taken include characterizing priority watershed water quality problems and solutions, developing and implementing action plans, and evaluating their effectiveness within the watershed.

   c. *Partnerships/Stakeholder Involvement*: Watersheds transcend political, social, and economic boundaries. Therefore, it is important to involve all the affected interests in designing and implementing goals for the watershed. Watershed teams may include representatives from all levels of government, public interest groups, industry, academic institutions, private landowners, concerned citizens, and others.

There are two major sub-watersheds in Riverside County within the Permit Area – the MSAR subwatershed, consisting of the portions of the Permit Area that drain to Reaches 3 and 4 of the Santa Ana River, and the San Jacinto River sub-watershed, which consists of the portions of the Permit Area that drain to Lake Elsinore. The Permittees participate in the MSAR TMDL Task Force and the Lake Elsinore and Canyon Lake TMDL Task Forces, which are stakeholder driven, watershed-based efforts to address Pollutants of Concern in the respective sub-watersheds. The Permittees have also implemented several stakeholder driven, watershed-based conservation programs such as the Special Area Management

[8] USEPA: Watershed-based NPDES permitting is a process that emphasizes addressing all stressors within a hydrologically-defined drainage basin, rather than addressing individual Pollutant sources on a discharge-by-discharge basis.

[9] USEPA (1996a): "The watershed approach is a coordinating framework for environmental management that focuses public and private sector efforts to address the highest priority problems within hydrologically defined geographic areas, taking into consideration both ground and surface water flow."

Plan, the Western Riverside County Multiple Species Conservation Plan, the San Jacinto River Integrated Watershed Management Plan and the Santa Ana Watershed Project Authority One Water One Watershed Plan.

These efforts are also addressed and discussed in the DAMP, which integrates these efforts into a coherent and uniform compliance program to protect Receiving Waters. Due to economies of scale and the fact that many of the Permittees have jurisdiction in both sub-watersheds, the Permittees have opted to continue to implement uniform MS4 Permit compliance programs across the entire Permit Area (for example Permittee training programs educate inspectors about the impacts and sources of pathogens and nutrients as opposed to offering separate sub-watershed specific training programs for the San Jacinto and MSAR sub-watersheds). The Permittees have indicated that as source assessments and monitoring data results from the aforementioned watershed efforts produce findings regarding potential urban sources of Pollutants of Concern that they may opt, in the future, to develop specific action plans for the MSAR and San Jacinto River sub-watersheds, or potentially even tributaries there-of. If so, the DAMP will be appropriately modified to clarify the sub-watershed specific components.

The Permittees also currently implement interim Hydromodification criteria and have committed to revising their Hydromodification management programs based on studies currently being conducted by the SCCWRP. This Order requires the Permittees to continue to pursue these watershed planning efforts and enhance them as appropriate to address Pollutants of Concern.

J. To promote program transparency, each Permittee proposed to develop its own LIP that:

   a. Specifies how each program element of the DAMP shall be implemented;

   b. Describes the ordinances, plans, policies, procedures, and tools (e.g., checklists, forms, educational materials, etc.) used to execute the DAMP;

   c. Identifies the organizational units responsible for implementation of each program element;

   d. Establishes internal reporting requirements to ensure and promote accountability; and

   e. Describes an adaptive method of evaluation and assessment of program effectiveness for the purpose of identifying program improvements.

K. The audits conducted by Regional Board staff have also shown a significant deficiency in measuring program effectiveness. This Order requires quantifiable measures for evaluating program effectiveness.

L. The above-mentioned strategies for the fourth-term Order build upon and continue the programs and policies developed by the Permittees during the prior MS4 Permit terms as described in Sections VI and VII above.

M. A combination of these programs and policies and the requirements specified in this Order should ensure control of Pollutants in Urban Runoff from the MS4 owned and/or controlled by the Permittees.

VIII. ORDER REQUIREMENTS AND PROVISIONS

The legislative history of storm water statutes (1987 CWA Amendments), USEPA regulations (40CFR Parts 122, 123, and 124), and clarifications issued by the State Board (State Board Orders No. WQ 91-03 and WQ 92-04) indicate that a non-traditional NPDES permitting strategy was anticipated for regulating Urban Runoff. Due to the economic and technical infeasibility of full-scale end-of-pipe treatments and the complexity of Urban Runoff quality and quantity, MS4 permits generally include narrative requirements for the implementation of BMPs in place of Numeric Effluent Limits.

The requirements included in this Order are meant to specify those management practices, control techniques and system design and engineering methods that will result in protection of the Beneficial Uses of the Receiving Waters consistent with the MEP standard. State Board (Orders No. WQ 98-01 and WQ 99-05) concluded that MS4s must meet the technology-based MEP standard and Water Quality Standards. The U.S. Court of Appeals for the Ninth Circuit subsequently held that strict compliance with Water Quality Standards in MS4 permits is at the discretion of the local permitting agency.

The ROWD included a discussion of the current status of Riverside County's Urban Runoff management program and the proposed programs and policies for the next five years (fourth-term Order). This Order incorporates these documents and specifies performance commitments for specific elements of the Permittees Urban Runoff management program.

This Order recognizes the significant progress made by the Permittees during the first three MS4 Permit terms in implementing the storm water regulations. This Order also recognizes regional and innovative solutions to such a complex problem, addresses deficiencies in the Permittees' Urban Runoff programs observed during the audits conducted by Regional Board staff, and considers comments by the USEPA on other draft MS4 Permits. This Order specifies quantifiable performance measures to determine compliance and assess the effectiveness of the Urban Runoff programs. This Order incorporates an integrated watershed approach in solving water quality and Hydromodification impacts resulting from urbanization and aims to promote LID techniques as a key element to mitigate impacts from New Development and Significant Redevelopment projects. The proposed Order also requires the Permittees

to implement TMDL WLA through iterative BMP programs as required in the respective approved TMDL Implementation Plans (See Section V.C). The goal of these programs and policies that are included in this Order is to achieve and maintain Water Quality Standards in the Receiving Waters.

The essential components of the Urban Runoff management program, as established by federal regulations [40 CFR 122.26(d)] are: (i) Adequate Legal Authority, (ii) Fiscal Resources, (iii) Storm Water Quality Management Program (SQMP) - (Public Information and Participation Program, Industrial/Commercial Facilities Program, Development Planning Program, Development Construction Program, Public Agency Activities Program, IC/IDs Elimination Program), and (iv) Monitoring and Reporting Program. The major sections of the requirements in this Order include: I. Facility Information, II. Findings, III. Permittee Responsibilities, IV. Local Implementation Plan, V. Discharge Prohibitions, VI. Effluent Limitations, Discharge Specifications and Other TMDL Related Requirements, VII. Receiving Water Limitations, VIII. Legal Authority/Enforcement, IX. Illicit Connections/Illegal Discharges; Litter, Debris and Trash Control, X. Sewage Spills, Infiltration into MS4 Systems from Leaking Sanitary Sewer Lines, Septic System Failures, and Portable Toilet Discharges, XI. Co-Permittee Inspection Programs, XII. New Development (including Significant Redevelopment), XIII. Public Education and Outreach, XIV. Permittee Facilities and Activities, XV. Training Program For Storm Water Managers, Planners, Inspectors And Municipal Contractors, XVI. Notification Requirements, XVII. Program Management/DAMP Review, XVIII. Fiscal Resources, XIX. Monitoring and Reporting Program, XX. Provisions, XXI Permit Modification, and XXII. Permit Expiration and Renewal.

These programs and policies are intended to improve Urban Runoff quality and protect the Beneficial Uses of Receiving Waters of the Permit Area.

A. RESPONSIBILITIES

The responsibilities of the Principal Permittee are to coordinate the overall Urban Runoff management program and the Co-Permittees are responsible for managing the Urban Runoff program within their jurisdictions as detailed in the ROWD and the proposed Order, Order No. R8-2010-0033.

The existing Implementation Agreement needs to be revised to include the cities that were not signatories to this Agreement. The Order requires that a copy of the signature page and any revisions to the Agreement be included in the specified Annual Report.

B. DISCHARGE PROHIBITIONS

In accordance with CWA Section 402(p)(3)(B)(ii), this Order prohibits the discharge of Non-storm Water to the MS4s, with a few exceptions. The specified exceptions are consistent with 40 CFR 122.26(d)(2)(iv)(B)(1). If the Permittees or the

Executive Officer determines that any of the exempted Non-storm Water discharges is a significant source of Pollutants, a separate NPDES permit or coverage under the Regional Board's De Minimus Permit will be required.

C. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS, INCLUDING WASTE LOAD ALLOCATIONS FOR DISCHARGES TO 303(d) LISTED WATERBODIES WITH ADOPTED TMDLS

The Order clarifies allowed discharges and those discharges (only from Permittee owned or operated facilities and activities) allowed only if certain discharge specifications are met, such as those covered under the De Minimus Permit. These discharges should be consistent with the Regional Board's General De Minimus Permit for Discharges to Surface Waters, Order No. R8-2009-0003, NPDES No. CAG 998001. Permittees' de minimus discharges covered under this Order include: 1) dewatering wastes from subterranean seepage, except for discharges from utility vaults; 2) discharges resulting from hydrostatic testing of vessels, pipelines, tanks, etc.; 3) discharges resulting from the maintenance of potable water supply pipelines, tanks, reservoirs, etc.; 4) discharges resulting from the disinfection of potable water supply pipelines, tanks, reservoirs, etc.; 5) discharges from potable water supply systems resulting from initial system startup, routine startup, sampling of influent flow, system failures, pressure releases, etc.; 6) discharges from fire hydrant testing or flushing; 7) air conditioning condensate; 8) swimming pool discharges; 9) discharges resulting from diverted stream flows; and 10) construction dewatering wastes. The DAMP and the LIP are required to be revised to incorporate information regarding Permittees' de minimus discharges.

This Order requires Permittees to implement established TMDL WLAs specified for Urban Runoff through an iterative BMP approach (see Section V.C above).

D. RECEIVING WATER LIMITATIONS

Receiving Water Limitations are included to ensure that discharges of Urban Runoff from MS4s do not cause or contribute to violations of applicable Water Quality Standards in Receiving Waters. The compliance strategy for Receiving Water Limitations is consistent with the USEPA and State Board guidance and recognizes the complexity of Urban Runoff management.

This Order requires the Permittees to meet Water Quality Standards in Receiving Waters in accordance with USEPA requirements, as specified in State Board Order No. WQ 99-05. If Water Quality Standards are not met through implementation of certain BMPs, the Permittees are required to re-evaluate the programs and policies and to propose additional BMPs. Compliance determination will be based on this iterative BMP implementation process.

E. LEGAL AUTHORITY/ENFORCEMENT

Each Permittee has adopted ordinances, municipal codes, and other regulations to establish legal authority to control discharges to the MS4s and to enforce these regulations as specified in 40 CFR 122.26(d)(2)(I)(B, C, E, and F). The Permittees are required to enforce these ordinances and to take enforcement actions against violators (40 CFR 122.26(d)(2)(iv)(A-D)).

The enforcement activities undertaken by a majority of the Permittees have consisted primarily of Notices of Violation, which act to educate the public on the environmental consequences of Illegal Discharges. In the case of the County, additional action has sometimes included recovery of investigation and clean-up costs from the responsible parties. In the event of egregious or repeated violations, the option exists for a referral to the County District Attorney for possible prosecution or to the Regional Board for enforcement under the California Water Code or the CWA. In order to eliminate unauthorized, Non-storm Water discharges, reduce the amount of Pollutants commingling with Urban Runoff and thereby protect water quality, an additional level of enforcement is required between Notices of Violation and District Attorney referrals.

The third term MS4 Permit required the Permittees to establish the authority and resources to administer either civil or criminal fines and/or penalties for violations of their Storm Water Ordinances. The Permittees now have this authority for penalties. Within the fourth term Order, Permittees are required to exercise this authority by developing an enforcement program to be administered within the industrial, commercial and construction elements of their Urban Runoff management programs. The enforcement program has been required to be included as an update to each Permittee's LIP. The effectiveness of this program must be documented in the Annual Reports submitted by the Permittees. However, it is acknowledged that once cases have been referred to the District Attorney or Environmental Crimes Task Force, etc. for prosecution, case details are confidential.

The fourth term Order further requires the Permittees to document and implement progressive and decisive enforcement actions, evaluate the effectiveness of their enforcement program and sanctions by tracking compliance and evaluating the amount of time to return to compliance.

This Order requires the Permittees to include in the LIP their legal authority and mechanisms to implement the various program elements required by this Order to properly manage, reduce, and mitigate potential Pollutant sources within each Permittee's jurisdiction. The LIP shall include citations of appropriate local ordinances, identification of departmental jurisdictions and key personnel in the implementation and enforcement of those ordinances. The LIP shall include

procedures, tools and timeframes for progressive enforcement actions and procedures for tracking compliance.

F. ILLICIT CONNECTIONS/ILLEGAL DISCHARGES; LITTER, DEBRIS AND TRASH CONTROL

Federal regulation, 40 CFR 122.26(d)(2(iv)(B), requires the Permittees to eliminate illicit discharges to the MS4s. The Permittees have completed a survey of the MS4 and eliminated or permitted all identified Illicit Connections. The Permittees have also established a program to address Illegal Discharges and a mechanism to respond to spills and leaks and other incidents of discharges to the MS4.

The Permittees currently have several programs to address IC/IDs:

1. The Permittees operate a toll free phone line, provide e-mail access for filing complaints and take direct calls regarding IC/ID reports from third parties. These reports are investigated by Permittee staff and reported in IC/ID investigation forms. All Permittee public education outreach materials promote the use of these reporting mechanisms.
2. Permittee staff receive training on identification and reporting of IC/IDs to appropriate Permittee staff. These reports are investigated and reported in IC/ID reporting forms.
3. The Permittees conduct Industrial and Commercial Facility and Construction Site inspections to identify potential IC/IDs. The outcomes of these inspections are reported in inspection reporting databases.
4. The Permittees contribute funds to the County Hazardous Materials Response Team to train and educate them to handle Illegal Discharges or accidental hazardous waste discharges so as to prevent IC/IDs. A summary of HAZMAT activities is provided in the Annual Reports.
5. The RCFC&WCD monitors Office of Emergency Service reports for potential IC/ID incidents and investigates them as appropriate. Results are reported in the RCFC&WCD complaint call database and reported to the Permittees as appropriate.
6. The RCFC&WCD has developed an online GIS tool that identifies the location of District and Permittee MS4 facilities to facilitate IC/ID investigations and response.
7. The Permittees have developed a Sanitary Sewer Overflow Procedure to limit the potential for sewage spills to the MS4.
8. RCFC&WCD, as Principal Permittee, has dedicated staff that conducts dry weather monitoring and also evaluates RCFC&WCD MS4 facilities for maintenance problems and/or IC/IDs. Detected IC/IDs from monitoring data or field inspections are reported to the District's NPDES section, logged into

RCFC&WCDs complaint database, and reported to the appropriate Permittee for follow up action.

However, with a few exceptions, program evaluations conducted during the third term MS4 Permit showed that this program element is primarily complaint driven or an incidental component of municipal inspections or MS4 inspections for a number of Permittees. This Order requires the Permittees to ensure their LIPs describe each Permittee's plan for focused, systematic IC/ID investigations, outfall reconnaissance surveys, indicator monitoring, and track their sources[10]. A proactive Illicit Discharge Detection and Elimination (IDDE) program should be integrated with other LIP program elements as appropriate including: mapping of the Permittees' MS4 to track sources, aerial photography, Permittee inspection programs for construction, industrial, commercial, MS4, Permittee facilities, etc., watershed monitoring, public education and outreach, Pollution Prevention, and rapid assessment of stream corridors to identify dry weather flows and illegal dumping.

G. SEWAGE SPILLS, INFILTRATION INTO MS4 SYSTEMS FROM LEAKING SANITARY SEWER LINES, SEPTIC SYSTEM FAILURES, AND PORTABLE TOILET DISCHARGES

Federal regulation, 40 CFR 122.26(d)(2)(iv)(B)(4), requires the Permittees to develop procedures to prevent, contain, and respond to spills that may discharge into the MS4s. The Permittees have already developed a program to address various types of spills to the MS4s. This Order requires the Permittees to continue to implement the unified sewer response plans in collaboration with the local sanitary sewer system operators. To facilitate swift response actions, the Permittees are required to provide 24-hour access to MS4s to the sanitary sewer system operators. The Permittees should also work cooperatively with the sanitary sewer system operators to determine if exfiltration from leaking sanitary sewer lines is causing or contributing to Urban Runoff Pollution problems. In addition, the Permittees are required to control infiltration or seepage from sanitary sewers to the MS4s through routine preventive maintenance of the MS4 (40 CFR 122.26(d)(2)(iv)(B)(7)). This Order also requires the Permittees to implement control measures and procedures to prevent, respond to, contain and clean up all sewage and other spills from sources such as portable toilets and septic systems.

On May 2, 2006, the State Board issued the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (SSO Order) to address proper management and operation of sewer collection systems and to control sanitary sewer overflows. It requires dischargers/enrollees to develop and implement a written Sewer System Management Plan (SSMP) approved by the discharger's governing board and

[10] Table 2: Land uses, Generating Sites and Activities that Produce Indirect Discharges from IDDE, A Guidance Manual for Program Development and Technical Assessments, October 2004 CWP.

report sewer spills through an on-line reporting system. This Order requires the Permittees have reviewed the unified sewage spill response plan developed during the third term MS4 Permit with the local sewering agencies and determined that it is consistent with the requirements of the SSO Order. This Order also requires each Permittee to include in its LIP the interagency or interdepartmental sewer spill response coordination and responsibilities.

The MS4 program audits indicated that a majority of the Permittees with septic systems have inadequate information with regard to the number and location of those systems within their jurisdiction. This Order requires the Permittees with septic systems to develop within 2 years of adoption of this Order, an inventory of septic systems within its jurisdiction and establish a program to ensure that failure rates are minimized.

H. CO-PERMITTEE INSPECTION PROGRAM;

Federal regulations, 40 CFR 122.26(d)(2)(iv)(A-D), require the Permittees to inventory, prioritize and inspect Industrial and Commercial Facilities and Construction Sites. This Order requires the Co-Permittees to continue inspections of Industrial and Commercial Facilities and Construction Sites within their jurisdiction in order to control the Pollutants entering the MS4. The Co-Permittees will continue to maintain the inventory of Industrial and Commercial Facilities and Construction Sites in the above categories, prioritize these facilities based on threat to water quality, and perform regular inspections to insure compliance with local ordinances. While initial observations of non-compliance may result in 'educational' type enforcement, repeated non-compliance will result in more disciplinary forms of enforcement, such as monetary penalties, stop work orders or permit revocation.

An evaluation of Permittee inspection programs during the third term MS4 permit indicated certain deficiencies in the Industrial and Commercial Facility and Construction Site inspection programs of some of the Permittees. In many instances, program documentation of progressive enforcement and facilities' return to compliance were not properly documented. This Order requires Permittees to document inspections and enforcement and evaluate the effectiveness of their inspection and enforcement program by tracking the time for facilities or sites to return to compliance. The Permittees who do not have an internet accessible database are required to initiate quarterly reporting and update of the inventory, inspection and enforcement database for facilities within their jurisdiction.

In order to address discharges to the MS4 from residential sources, the fourth term MS4 Permit requires the Permittees to develop and implement a residential program to prevent residential discharges from causing or contributing to a violation of Water Quality Standards in the Receiving Waters (40 CFR 122.26(d)(2)(iv)(A)).

I. NEW DEVELOPMENT (INCLUDING SIGNIFICANT REDEVELOPMENT)

Federal regulation, 40 CFR 122.26(d)(2)(iv)(A)(2), requires the Permittees to develop a comprehensive master plan to address discharges from New Development and Significant Redevelopment projects. During the third term MS4 Permit, the Permittees revised their New Development guidelines to address water quality and Hydromodification impacts resulting from urbanization. A WQMP for Urban Runoff was approved by the Regional Board in 2004 and became effective in 2005. This Order requires the Permittees to continue to work towards the goal of restoring and preserving the natural hydrologic cycles in proposed urban developments by reviewing and approving project-specific WQMPs to address post-construction impacts. The WQMP should be designed to address water quality impacts, including Hydrologic Conditions of Concern (HCOC), from New Development and Significant Redevelopment projects through: (1) Site Design BMPs, including LID techniques; (2) Source Control BMPs; and (3) Treatment Control BMPs. This Order recognizes the importance of LID techniques to minimize the impact of urbanization on water quality. This Order requires the project proponents to infiltrate, harvest and reuse, evapotranspirate, or bio-treat the volume of runoff from a 24-hour, 85th percentile storm event where feasible. The Order also provides alternatives and in-lieu programs for project sites where infiltration, harvesting and re-use, evapotranspiration and bio-treatment are not feasible.

Program evaluations conducted during the third term MS4 Permit indicated a need for establishing a clear nexus between the watershed protection principles (including LID) and the planning and approval processes of the Permittees. This Order requires the Permittees to review and revise their Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance, ordinances, and other related documents to identify and eliminate barriers to incorporate watershed protection principles.

The SMC, including project lead agency, the San Bernardino County Flood Control District, in collaboration with SMC member, SCCWRP and the California Storm Water Quality Association (CASQA), is developing a LID Manual for Southern California with funding from the State Board, CASQA and other sources. This manual will be incorporated into the CASQA BMP Handbooks. The Permittees are encouraged to utilize the manual as a resource for proper LID design and implementation techniques.

Program evaluations have also suggested a need for improvement in the Permittees' inspection, and tracking of post-construction BMPs. This Order requires the Permittees to revise their close-out procedures to include field

verification that Site Design, Source Control and Treatment Control BMPs are operational and consistent with the approved WQMP.

This Order incorporates new project categories and revised thresholds for several categories of New Development and Significant Redevelopment projects that trigger the requirement for a WQMP. New project categories include streets, roads and highways of 5,000 square feet or more of paved surface and retail gasoline outlets (RGOs) with 5,000 square feet or more with 100 or more average daily vehicle traffic. The threshold criteria that trigger the WQMP requirement for non-residential commercial/industrial construction projects have been reduced from 100,000 square feet to 10,000 square feet or more of impervious surface. The threshold for residential subdivision projects has also been revised from 10 units or more to a threshold of 10,000 square feet or more of impervious surface.

This Order incorporates new project categories and revised thresholds for several categories of New Development and Significant Redevelopment projects that trigger the requirement for a WQMP. The 2008 National Research Council (NRC) report[11] indicates that roads and parking lots constitute as much as 70% of total impervious cover in ultra-urban landscape, and as much as 80% of the directly connected impervious cover. Roads tend to capture and export more storm water Pollutants than other impervious covers. As such, roads are included as a priority development category for which WQMPs are required. The NRC report also indicates that there is a direct relationship between impervious cover and the biological condition of downstream receiving waters. The Permittees are required to address HCOC from New Development and Significant Redevelopment projects to minimize downstream impacts. Private New Development and Significant Redevelopment projects incorporating roads typically allow road runoff to be addressed as part of the overall water quality strategy for the larger common plans of development. Permittee streets, roads and highways capital projects have special limitations. For example, the footprint of street, road and highway capital projects is often limited and may have hydraulic constraints due to lack of underground storm drain systems that would otherwise be necessary to hydraulically facilitate treatment of runoff. There are also limitations specified in state and federal design and code specifications that may limit or prohibit BMPs. Permittees may also be subject to flow diversion liability and limited road maintenance budgets and equipment. Street, road and highway projects that function as part of the MS4 also receive runoff and associated Pollutants from both existing urban areas and other external sources, including adjacent land use activities, aerial deposition, brake pad and tire wear and other sources that may be outside the Co-Permittee's authority to regulate and/or economic or technological ability to control. These offsite flows can overwhelm Treatment Control BMPs designed to address the footprint (consistent with the typical requirements for a WQMP) of street, road or highway capital projects incorporating curb and gutter as part of its stormwater conveyance function. Despite these limitations, the Regional

[11] National Research Council Report (2008), http://www.nap.edu/catalog.php?record_id=12465

Board finds that Permittee construction of streets, roads and highway capital projects may provide an opportunity to address Pollutant loads from existing urban areas. However, due to the nature of the facilities and projects, it would be unduly burdensome for the Co-Permittees to maintain WQMP documents for transportation projects (in addition to Facility Pollution Prevention Plans and other overlapping requirements of this Order). The Permittees are therefore not required to prepare WQMP documents for street, road and highway capital projects, but instead are required to develop equivalent documents that include site specific consideration utilizing BMP guidance to address street, roads and highway capital project runoff to the MEP.

As public works, streets, roads and highway projects are the only facilities typically captured by the new WQMP category, and these projects typically have unique constraints that make them difficult to address through the WQMP process, a separate set of requirements has been established for addressing this category of development. Roads that are typically constructed as part of a development are typically incorporated into the broader WQMP for the development activity, providing more options for mitigation via the WQMP process.

Consistent with a long term holistic approach to address water quality and Hydromodification impacts resulting from urbanization, this Order requires Permittees to continue to develop tools that facilitate integration, to the extent practicable, of water quality, stream protection, storm water management and re-use strategies with land use planning policies, ordinances, and plans within each jurisdiction. These tools should address cumulative impacts of development on vulnerable streams, preserve or restore, consistent with the MEP standard, the structure and function of streams, and protect surface and groundwater quality. For 303(d) listed waterbodies with Urban Runoff Pollutant sources and without a TMDL, the Permittees are required to provide special protections such as requiring more effective post-construction BMPs focus training programs and develop targeted public outreach that would address the urban source of the Pollutant of Concern. The Permittees are also required to participate in the TMDL development and implementation.

J. PUBLIC EDUCATION AND OUTREACH;

Federal regulation, 40 CFR 122.26(d)(iv), requires the Permittees to develop a comprehensive storm water management plan with public participation and 40 CFR 122.26(d)(iv)(B)(6) requires the Permittees to engage in outreach activities to facilitate the proper management of Pollutants. Public outreach is an important element of the overall urban Pollution Prevention program. The Permittees have committed to implement a strategic and comprehensive public education program to maintain the integrity of the Receiving Waters and their ability to sustain Beneficial Uses. The Principal Permittee has taken the lead role in the outreach programs and has targeted various groups including businesses, industry, development, utilities, environmental groups, institutions, homeowners, school

children, and the general public. The Permittees have developed a number of educational materials, have established a storm water Pollution Prevention hotline, started an advertising and educational campaign, and distributed public education materials at a number of public events. The Permittees are required to continue these efforts and to expand public participation and education programs.

The Permittees have already developed BMP fact sheets to address sources from residential activities such as auto washing and maintenance activities; use and disposal of pesticides, herbicides, fertilizers and household cleaners; and collection and disposal of pet wastes.

This Order requires the Permittees to annually review their public education and outreach efforts and revise their activities, if necessary, to address public outreach needs fed back from other Urban Runoff program elements. Federal regulation, 40 CFR 122.26(d)(v), requires the Permittees to conduct a program assessment to determine the reduction in Pollutant loadings due to Urban Runoff management programs. Each Permittee is required to implement an assessment program, guided by the CASQA Guidance manual or equivalent alternative, to measure the change in behavior of its target communities to reduce discharge of Pollutants to the MS4 and the environment.

K. PERMITTEE FACILITIES AND ACTIVITIES;

Federal regulation, 40 CFR 122.26(d)(iv)(A), requires the Permittees to ensure that their activities and facilities do not cause or contribute to violations of Water Quality Standards in receiving waters. Education of Permittee planning, inspection, and maintenance staff is critical to ensure that Permittee facilities and activities do not cause or contribute to an exceedance of Receiving Water Quality Standards. The 2002 MS4 Permit also specified minimum requirements for street sweeping and inspection and maintenance of drainage facilities. The Permittees were also required to develop and distribute BMP fact sheets for various Permittee activities. Permittee as well as contract staff that perform Permittee activities were required to be properly trained. The second and third term MS4 Permits required the Permittees to prepare a Municipal Facilities Strategy (MFS) to ensure that Permittee facilities and activities do not contribute Pollutants to Receiving Waters. The MFS was incorporated into Section 5 of the DAMP during the third term MS4 Permit. Each year, by August 1st, the Permittees are required to review their activities and facilities to determine the need for revisions to Section 5 of the DAMP.

This Order continues and builds upon the requirement of the third term MS4 Permit by requiring Permittees to include structural post-construction BMP information for certain Permittee projects along with the Notice of Termination submitted to the Executive Officer upon completion of the construction activity. The Notice of Termination must include photographs of the completed project, a location map, and for public works projects subject to a WQMP, structural post-

construction BMP location, field verification report and identify long term operation and maintenance responsibility. Permittees are required to develop a database of post-construction BMPs for which the Permittees are responsible and shall reference this database in the LIP.

Program evaluations conducted during the third term MS4 Permit indicated varying degrees of compliance at Permittee facilities and activities. This Order requires each Permittee to inventory its fixed facilities, field operations and MS4 facilities to ensure that Permittee facilities do not cause or contribute to a Pollution or Nuisance in Receiving Waters. These facilities and field operations are to be prioritized for inspection according to threat to water quality.

Fixed Permittee facilities and field operations include, but are not limited to fire training facilities, corporate yards, maintenance and storage yards, animal shelters, water treatment facilities, swimming pools, warehouses, and hazardous materials storage facilities, and recreation facilities. The Permittees are required to include in their LIP procedures and schedules for inspections and maintenance of Permittee facilities and activities. Urban Runoff from other Permittee facilities, such as airports, wastewater treatment plants and landfills, is regulated under the General Industrial Permit.

L. PERMITTEE CONSTRUCTION PROJECTS

The third term MS4 Permit authorized the discharge of storm water from Construction Sites on one acre or more that are under ownership or direct responsibility of the Permittees. The Permittees were required to notify the Executive Officer prior to commencement of construction activities, and to comply with the substantive requirements of the latest Statewide General Construction Activities Storm Water Permit.

Program evaluations conducted during the third term MS4 Permit indicated that some of the Permittees were not submitting or were not aware of the requirement to submit a Notice of Intent and a Notice of Completion for Permittee construction projects.

M. TRAINING PROGRAM FOR STORM WATER MANAGERS, PLANNERS, INSPECTORS AND MUNICIPAL CONTRACTORS

Education of Permittee planning, inspection, and maintenance staff is important to ensure that land use decisions, local permit approvals and Permittee facilities and activities do not cause or contribute to an exceedance of Receiving Water Quality Standards. During the term of the 2002 MS4 Permit, the Permittees attended training classes specific to major Urban Runoff program elements including New Development/Significant Redevelopment, Construction Site and Industrial Facility inspections, and Permittee activities.

This Order requires the Permittees, in conjunction with a broader array of MS4 Programs or CASQA, to define the program implementation training needs for Urban Runoff program staff, including contractors, managers and inspectors. The training curriculum must be designed for Permittee facilities and field operations staff, Permittee inspection staff, Urban Runoff program managers and those involved in the review and approval of WQMPs and CEQA documents, including Permittee contractors. The audits of the Permittees indicated the need for better inter-departmental collaboration and communication in the local Urban Runoff program implementation. This Order requires LIPs to develop and document processes and procedures for coordination between planners, plan reviewers, engineers and inspectors to ensure that appropriate post-construction BMPs are approved, installed, and are operational.

N. NOTIFICATION REQUIREMENTS

Most of the notification requirements that were spread throughout the third term MS4 Permit were consolidated into one section.

O. PROGRAM MANAGEMENT ASSESSMENT/DAMP REVIEW

The DAMP is a management document that needs to be updated with the new requirements of this Order.

P. FISCAL RESOURCES

Each Permittee is expected to exercise its full authority to secure the resources necessary to meet all requirements of this Order. See Section IX for existing funding mechanisms and potential limitations to Permittee funding.

Q. MONITORING AND REPORTING REQUIREMENTS

During the first term MS4 Permit and part of the second term MS4 Permit, the Permittees conducted monitoring of the Urban Runoff flows, Receiving Water quality, and sediment quality. The Santa Ana Phase I NPDES Monitoring Program began in November 1991 with 27 monitoring sites. The program has been reduced in phases to more specifically address Urban Runoff program needs and to redirect monitoring resources to TMDL-related activities. There was a time where samples were collected on a rotational basis with no consistent monitoring from year to year. On April 14, 2003, with the submittal of an Interim Monitoring Program, monitoring at seven core sampling locations (Sampling Stations 040, 316, 318, 364, 702, 707, and 752) was established that provided representative and consistent monitoring results for the Permit Area.

The Riverside County monitoring programs, as well as other monitoring programs nationwide, have shown that there is a high degree of uncertainty in

the quality of Urban Runoff and that there are significant variations in the quality of Urban Runoff spatially and temporally. However, most of the monitoring programs to date have indicated that there are a number of Pollutants in Urban Runoff. A link between Pollutants in Urban Runoff and Beneficial Use Impairments has been established in a few studies.

This Order requires the Permittees identified as TMDL stakeholders in an approved TMDL to continue to comply with applicable TMDL Implementation Plan requirements, including monitoring requirements, and to implement Urban TMDL WLAs through an iterative BMP approach (see Section V.C above).

Wet and Dry Seasons are defined differently by the various monitoring programs included in this Order. The Middle Santa Ana TMDL defines the Wet Season as November 1 through March 31st and the Canyon Lake/Lake Elsinore TMDL monitoring defines it as October 1st through May 31st. The Monitoring and Reporting Program for this Order generally defines the Wet Season as October 1st through May 31st. Monitoring required under this Order is expected to be conducted consistent with the applicable seasonal definitions.

The MSAR Bacterial Indicator TMDL and Canyon Lake/Lake Elsinore Nutrient TMDL requires the Permittees to comply with TMDL Implementation Plan requirements to revise the DAMP to incorporate BMPs in the Permittees Urban Runoff programs. This Order requires the Permittees to evaluate the effectiveness of the BMPs implemented as part of the DAMP in conformance with the TMDL Implementation Plan requirements.

This MS4 monitoring program includes sampling Urban Runoff at a variety of sites located throughout the Permit Area for three storm events per year. Urban Runoff samples will be collected and analyzed for a variety of constituents. In addition to these efforts, the Permittees are reevaluating their overall Urban Runoff monitoring program to determine its effectiveness in meeting the following objectives:

1. Assess rates of mass loading
2. Assess influence of land use on water quality
3. Assess compliance with Water Quality Objectives
4. Assess effectiveness of water quality controls
5. Detect IC/IDs
6. Identify problem areas and/or trends
7. Identify Pollutants of Concern
8. Identify baseline conditions
9. Establish/maintain a water quality database

To accomplish these goals, the following activities are conducted:

1. Collect water quality data
2. Collect rainfall/runoff data
3. Establish quality assurance/control procedures
4. Conduct data analysis and archiving
5. Install and maintain appropriate equipment
6. Prepare an Annual Report

RCFC&WCD, in its role as Principal Permittee, participates in the SMC and other task forces. The goal of the SMC is to develop the technical information necessary to better understand storm water mechanisms and impacts, and then develop the tools that will effectively and efficiently improve storm water decision-making. Some of the cooperative monitoring efforts conducted through the SMC and other task forces include Comparative Evaluation of Microbial Source Tracking Techniques, Model Monitoring Program Guidance, Peak Flow Study, and Laboratory Inter-Calibration Studies. Under the auspices of the SMC, SCCWRP prepared "Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California", August 2004 Technical Report No. 419. This report noted, "...the lack of mass emissions stations in the inland counties hampers their ability to estimate the proportional contribution of these inland areas to cumulative loads downstream". The SMC consists of representatives from the Counties of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego and the Cities of Long Beach, and Los Angeles, the Los Angeles, Santa Ana and San Diego Regional Boards, the State Board, SCCWRP, Caltrans, and the USEPA. This Order requires the Permittees to continue mass emissions monitoring to determine Pollutant loading.

During the second and third term MS4 Permits, there was an increased focus on watershed management initiatives and coordination among the MS4 permittees in Orange, Riverside and San Bernardino Counties. The MS4 permittees participated in a number of regional monitoring programs and other coordinated program and policy developments, such as the Regional Integrated Freshwater Bioassessment Monitoring Program, and the BMP Effectiveness Assessment. The Principal Permittee continues to be an active participant in the SWQSTF, MSAR Bacterial Indicator TMDL, Canyon Lake/Lake Elsinore (San Jacinto) Nutrient TMDL and the SMC. This Order recommends that the Permittees continue their participation in these types of watershed coordination efforts and provides them with opportunities to use these efforts to comply with applicable requirements of the Permit.

The third term MS4 Permit required the Permittees to initiate bioassessment monitoring. To allow for a holistic approach, this Order requires the Permittees to participate in the Regional Integrated Freshwater Bioassessment Monitoring

Program in lieu of a separate bioassessment monitoring program for the Permit Area.

This Order requires the Permittees to re-evaluate their CMP and submit a revised plan for approval. The revised CMP should integrate the goals and objectives of the Watershed Action Plan and rectify data gaps from previous monitoring efforts.

R. PROVISIONS – Standard Language per NPDES regulations.

S. PERMIT MODIFICATION– Standard Language per NPDES regulations.

T. PERMIT EXPIRATION AND RENEWAL– Standard Language per NPDES regulations.

IX. WATER QUALITY BENEFITS, COST ANALYSIS, AND FISCAL ANALYSIS

There are direct and indirect benefits from clean lakes and beaches, clean water, and a clean environment. It is difficult to assign a dollar value to the benefits the public derives from fishable and swimmable waters. In 1972, at the start of the NPDES program, only 1/3 of the U.S. waters were swimmable and fishable. In 2008, more than 2/3 of the U.S. waters met these criteria. In the 1999 "*Money"* magazine survey of the "Best Places to Live", clean water and air ranked as two of the most important factors in choosing a place to live. Thus environmental quality has a definite link to property values.

The true magnitude of the Urban Runoff problem is still elusive and any cost estimate for cleaning up Urban Runoff would be premature short of end-of-pipe treatments. For Urban Runoff, end-of-pipe treatments are cost prohibitive and are not generally considered as a technologically feasible option. Over the last decade, the Permittees have attempted to define the problem and implemented BMPs to the MEP to combat the problem.

The costs incurred by the Permittees in implementing these programs and policies can be divided into three broad categories:

A. Shared costs: These are costs that fund activities performed mostly by the Principal Permittee under the Implementation Agreement. These activities include overall storm water program coordination; intergovernmental agreements; representation at the SWQSTF, Regional Board/State Board meetings and other public forums; preparation and submittal of compliance reports and other reports required under the NPDES permits, responding to Water Code Section 13267 requests, budget and other program documentation; coordination of consultant studies, Co-Permittee meetings, and training seminars.

B. Individual Costs for DAMP Implementation: These are costs incurred by each Permittee for implementing the BMPs (drainage facility inspections for Illicit Connections, drain inlet/catch basin stenciling, public education, etc.) included in the DAMP. A number of programs and policies for Non-Point and Urban Runoff Pollution controls existed prior to the MS4 permit program. However, the DAMP that was developed and implemented in response to the MS4 Permits required additional programs and policies for Urban Runoff Pollution control.

C. Individual Costs of Pre-Existing Programs: These are costs incurred by each Permittee for water Pollution control measures which were already in existence prior to the MS4 permit program. These programs included recycling, litter control, street sweeping, drainage facility maintenance, and emergency spill response.

Historically, the Permittees have employed four distinct funding methods to finance their NPDES Activities. Many Permittees utilize a combination of these funding sources. The different methods include:

A. Santa Ana Watershed Benefit Assessment Area

In 1991, the RCFC&WCD established the Santa Ana Watershed Benefit Assessment Area (SAWBAA) to fund its NPDES activities. Currently, SAWBAA revenues fund both area-wide NPDES program activities and the RCFC&WCD's individual MS4 permit compliance activities.

B. County Service Area 152

In December 1991, the County of Riverside formed County Service Area 152 (CSA 152) to provide funding for compliance activities associated with its NPDES permit activities. Under the laws that govern CSAs, sub-areas may be established within the overall CSA area with different assessment rates set within each sub-area. The cities of Corona, Moreno Valley, Norco, Riverside, Lake Elsinore and San Jacinto elected to participate in CSA 152.

C. Utility Charge

The City of Hemet funds a portion of its NPDES program activities through a utility charge.

D. General Fund /Other Revenues

Permittees also utilize general fund revenue to finance their NPDES activities. Several Permittees also report using general fund and other revenue sources (e.g., gas taxes, developer fees, etc.) to fund a portion of their Urban Runoff management activities.

The Annual Report provides the most recent budgets and expenditure projections available for the costs incurred by the Permittees in implementing these programs and policies. The following information, in parenthesis, on the current economic conditions was provided by the Permittees.

{Current Economic Conditions
The following information was provided by the Permittees and does not constitute a finding by the Regional Board:

Historically, the Permittees have employed several funding methods to finance their MS4 Permit compliance activities. Unfortunately, the mortgage crisis, collapse of the housing market and the economic recession has resulted in the cessation of virtually all development activity and has significantly reduced sales tax revenue in the Santa Ana Region. Property tax revenues have been reduced by the high level of foreclosure activity and reduced property values. Property tax revenues have been further reduced by homeowner requests for reassessments to reflect the reduced property values. The impact of these economic conditions on the Permittees in the Santa Ana Region has been particularly severe. As a result, funds typically provided by these funding methods has been severely reduced, and it is anticipated that this condition will continue for an indefinite period. The funding methods historically used and the effects of the economic situation on the availability of funds through these sources are summarized as follows:

- Santa Ana Watershed Benefit Assessment Area. In 1991, the District established the Santa Ana Watershed Benefit Assessment Area to fund its MS4 Permit compliance activities. Currently, the Benefit Assessment revenues fund the District's share of the area-wide MS4 Permit program activities and the District's individual compliance activities as a Permittee. Under the Benefit Assessment each parcel is taxed based on the impervious area of each parcel at a set rate established through Proposition 218. This rate has not been increased since 1991 and increases in revenues have resulted from increases in the number of contributing parcels resulting from New Development. In 2007/08 the Santa Ana Watershed Benefit Assessment generated approximately $2,030,000 in revenue. These revenues are used to fund the District's compliance activities and the bulk of the administrative costs associated with the District's duties as Principal Permittee.

  Outlook: The District expects at best to maintain, if not see temporary reductions in Benefit Assessment revenues due to the significant number of homes that are not paying property tax due to foreclosure. An increase in the established Benefit Assessment rate to compensate for these reductions would require approval of 2/3 of the voters or 50% of the property owners and is unlikely, especially in the current economic climate. An increase in the number of contributing parcels will not occur until the development industry recovers.

- General Fund/Other Revenues. The County and the Cities utilize general fund revenue to finance most of their MS4 Permit compliance activities. General fund revenue is generated by property tax, sales tax, and auto license taxes.

  Outlook: The Permittees expect a continued reduction in the funds available through General Fund/Other Revenues through at least FY 2010/2011. Historically, the Permittees have investigated other funding sources, including a phone survey conducted by LESJWA with support from the District and the County of Riverside to evaluate the possibility of passing a new assessment to fund water quality improvements benefiting Lake Elsinore. The results of the survey found insufficient voter support for water quality-related issues to move forward with a special election. The Permittees have also formed a finance committee which has met several times to obtain information about actions that they can take to maximize revenues and potential alternative funding sources. These efforts met with some success, particularly in relation to maximizing fees for service; however significant new funding sources were not identified or available to the Permittees even during the more favorable economic conditions experienced during the term of the 2002 Riverside County MS4 Permit.

- Fees. Several Permittees charge fees for services such as inspections, plan check and other recoverable costs related to compliance with the 2002 Riverside County MS4 Permit. These fees cover both the direct and indirect costs associated with conducting these inspections/reviews including associated compliance tracking and reporting.

  Outlook: It is notable that, with the virtual collapse of the development industry in the Santa Ana Region, the fees received by the Permittees for review of New Developments and Construction Site inspections have been significantly reduced. With this reduced level of fee-based income, maintenance of the existing inspection and plan review programs will place a burden on overall funding of the compliance programs. The Permittees do not expect revenues from fees to recover until the development industry recovers. Even with recovery of the development industry, it is anticipated that revenues from fees will be reduced for the majority of the Cities within the Santa Ana Region and the County due to the reduced area remaining for development in their jurisdictions.

- Grants. The Permittees have actively pursued and, as available, used grants to fund compliance programs.

  Outlook: In December the State's budget crisis resulted in a directive to State agencies from the Department of Finance to halt projects that rely on bond funds, including those funded by Proposition 40, Proposition 50 or Proposition 84. The State of California is the primary source of grant funding for water

quality projects. Future availability of funds to resume compliance projects funded by grants is uncertain.

It is clear that the current economic climate and that of the foreseeable future is creating a significant burden upon the Permittees that will make the continuance of all existing MS4 Permit compliance programs difficult. If new funding sources or alternative combinations of funding sources cannot be identified, it is likely that compliance program funding will be further impacted.

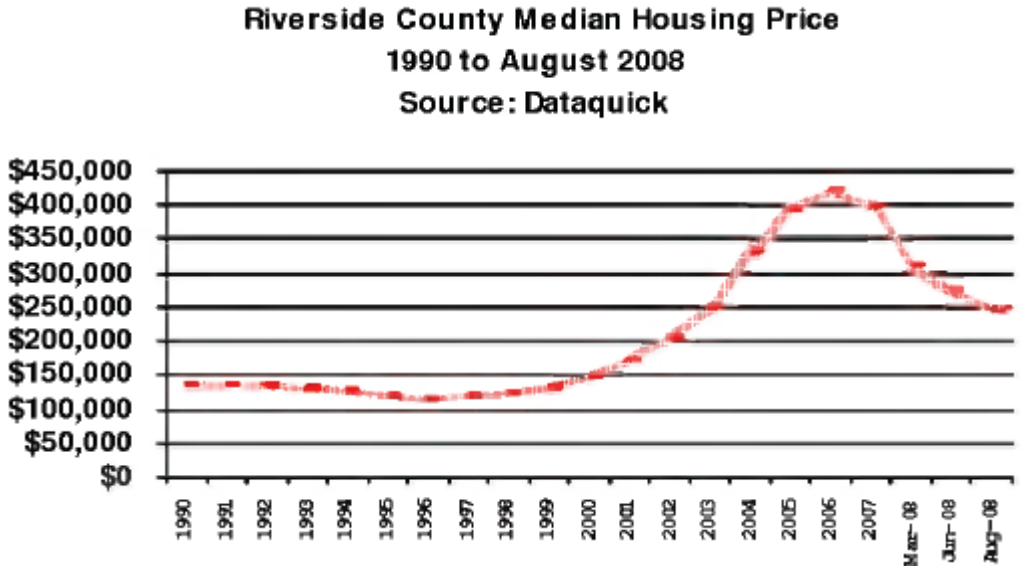
Economic Projections

According to Chicago Title, Southwest Riverside County has experienced a very significant increase in supply of single-family residential units on the market. As a result, housing price indicators are very negative. In the majority of the Southwest Riverside submarket, the pending price is less than closing price that suggests the weakness of the market. The October 2008 count of bank owned (REO) properties for Riverside County as a whole was 12,078. The number of foreclosures was 23,480. The presence of high levels of REO properties will continue to negatively affect the price line. In addition, the level of foreclosures is increasing. At the end of January 2009, 68% of the homes listed for sale are foreclosures or short sales[12].

With regard to other sectors of the economy, Riverside County has taken a serious turn for the worse in 2008, with projections indicating that the severe downturn will continue through 2009 at the very least. The economic difficulties being faced in the Southwest Riverside submarket is the result of the dramatic downturn in the housing market in this area, the national financial turmoil, the worldwide credit crisis, and the increasing consumer debt crisis. According to Beacon Economics, a respected economics consulting firm in Los Angeles, Inland Southern California is clearly at the epicenter of this economic turmoil, with extremely high rates of unemployment at present. Unemployment rates in Inland Southern California are expected to reach 12.4% (Riverside County beat that – unemployment was 14.6% in November 2009 – California Employment Development Department) before this deep recession is over. Housing prices are expected to continue their precipitous decline from their peak levels in the two Inland Southern California counties through at least 2011. According to Dataquick, median home prices in Riverside County peaked at $415,000 in January 2007. At the end of this cycle, the median home price in Riverside County is expected to be $198,000. Figure 1 depicts the median housing price in Riverside County over the period 1990 to August 2008.

[12] Orange County Register, January 27, 2009, p. 11.

Figure 1. Riverside County Median Housing Price (1990 – August 2008)

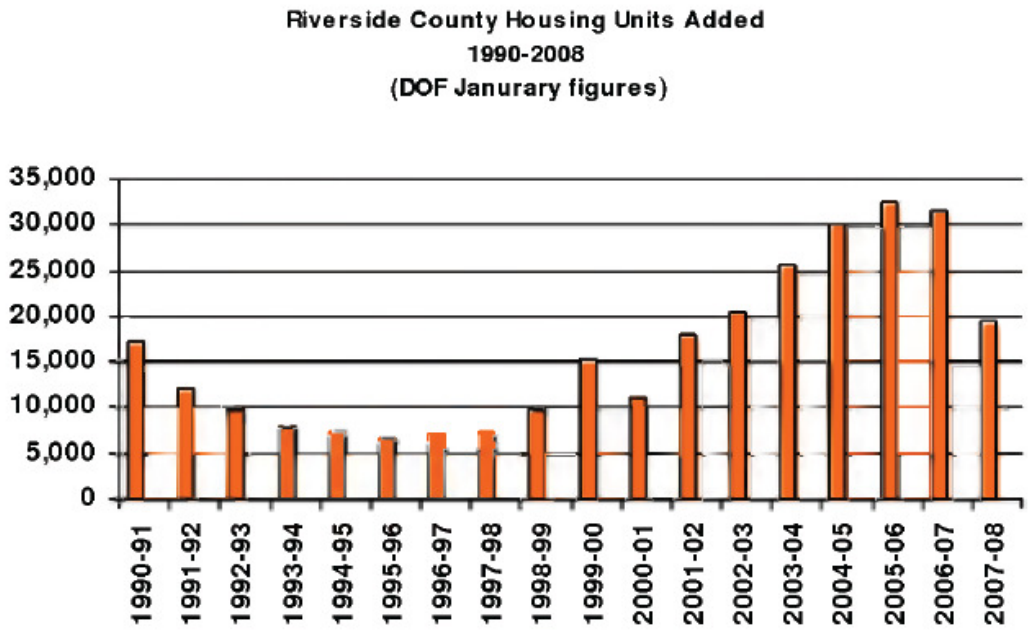


Source: Riverside County Center for Demographic Research. 2008. Riverside County Progress Report, pg 14.

Local Government sales tax revenues remained fairly stagnant through 2006 and began to decline in early 2007, according to Beacon. By the second quarter of 2008, the taxable sales in Riverside County declined by 7.7%. This will continue with taxable sales possibly bottoming out by 2010. These shocks are expected to continue and accelerate within the southwest Riverside County economy.

As a direct outcome of the current economy and the economic outlook into the term of the 2009 Riverside County MS4 Permit, the number of New Development proposals has plummeted and any significant rebound is not forecast. New and redevelopment projects will likely remain minimal. As shown in Figure 2, the number of housing units being added each year has dropped below the levels seen at any point in time during the 2002 Riverside County MS4 Permit. These numbers will likely continue to decrease for a significant portion of the new 2010 Riverside County MS4 Permit term.

Figure 2. Riverside County Housing Units Added (1990 – 2008)



Source: Riverside County Center for Demographic Research. 2008. Riverside County Progress Report, pg 12.

These economic issues and projections directly affect and limit both:

- The need for including enhanced New Development and Significant Redevelopment requirements in the 2010 Riverside County MS4 Permit, and

- The Permittees ability to fund, and even seek new funding sources for additional MS4 Permit requirements for New Development and Significant Redevelopment projects.

Permittee specific projections are as follows:

County of Riverside

The County is operating with a structural deficit of $12 million and plans a 25% budget reduction from FY 2008/2009 through FY 2011/2012. The County's current budget of $4.7 billion represents a 5% reduction from the previous year and next year's budget is expected to be cut by 10%. These cuts are directly associated with the decline in property values caused by the high number of foreclosures. There are concerns about having to use discretionary funds to meet State mental health and social service mandates. In addition, the County is dependent on funds from Federal and State sources. If during this time of economic crisis Federal and State funding sources are reduced or eliminated, any unfunded programs will be terminated. Only core County programs will continue.

The primary source of general fund revenue is from property taxes and sales tax. With the unprecedented number of foreclosures, reduced property values, and declining sales, general fund revenue is in a downward spiral. Another source of funding is through the Solid Waste Tipping Fees paid at the County landfills. Volume is down 15% since 2006 with anticipated downward trend to 40% reduction in solid waste through 2014. Programs that are partially funded through tipping fee allotments will be impacted. Due to the declining economy the recycling market has collapsed. Virtually no recyclable materials are being shipped for reprocessing. This loss of revenue and increased disposal costs is further impacting the general fund.

Cuts of 25% for all Net County Cost general fund programs will translate into reduction of County services and elimination of unfunded State and Federal programs. Only core value programs will be provided (including public safety and fee programs).

The County has instituted a hiring freeze and required each department to create a report outlining the projected effects of the budget cuts. The County currently employs over 20,000 people, and layoffs are expected to result from the findings of these departmental reports. It is anticipated that this will impact program delivery for stormwater related activities. No County department will be able to sustain current staffing levels as they try to meet the 25% budget reduction strategy.[13] [14]

City of Menifee

The newly incorporated City of Menifee FY 2008/2009 initial budget was estimated from their comprehensive fiscal analysis that was submitted to the Local Agency Formation Commission during the incorporation process. Because of the economic uncertainty, and the fact that the City is only now beginning to staff positions, it is unknown what the immediate impact of the fiscal crisis will be. The County is responsible for assisting the City in meeting its MS4 Permit compliance requirements during the first year of incorporation which expires October 1, 2009. Currently, the level of property tax revenue that will be available to the City is uncertain. Funding for MS4 Permit compliance requirements was not explicitly budgeted. A financial hardship currently exists because of the costs associated with incorporation.

City of Murrieta

The City of Murrieta's FY 2008/2009 budget did not increase compared to FY 2007/2008. The City has identified a $3.3 million budget shortfall for the current fiscal year ending on June 30, 2009. This represents approximately 8.2% of the City's projected revenue which must be absorbed in five months.

[13] "The Realities of Recession in California: A Statewide Report by U.S. Senator Barbara Boxer, December, 2008, p. 18.
[14] Riverside County Executive Office, January, 2008.

The shortfalls are primarily due to reduced sales tax and property tax revenues. Department heads are currently working on revised budgets to adjust for the loss in revenue.

Additional, budget cuts are anticipated for FY 2009/2010 because the immediate economic outlook is not good. There have been approximately 2,000 home foreclosures within the City. Sales tax revenue is estimated to drop 12.5%, property tax revenue will drop, and the State took approximately $525,000 out of redevelopment funds. Murrieta did not receive any vehicle licensing fees from the State and it appears likely that the State will take more revenue from the cities to solve its budget problems. New NPDES requirements that increase compliance costs will create a financial hardship for the City.

City of Riverside

The City of Riverside has seen declining general fund revenue over the last two fiscal years in virtually all categories. The City's most recent projection indicates that total general fund revenues for the current fiscal year will be under $200 million, down from a budget of $215 million as adopted, and $226.5 million in the prior fiscal year. This represents a decline over two fiscal years of approximately 12%. Specifically, property tax and sales tax revenue continue their decline, which is primarily attributable to decreased residential construction activity and in the case of sales tax declining automobile sales.

The decline in revenue has resulted in a corresponding reduction to general fund expenditures. Specifically, approximately 12% of the positions authorized for the general fund have been vacated and unfunded, either through transferring staff to other funds, attrition or limited layoffs of temporary and contract staff. Additionally, the level of service provided to the community in virtually all City departments has been reduced through funding reductions to items such as street maintenance, recreation programs and libraries, though great care has been taken to minimize the impact of cuts to the public. It is anticipated that in the near term the economic situation will not improve, and staff is preparing a budget for the upcoming fiscal year that anticipates further decreases in revenue.

City of Wildomar

The newly incorporated City of Wildomar FY 2008/2009 initial budget was estimated from their comprehensive fiscal analysis that was submitted to the Local Agency Formation Commission during the incorporation process. Because of the economic uncertainty, and the fact that the City is only now beginning to staff positions, it is unknown what the immediate impact of the fiscal crisis will be. The County is responsible for assisting the City in meeting its MS4 Permit compliance requirements the first year of incorporation that expires July 1, 2009. Currently, the level of property tax revenue that will be

available to the City is uncertain. Funding for MS4 Permit compliance requirements was not explicitly budgeted. A financial hardship currently exists because of the costs associated with incorporation.}

X. ANTIDEGRADATION ANALYSIS

The Regional Board has considered whether a complete antidegradation analysis, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, is required for these Urban Runoff discharges. The Regional Board finds that the Pollutant loading rates to the Receiving Waters will be reduced with the implementation of the requirements in this Order. As a result, the quality of Urban Runoff discharges and Receiving Waters will be improved, thereby improving protection for the Beneficial Uses of Waters of the U.S.. Since this Order will not result in a lowering of water quality, a complete antidegradation analysis is not necessary, consistent with the federal and state antidegradation requirements.

XI. ANTI-BACKSLIDING

Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require Effluent Limitations in a reissued NPDES permit to be as stringent as those in the previous permit, with some exceptions where Effluent Limitations may be relaxed. All Effluent Limitations in this Order are at least as stringent as the Effluent Limitations in the 2002 Order.

XII. PUBLIC WORKSHOP AND PUBLIC HEARING

Regional Board conducted a public workshop regarding the proposed Order on August 3, 2009 at the City of Loma Linda, Council Chambers, 25541 Barton Road, Loma Linda, CA. Based on the comments received, a second draft was released for public review and comments on October 22, 2009. The third draft, issued on December 15, 2009, will be considered for adoption at a public hearing as follows:

Date and time:	January 29, 2010; meeting starts at 9:00 a.m.
Location:	City of Loma Linda, Council Chambers 25541 Barton Road Loma Linda, CA

A Notice of Public Hearing and Hearing Procedure is posted on the Regional Board's website indicated below. An agenda for the public hearing to consider adoption of the proposed Order will be posted on the Regional Board's website approximately 10 days prior to the meeting date at:

http://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/riverside_permit.shtml

This information may be also obtained by calling the Regional Board office at 951-782-4130.

The Regional Board recognizes the significance of Riverside County's Storm Water/Clean Water Protection Program and will conduct, participate, and/or assist with any workshop during the term of this Order to promote and discuss the requirements of this Order and the progress of the Urban Runoff management program. The details of the public workshops will be posted on the Regional Board's website indicated above. Persons wishing to be included in the mailing list for any of the items related to this permit may register their name, mailing address and phone number with the Regional Board office at the address given below.

XIII. PUBLIC HEARING

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements. A Notice of Public Hearing was published in the Legal Notices section of the Press Enterprise, a local newspaper, on November 13, 2009. The public hearing on this item is scheduled as indicated above in Section XI. Additional information regarding the public hearing will also be posted on the website indicated above. Further information regarding the conduct and nature of the public hearing concerning these waste discharge requirements may be obtained by writing or visiting the Santa Ana Regional Board office, 3737 Main Street, Suite 500, Riverside, CA 92501. This and other information are also available at the website at: www.waterboards.ca.gov/santaana.

XIV. INFORMATION AND COPYING

Persons wishing further information may write to the above address or call Keith Elliott at (951) 782-4925. Copies of the application, proposed waste discharge requirements, and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying by appointment scheduled between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday (excluding holidays, and furlough days).

XV. REGISTER OF INTERESTED PERSONS

Any person interested in a particular application or group for applications may leave his name, address and phone number as part of the file for an application. Copies of tentative waste discharge requirements will be available on the web for all interested parties to download.

E-mail registration:
http://www.waterboards.ca.gov/resources/email_subscriptions/reg8_subscribe.shtml

XVI. RECOMMENDATION

Staff recommendation is to adopt the tentative Order, Order No. R8-2010-0033, as presented.

APPENDIX 7

NOTICE OF INTENT AND NOTICE OF TERMINATION FOR DE-MINIMUS DISCHARGES

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION
NOTICE OF INTENT
TO COMPLY WITH THE TERMS AND CONDITIONS OF THE

☐ **Riverside County MS4 Permit**
ORDER NO. R8-2010-0033
NPDES NO. CAS 618033

☐ **San Bernardino County MS4 Permit**
ORDER NO.R8-2010-0036
NPDES NO. CAS618036

GENERAL WASTE DISCHARGE REQUIREMENTS FOR DISCHARGE TO SURFACE WATERS
THAT POSE INSIGNIFICANT (DE MINIMUS) THREAT TO WATER QUALITY

I. PERMITTEE (*Person/Agency Responsible for the Discharge*)
Agency/Company
Name:_____
Address/*Street* _____
City _____State _____ZIP_____ Contact Person: _____
Phone: (_____) _____; Email: _____

II. FACILITY
Name:_____
Address/Street _____
City _____State _____ZIP_____ Contact Person:_____
Phone: (_____) _____; Email: _____

a. Projected Flow Rate (gpd):_____,
b. Receiving Water (identify):_____

III. INDICATE EXISTING PERMIT NUMBER: (*if applicable*)
a. Individual Permit Order No. _____ NPDES No. _____
b. General Permit Order No. R8-2010-003-_____
c. Others (specify) _____

IV. CERTIFICATION:

I certify under penalty of law that I am an authorized representative of the permittee and that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the permittee will comply with the terms and conditions stipulated in Orders No. R8-2009-0003 and (R8-2010-0033 or R8-2010-0036, as applicable) including the monitoring and reporting program issued by the Executive Officer of the Regional Board.

Name: _____Title:_____
(type or print)

Signature: _____ Date: _____

Email: _____

Remarks: If changes to facility ownership and/or treatment processes were made after the issuance of the existing permit, please provide a description of such changes on another sheet and submit it with this Notice of Intent.

V. OTHER REQUIRED INFORMATION - FOR NEW DISCHARGERS AND FOR NEW DISCHARGES AND LOCATIONS NOT PREVIOUSLY REPORTED BY EXISTING DISCHARGERS.

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to:

a. A list of constituents and the discharge concentration of each constituent;

b. The estimated average and maximum daily flow rates at unit of gallons per day(gpd); the frequency and duration of the discharge and the date(s) when discharge will start;

c. The proposed discharge location(s) as latitude and longitude for each discharge point;

d. A description of the proposed treatment system (if appropriate);

e. The affected receiving water; the receiving water(s) shall be
   1) receiving storm drain/creek, and/or
   2) the ultimate receiving water, such as Santa Ana River, San Jacinto River, Lake Elsinore, Prado Park Lake, etc.;

f. A map showing the path from the point of initial discharge to the ultimate receiving water. Please try to limit your maps to size of 8.5" X 11".

g. A list of known or suspected leaking underground tanks and other facilities or operations that have, or may have impacted the quality of the underlying groundwater within 200 feet of the site property lines for projects with expected discharge flow rates of less than 100,000 gallons per day and within 500 feet of the site property lines for projects with expected discharge flow rates of greater than 100,000 gallons per day.

h. Any other information deemed necessary by the Executive Officer.

VI. OTHER

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your application, pursuant to Division 7, Section 13260 of the California Water Code.

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION
8	B	Anaheim Bay	80111000				
				Dieldrin (tissue)		402 Acres	2019
				This listing was made by USEPA.			
					Source Unknown		
				Nickel		402 Acres	2019
				This listing was made by USEPA.			
					Source Unknown		
				PCBs (Polychlorinated biphenyls) (tissue)		402 Acres	2019
				This listing was made by USEPA.			
					Source Unknown		
				Sediment Toxicity		402 Acres	2019
					Source Unknown		
8	C	Balboa Beach	80114000				
				DDT		1.8 Miles	2019
					Source Unknown		
				Dieldrin		1.8 Miles	2019
					Source Unknown		
				PCBs (Polychlorinated biphenyls)		1.8 Miles	2019
					Source Unknown		
8	L	Big Bear Lake	80171000				
				Copper		2865 Acres	2007
					Resource Extraction		
				Mercury		2865 Acres	2007
					Resource Extraction		
				Metals		2865 Acres	2007
					Resource Extraction		
				Noxious aquatic plants		2865 Acres	2006
					Construction/Land Development		
					Unknown point source		

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION
				Nutrients		2865 Acres	2006
					Construction/Land Development		
					Snow skiing activities		
				PCBs (Polychlorinated biphenyls)		2865 Acres	2019
					Source Unknown		
				Sedimentation/Siltation		2865 Acres	2006
					Construction/Land Development		
					Snow skiing activities		
					Unknown Nonpoint Source		
8	C	Bolsa Chica State Beach	80111000				
				Copper		2.6 Miles	2019
				This listing was made by USEPA.			
					Source Unknown		
				Nickel		2.6 Miles	2019
				This listing was made by USEPA.			
					Source Unknown		
8	R	Buck Gully Creek	80111000				
				Fecal Coliform		0.3 Miles	2019
				Listing is downstream of Pacific Coast Highway.			
					Source Unknown		
				Total Coliform		0.3 Miles	2019
				Listing is downstream of Pacific Coast Highway.			
					Source Unknown		
8	L	Canyon Lake (Railroad Canyon Reservoir)	80211000				
				Pathogens		453 Acres	2006
					Nonpoint Source		
8	R	Chino Creek Reach 1	80121000				
				Nutrients		7.8 Miles	2019
					Agriculture		
					Dairies		

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED		PROPOSED TMDL COMPLETION
8	L	Elsinore, Lake	80231000					
				PCBs (Polychlorinated biphenyls)		2431	Acres	2019
					Source Unknown			
				Unknown Toxicity		2431	Acres	2007
					Unknown Nonpoint Source			
8	L	Fulmor, Lake	80221000					
				Pathogens		4.2	Acres	2019
					Unknown Nonpoint Source			
8	R	Grout Creek	80171000					
				Metals		3.5	Miles	2007
					Unknown Nonpoint Source			
				Nutrients		3.5	Miles	2008
					Unknown Nonpoint Source			
8	C	Huntington Beach State Park	80111000					
				Enterococcus		5.8	Miles	2019
				Impaired 50 yards around drain at Magnolia St.				
					Source Unknown			
				Indicator bacteria		5.8	Miles	2019
				This listing was made by USEPA for 2006. This listing for indicator bacteria applies to the area of the beach at Brookhurst St.				
					Source Unknown			
				PCBs (Polychlorinated biphenyls)		5.8	Miles	2019
					Source Unknown			
8	B	Huntington Harbour	80111000					
				Chlordane		221	Acres	2019
					Source Unknown			
				Copper		221	Acres	2019
				This listing was made by USEPA.				
					Source Unknown			
				Lead		221	Acres	2019
					Source Unknown			

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED		PROPOSED TMDL COMPLETION
				Nickel		221	Acres	2019
				This listing was made by USEPA.				
					Source Unknown			
				Pathogens		221	Acres	2019
					Urban Runoff/Storm Sewers			
				PCBs (Polychlorinated biphenyls) (tissue)		221	Acres	2019
				This listing was made by USEPA.				
					Source Unknown			
				Sediment Toxicity		221	Acres	2019
					Source Unknown			
8	R	Knickerbocker Creek	80171000					
				Metals		2	Miles	2007
					Unknown Nonpoint Source			
				Pathogens		2	Miles	2005
				For 2006, pathogens was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.				
					Unknown Nonpoint Source			
8	R	Los Trancos Creek (Crystal Cove Creek)	80111000					
				Fecal Coliform		0.19	Miles	2019
				Listing is downstream of Pacific Coast Highway.				
					Source Unknown			
				Total Coliform		0.19	Miles	2019
				Listing is downstream of Pacific Coast Highway.				
					Source Unknown			
8	R	Lytle Creek	80141000					
				Pathogens		41	Miles	2019
					Unknown Nonpoint Source			
8	R	Mill Creek (Prado Area)	80121000					
				Nutrients		1.6	Miles	2019
					Agriculture			
					Dairies			

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION
				Total Suspended Solids (TSS)		1.6 Miles	2019
					Dairies		
8	R	Mill Creek Reach 1	80156000				
				Pathogens		12 Miles	2019
					Unknown Nonpoint Source		
8	R	Mill Creek Reach 2	80158000				
				Pathogens		12 Miles	2019
					Unknown Nonpoint Source		
8	R	Mountain Home Creek	80158000				
				Pathogens		3.7 Miles	2019
					Unknown Nonpoint Source		
8	R	Mountain Home Creek, East Fork	80158000				
				Pathogens		5.1 Miles	2019
					Unknown Nonpoint Source		
8	B	Newport Bay, Lower	80114000				
				Chlordane		767 Acres	2019
					Source Unknown		
				Copper		767 Acres	2007
					Source Unknown		
				DDT		767 Acres	2019
					Source Unknown		
				PCBs (Polychlorinated biphenyls)		767 Acres	2019
					Source Unknown		
				Sediment Toxicity		767 Acres	2019
					Source Unknown		

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION
8	E	Newport Bay, Upper (Ecological Reserve)	80111000	Chlordane	Source Unknown	653 Acres	2019
				Copper	Source Unknown	653 Acres	2007
				DDT	Source Unknown	653 Acres	2019
				Metals	Source Unknown	653 Acres	2019
				PCBs (Polychlorinated biphenyls)	Urban Runoff/Storm Sewers	653 Acres	2019
				Sediment Toxicity	Source Unknown	653 Acres	2019
8	R	Peters Canyon Channel	80111000	DDT	Source Unknown	3 Miles	2019
				Toxaphene	Source Unknown	3 Miles	2019
8	L	Prado Park Lake	80121000	Nutrients	Nonpoint Source	90 Acres	2019
8	R	Rathbone (Rathbun) Creek	80171000	Nutrients	Snow skiing activities Unknown Nonpoint Source	4.7 Miles	2008

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION
				Sedimentation/Siltation		4.7 Miles	2006
					Snow skiing activities		
					Unknown Nonpoint Source		
8	B	Rhine Channel	80114000				
				Copper		20 Acres	2019
					Source Unknown		
				Lead		20 Acres	2019
					Source Unknown		
				Mercury		20 Acres	2019
					Source Unknown		
				PCBs (Polychlorinated biphenyls)		20 Acres	2019
					Source Unknown		
				Sediment Toxicity		20 Acres	2019
					Source Unknown		
				Zinc		20 Acres	2019
					Source Unknown		
8	R	San Diego Creek Reach 1	80111000				
				Fecal Coliform		7.8 Miles	2019
					Urban Runoff/Storm Sewers		
					Other Urban Runoff		
				Selenium		7.8 Miles	2007
					Source Unknown		
				Toxaphene		7.8 Miles	2019
					Source Unknown		

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION
8	R	San Diego Creek Reach 2	80111000	Metals	Urban Runoff/Storm Sewers	6.3 Miles	2007
8	R	Santa Ana River, Reach 4	80127000	Pathogens	Nonpoint Source	14 Miles	2019
8	R	Santiago Creek, Reach 4	80112000	Salinity/TDS/Chlorides	Source Unknown	9.8 Miles	2019
8	C	Seal Beach	80111000	Enterococcus *Impaired 50 yards around drain at 1st Street.*	Source Unknown	0.53 Miles	2019
				PCBs (Polychlorinated biphenyls)	Source Unknown	0.53 Miles	2019
8	R	Silverado Creek	80112000	Pathogens	Unknown Nonpoint Source	11 Miles	2019
				Salinity/TDS/Chlorides	Unknown Nonpoint Source	11 Miles	2019
8	R	Summit Creek	80171000	Nutrients	Construction/Land Development	1.5 Miles	2008

2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION

ABBREVIATIONS

REGIONAL WATER QUALITY CONTROL BOARDS

1	North Coast
2	San Francisco Bay
3	Central Coast
4	Los Angeles
5	Central Valley
6	Lahontan
7	Colorado River Basin
8	Santa Ana
9	San Diego

WATER BODY TYPE

B =	Bays and Harbors
C =	Coastal Shorelines/Beaches
E =	Estuaries
L =	Lakes/Reserviors
R =	Rivers and Streams
S =	Saline Lakes
T =	Wetlands, Tidal
W=	Wetlands, Freshwater

CALWATER WATERSHED

"Calwater Watershed" is the State Water Resources Control Board hydrological subunit area or an even smaller area delineation.

GROUP A PESTICIDES OR CHEM A

aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (including lindane), endosulfan, and toxaphene

SOUTHERN CALIFORNIA EDISON

Geotechnical Investigation Report
Lakeview Substation

Nuevo, Riverside County, California

December 14, 2009
Project # 09-082

TDBU Civil/Structural & Geotechnical Engineering Group

December 14, 2009

Subject: **GEOTECHNICAL INVESTIGATION REPORT**
Lakeview Substation
Southwest of 10th Street and Reservoir Ave.
Nuevo
Riverside County, California
Project No. 09-082

Geotechnical Engineering Group TDBU has prepared this report to present the findings of the geotechnical investigation performed for the proposed Lakeview Substation located southwest of the intersection of 10th Street and Reservoir Avenue in Nuevo, Riverside County, California. The subject substation can be developed from a geotechnical standpoint to support the proposed structures, provided the findings, conclusions, and recommendations presented in this report are incorporated in the preparation of the final grading plan, foundation design, and construction of the project.

The recommendations contained herein are contingent upon adequate monitoring of the geotechnical aspects of the construction.

If you should have any questions, please feel free to contact the undersigned.

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APPENDICES

1.0 INTRODUCTION

This report presents the findings of the geotechnical investigation performed for the proposed Lakeview Substation located southwest of the intersection of 10th Street and Reservoir Avenue in Nuevo, Riverside County, California (see *Figure 1. Site Location Map).*

The purposes of this investigation were to determine the nature and engineering properties of the subsurface soils and to provide preliminary recommendations regarding general site-grading, foundation design and construction. The site plan is included in this report as *Figure 2. Approximate Boring Location Map.*

No site grading plan was available at the time this report was prepared. The site earthwork and design recommendations provided in this report should be considered preliminary. The final grading plan should be reviewed for compliance with the design recommendations.

2.0 PROJECT DESCRIPTION

2.1 Site Location Description

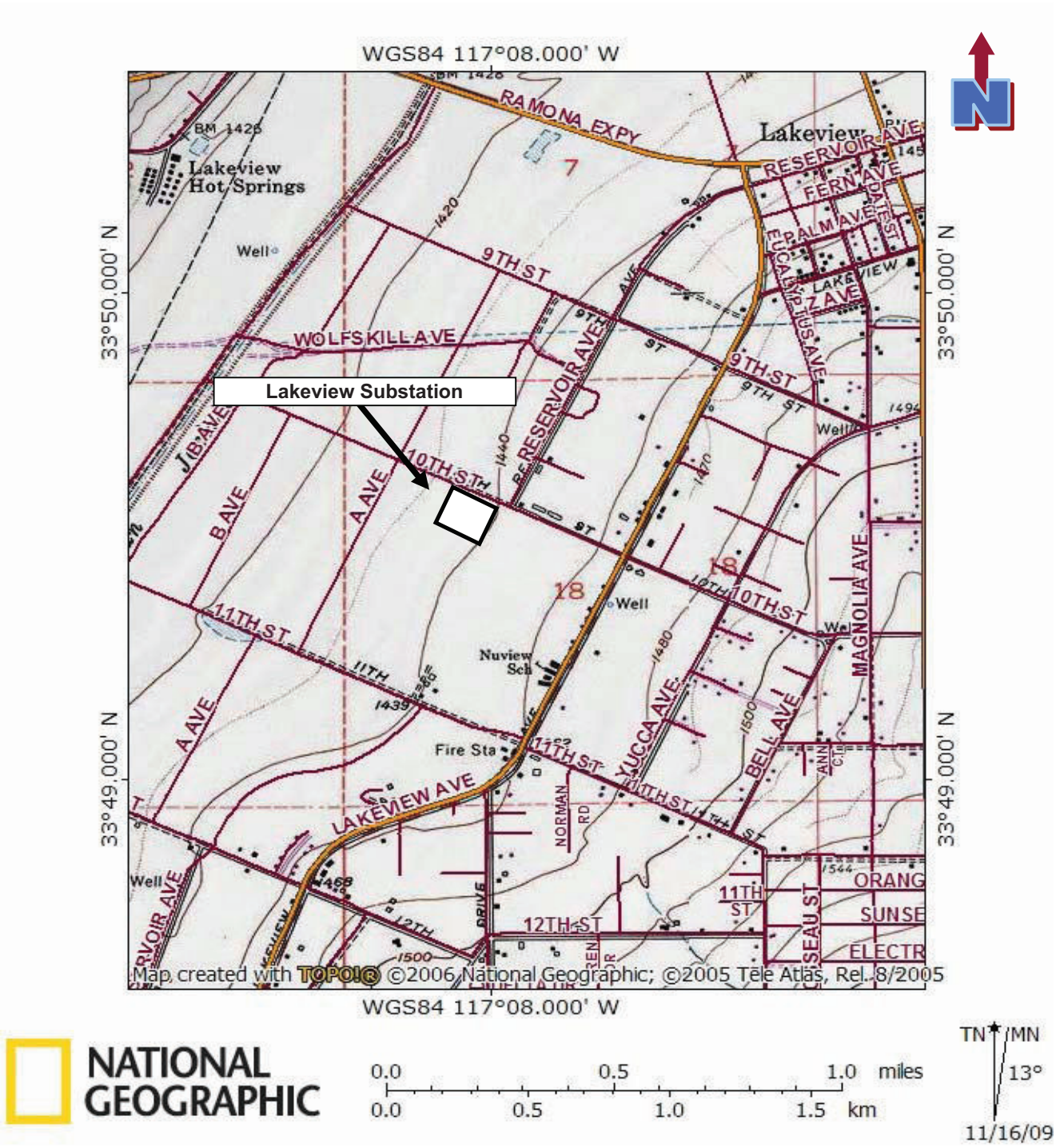
The proposed Lakeview Substation is a rectangular parcel measuring approximately 500 feet by 500 feet. The site comprises approximately 5 acres of flat farmland at an elevation of 1440 feet. The site drains to the northwest towards the San Jacinto River. A water well occurs near the northeast property corner outside the proposed substation. The water will is on a concrete pad covered by a steel plate and is not currently in use. The Perris Reservoir is approximately 2.75 miles northwest of the property and has a retained elevation of 1588 feet.

2.2 Proposed Development

The proposed Lakeview Substation is shown on *Figure 2, Approximately Boring Location Map*. The site is to be graded to accommodate the substation pad.

3.0 FIELD EXPLORATION & LABORATORY TESTING

The scope of the field investigation and the laboratory testing included a review of existing information, site reconnaissance and a subsurface exploration for geotechnical soil sampling.



Site Location Map

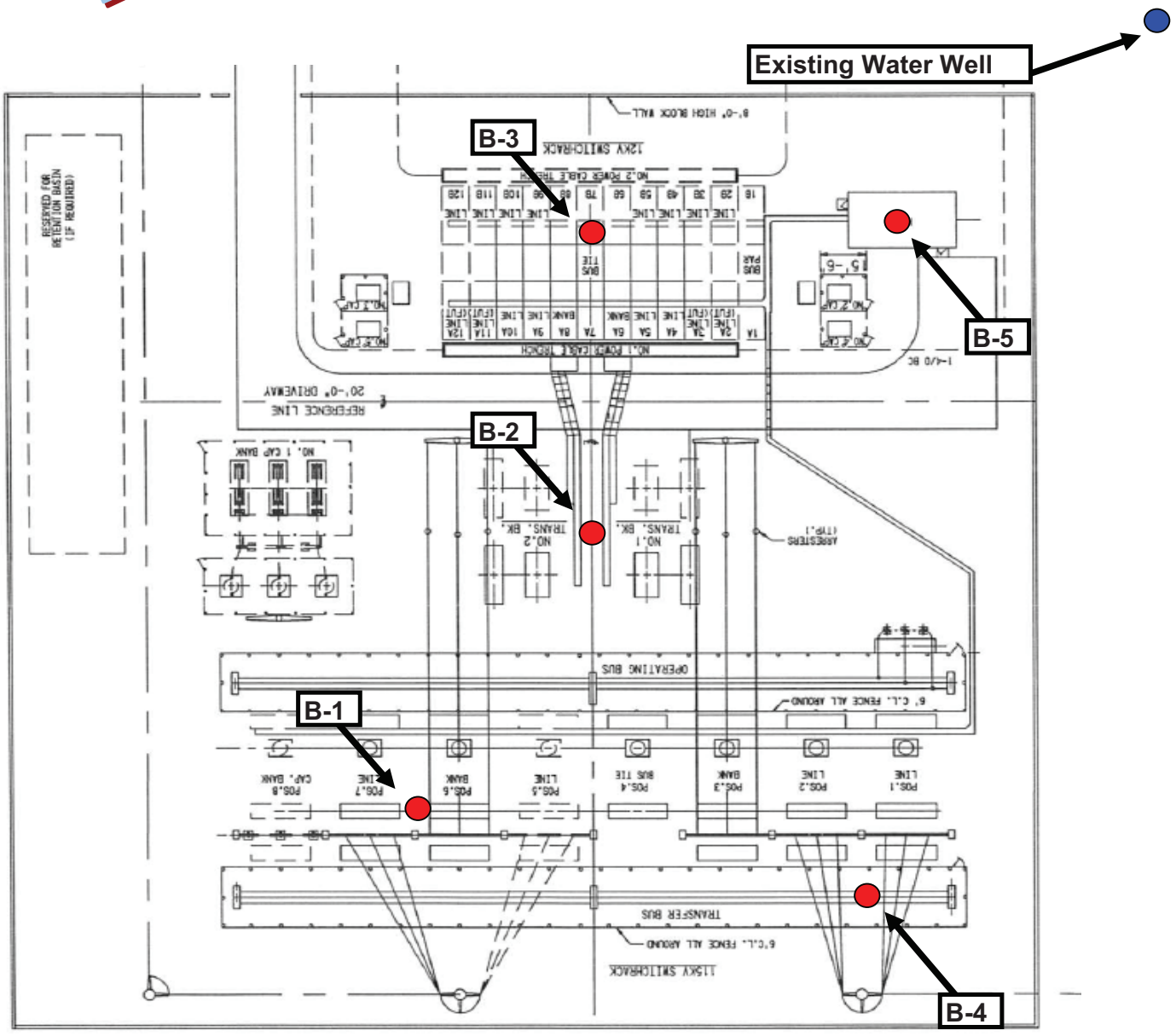
Project Name: Lakeview Substation

Source: NAT GEO

Location: Riverside, CA

TDBU Civil/Structural & Geotechnical Engineering Group

Figure No. 1



Approximate Boring Locations

Project Name: Lakeview Substation

Source: SCE drawing

Location: Riverside, CA

TDBU Civil/Structural & Geotechnical Engineering Group

Figure No. 2

3.1 Field Exploration

A total of five (5) soil borings were drilled on September 4, 2009. These borings were completed under the observation of a representative of Southern California Edison Geotechnical Engineering Group. The approximate soil boring locations are shown in *Figure 2, Approximate Boring Location Map*.

The borings (BH-1 to BH-5) were drilled within the project site using a truck mounted drill rig equipped with 8-inch diameter hollow-stem augers for soil sampling. The boring depths ranged from 25.5 to 51.5 feet below the existing ground surface (bgs).

Relatively undisturbed thin-walled ring and bulk samples of representative subsurface materials were obtained from the borings for laboratory testing. Standard Penetration Tests (SPTs) were performed starting at 7 feet bgs using a standard split-barrel sampler (1.4 inches inside diameter and 2.0 inches outside diameter).

Boring logs are presented in *Appendix A, Field Exploration* and laboratory test results are presented in *Appendix B, Laboratory Testing Program*.

3.2 Geotechnical Laboratory Testing

Representative samples of the site soils were tested in the laboratory to aid in the soil classification and to evaluate relevant engineering properties of the site soils. These tests included:

- *In situ moisture contents and dry densities (ASTM Standard D2216)*
- *Expansion Index (ASTM Standard D4829)*
- *Soil corrosivity tests (Caltrans 643, 422, 417, and 532)*
- *R-value (ASTM Standard D244, Caltrans 301G)*
- *Grain size distribution (ASTM Standard C136)*
- *Maximum dry density and optimum-moisture content relationship (ASTM Standard D1557)*
- *Direct shear (ASTM Standard D3080)*

For *in situ* moisture content, see the Logs of Borings in *Appendix A*, *Field Exploration*. For laboratory test results, see *Appendix B*, *Laboratory Testing Program.*

4.0 GEOLOGIC SETTING

The project site is in the central portion of the Peninsular Ranges geomorphic province. This province extends northwesterly from Baja California into the Los Angeles Basin. The province is bounded by the Transverse Ranges to the north and the Colorado

Desert to the east. The Peninsular Ranges province is characterized by northwest trending mountains and intervening basins parallel to the major faults and folds in the region. The northwest trending San Jacinto fault zone is approximately 3.5 miles to the northeast.

The site is within Quaternary alluvium of the San Jacinto River (Dibblee, 2003). These materials consist primarily of silty sand and sandy silt with some clay. Bedrock exposed in the hillsides adjacent to the San Jacinto river valley are comprised of quartz diorite.

Faults have not been mapped on or near the project and the site is not within a State of California Alquist-Priolo Earthquake Fault Zone (California Geologic Survey, 2007). The nearest designated Alquist-Priolo Earthquake Fault Zone is associated with the San Jacinto fault, approximately 7.9 kilometers northeast of the site.

5.0 SITE CONDITIONS

5.1 General

This section contains a general description of the subsurface conditions and various materials encountered at the site during the field exploration and a discussion of site-specific geology.

5.2 Subsurface Conditions

The subsurface conditions encountered at the site are discussed below. For additional information on the subsurface conditions, see *Appendix A*, *Field Exploration*. Based on the field observations and site exploration data, the site for the proposed substation is underlain by alluvial deposits consisting of mainly silty sand and sandy silt with some clay to the maximum depth explored of 51.5 feet bgs.

5.3 Groundwater

The site is within the Lakeview Basin of the West San Jacinto River watershed (Metropolitan Water District, 2007). Groundwater occurrence in the Lakeview Basin is within unconfined alluvium with depths greater than 1,000 feet. Producing intervals within the basin range from 300 feet to 1,000 feet. Based on the groundwater contour map for the basin, groundwater is approximately 160 feet below the ground surface. The groundwater gradient near the site is to the northeast.

Groundwater was not encountered in any of the borings drilled to the maximum depth of 51.5 feet bgs. Therefore, groundwater does not need to be considered for design and construction.

It should be noted that the groundwater level could vary depending upon the seasonal precipitation, agriculture irrigation and possible groundwater pumping activity in the site vicinity.

A water well occurs near the northeast corner of the substation property. The well is on a concrete pad covered with a steel plate. The well is not currently being used and is outside the footprint of the current substation. No well records were requested by our geotechnical team. It is our understanding that if there is not a need for the well, Corporate Real Estate (CRE) will take the lead in ensuring the well is properly abandoned and removed from the site (Contact Justin Larson at 714-895-0539).

5.4 Flooding

Based on a review of the Flood Insurance Rate Map (FIRM), the site is in Zone X – areas determined to be outside the 0.2% annual chance floodplain (FEMA, 2008). Based on a review of County of Riverside Flood Zones Maps, the site is not within an area requiring a flood plain review.

5.5 Geotechnical Laboratory Testing Results

Laboratory testing was performed to determine the physical characteristics and engineering properties of the subsurface soils. Results of *in situ* moisture and dry density tests are presented on the Logs of Borings in *Appendix A*, *Field Exploration,* and remaining test results are presented in *Appendix B*, *Laboratory Testing Program.* Discussion on the various test results is presented below:

- *In situ* Moisture and Dry Density – *In situ* dry density at the upper 5 feet ranged from 106 to 121 pcf with corresponding moisture content ranged from 9 to 14 percent, respectively.

- Expansion Index – A representative sample from the upper 5 feet of the site soils was tested to evaluate Expansion Index (EI) in accordance with the ASTM Standard D4829. The value of the measured EI within the upper 5 feet of site soils was 0. These values of EI indicate that the site soils have “Very Low” expansion potential.

- Soil Corrosivity – One representative sample of the site soils were tested to determine soil corrosivity with respect to common construction materials such as concrete and steel. Evaluation of soil corrosivity is presented in Section 8.6, Soil Corrosivity Evaluation.

- Gradation Analysis – Results of three (3) tests indicated the soils tested are silty sand (SM).

- Maximum Dry Density and Optimum Moisture Content – A typical moisture-density relationship of the representative surficial soils are presented in Table 1.

Table 1, Moisture-Density Relationship of Surficial Soil.

Sample Location	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
BH-1 @ 0'-5'	133.0	8.0
BH-2 @ 0'-5'	126.5	9.0
BH-3 @ 0'-5'	134.5	10.0
BH-4 @ 0'-5"	124.5	10.0

- Direct Shear – Eight (8) direct shear tests were performed on representative samples. Tests were performed on relatively undisturbed samples in soaked moisture conditions. Direct shear tests were performed on three ring samples collected at the same depth with a range of normal loads. Results of direct shear tests indicate the soil tested has moderate shear strength.

- R-value Test – An R-value test was performed on a representative bulk soil sample. Based on the test result, the R-value of near surface site soils is 47. This value indicates that the subgrade soil have moderate resistance to traffic loading.

6.0 FAULTING

Based on the available geologic data, the site is not in the Alquist-Priolo Earthquake Fault Zone. The potential for surface rupture at the site due to fault plane displacement propagating to the ground surface during the design life of the project is considered low. An active fault is defined as one that has had surface displacement within Holocene time (about the last 11,000 years). Table No. 2 presents a few major regional active faults near the site.

Table No. 2, Summary of Regional Faults

Fault Name and Section	Approximate Distance (kilometers)	Source Type (A, B, C)	Maximum Magnitude (M_w)	Slip Rate (mm/yr)
SAN JACINTO-SAN JACINTO VALLEY	7.9	B	6.9	12.0
SAN JACINTO-ANZA	22.2	A	7.2	12.0
SAN JACINTO-SAN BERNARDINO	23.3	B	6.7	12.0
ELSINORE-TEMECULA	28.4	B	6.8	5.0
ELSINORE-GLEN IVY	28.4	B	6.8	5.0
SAN ANDREAS - Southern	29.6	A	7.4	24.0
CHINO-CENTRAL AVE. (Elsinore)	40.1	B	6.7	1.0

Although the site could be subjected to strong ground shaking in the event of an earthquake, this hazard is common in Southern California and the effects of ground shaking on the structures can be mitigated by proper engineering design and construction in conformance with 2007 CBC, current building codes and engineering practices.

6.1 Seismic Coefficients

The project site is situated in a seismically active region. As is the case for most areas of Southern California, ground shaking may occur resulting from earthquakes associated with nearby and distant faults. During the life of the project, seismic activity associated with active faults in the area may generate moderate to strong ground shaking at the site.

The seismic site coefficients are determined in accordance with the 2007 California Building Code and ASCE 7-05 Standard (ASCE, 2005) using the United States Geological Survey (USGS, 2007) Earthquake Motion Parameters, Version 5.0.9, program. The site location used was Latitude 33.8259°N and Longitude 117.1339°W with a Site Class "D." The seismic site coefficients under the new code are presented in the following table:

Table 1613.5.2	Site Class Definitions	D
Maximum Considered Earthquake (MCE) Ground Motion		
Figure 1613.5	0.2 second Sort Period Spectral Response, S_s	1.500 g
Figure 1613.5	1 second Spectral Response, S_1	0.600 g
Table 1613.5.3(1)	Site Coefficient, F_a	1.00
Table 1613.5.3(2)	Site Coefficient, F_v	1.50
Design Earthquake Ground Motion		
Short Period Spectral Response, SD_S		1.000 g
1 second Spectral Response, SD_1		0.600 g

6.2 Secondary Effects of Seismic Activity

Secondary effects of seismic activity include surface fault rupture, soil liquefaction, differential settlement and ground lurching, lateral spreading, landslides, earthquake-induced flooding, and seiches. Site-specific potential for each of these seismic hazards is discussed in the following sections.

Surface Fault Rupture*:* The site is not located within a currently designated State of California Earthquake Fault Zone. Based on review of existing geologic information, no known active fault zone crosses the site. The potential for surface rupture resulting from the movement of the nearby major faults is unknown with certainty but is considered low.

Liquefaction: Liquefaction is defined as the phenomenon in which a soil mass due to the development of excess pore pressures, soil mass suffers a substantial reduction in its shear strength. During earthquakes, excess pore pressures may develop in saturated soil deposits as a result of induced cyclic shear stresses, resulting in liquefaction. Soil liquefaction occurs in submerged granular soils during or after strong ground shaking. Due to the absence of shallow groundwater, the project site is not considered susceptible to liquefaction.

Differential Settlement and Ground Lurching: The potential of significant differential settlement at the site during earthquakes is considered to be low. The potential for ground lurching during earthquakes cannot be quantified; however, the potential for the ground lurching is considered to be minimal, and should not be an issue for the project.

***Lateral Spreading*:** Seismically induced lateral spreading involves lateral movement of earth materials due to ground shaking. It differs from a slope failure in that ground failure involving a large movement does not occur due to the flatter slope of the initial ground surface. Lateral spreading is characterized by near-vertical cracks with predominantly horizontal movement of the soil mass involved over the liquefied soils towards and open face. The potential for lateral spreading at subject site is considered low.

Landslides: Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes. The site topography is relatively level and the absence of nearby slopes precludes any slope stability hazards. The potential for seismically induced landslides is considered low.

***Earthquake-Induced Flooding*:** This is flooding caused by failure of dams or other water-retaining structures as a result of earthquakes. The Perris Reservoir is approximately 2.75 miles northwest of the project site. The water elevation within the reservoir can be as high as 1588 feet, approximately 148 feet above the site. The site is not downstream from the dam, however. Should a dam failure occur, water flow would be to the southwest away from the site. Therefore, the potential of earthquake-induced flooding of the subject site is considered to be low.

Seiches: Seiches are large waves generated in enclosed bodies of water in response to ground shaking. The Perris Reservoir is approximately 2.75 miles northwest of the project site. The water elevation within the reservoir can be as high as 1588 feet, approximately 148 feet above the site. In the event of an earthquake, a seiche generated from this reservoir could overtop the retention basin, however, based on the distance from the reservoir and the occurrence of the San Jacinto River between the reservoir and the site, it is considered unlikely that a seiche would pose a hazard to the site.

7.0 EARTHWORK/SITE GRADING RECOMMENDATIONS

7.1 General

This section contains the general recommendations regarding earthwork and site grading for the proposed development. These recommendations are based on the results of the field exploration, laboratory testing, and data evaluation as presented in the preceding sections. These recommendations may need to be modified based on observation of the actual field conditions during grading.

Prior to the start of any earthwork, the site should be cleared of all vegetation and debris. The materials resulting from the clearing and grubbing operations should be removed from the site.

The final bottom surfaces of all excavations should be observed and approved by the project soils engineer prior to placing any fill and/or structures. Based on observations, removal of localized areas deeper than those documented may be required during grading. Some variations in the depth and lateral extent of over-excavation recommended in this report should be anticipated.

7.2 Over-excavation/Removal for Proposed Substation Structures

As a minimum, the upper two (2) to three (3) feet of surficial soils over the entire site should be overexcavated, moisture-conditioned, and compacted to at least 90 percent of the maximum dry density to produce a firm and unyielding surface.

- Continuous or isolated footings should be placed on at least 3.5 feet of compacted fill.
- Over-excavation should provide as a minimum of 3.5 feet of structural fill below the bottom of mat foundations and slab-on-grade.
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7.3 Over-Excavation/Removal for Pavement Areas

In areas receiving asphalt concrete or Portland cement concrete paving, including driveways, street areas, sidewalks, curbs and gutters and other flatwork, the upper two feet of native surficial soils should be excavated. Such over-excavation should extend at least two feet beyond the pavement edges. The pavement sections should be placed on at least one foot of non-expansive fill, moisture conditioned if necessary, and recompacted to at least 95 percent of the laboratory maximum dry density.

7.4 Structural Fill

The approved bottom of the excavations should be scarified to a depth of at least six inches. The scarified soils should be moisture conditioned to within three percent of optimum moisture content for granular soils and above optimum for fine-grained soils and compacted to at least 90 percent of the laboratory maximum dry density if not specified elsewhere in this report to produce a firm and unyielding surface.

All structural fill should be placed on competent, scarified and compacted native materials as determined by the project engineer and in accordance with the specifications presented in this section.

Excavated site soils, free of deleterious materials and rock particles larger than three inches in the largest dimension, should be suitable for placement as compacted fill except where non-expansive soils are specified. The import fill should be non-expansive (expansion potential less than 20). The imported materials should contain sufficient fines (binder material) so as to be relatively impermeable and result in a stable subgrade when compacted. Any import fill should be tested and approved by the project engineer.

Prior to compaction, fill materials should be thoroughly mixed and moisture conditioned where necessary, to within three percent of optimum moisture content for sandy soils and above optimum for fine-grained soils. All fill, if not specified otherwise elsewhere in this report, should be compacted to at least 90 percent of the laboratory maximum dry density in accordance with the ASTM Standard D1557 test method.

- The upper 3.5 feet of fill under structure foundations and at least four feet outside of foundation perimeter should be compacted to at least 95 percent of the laboratory maximum dry density.
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- All other fill should be compacted to at least 90 percent of the laboratory maximum dry density in accordance with the ASTM Standard D1557 test method.

At the time of the field investigation, in-situ moisture content of the upper five feet of native soils ranged from 9.0% to 14.0%. The optimum moisture contents range from 8.0% to 10.0%. Therefore, some moisture conditioning/drying may be necessary prior to the material being placed as compacted fill. The amount of processing required for proper moisture conditioning at the site will depend on the seasonal variations in the in-situ moisture conditions, the depth of over-excavation, the equipment, and the processing method.

7.5 Shrinkage and Subsidence

The shrinkage and/or bulkage would depend on, among other factors, the depth of cut and/or fill, and the grading method and equipment utilized. For preliminary estimation, shrinkage factors for various units of earth material at the site may be taken as presented below:

- In computing fill quantities, the approximate shrinkage factor for the upper five feet of alluvial soils is estimated to range from 2% to 7% when excavating and compacting the soils to 90% as recommended.
- Subsidence would depend on the construction methods including type of equipment utilized. For estimation purposes, ground subsidence may be taken as 0.10 feet.

Although these values are only approximate, they represent our best estimates of the factors to be used to calculate volume loss that may occur during grading. If more accurate shrinkage and subsidence factors are needed, it is recommended that field-testing using the actual equipment and grading techniques be conducted.

7.6 Excavations and Temporary Slopes

Where excavations are deeper than about 4 feet, the sides of the excavations should be sloped back at 2:1 (horizontal to vertical) or shored for safety. Unshored excavations should not extend below a plane drawn at 1½:1 (horizontal to vertical) extending downward from adjacent existing footings. All applicable safety requirements and regulations, including OSHA regulations, should be met.

7.7 Site Drainage

Adequate positive drainage should be provided away from graded areas to prevent ponding and to reduce percolation of water into the foundation soils. Surface drainage should be directed to suitable non-erosive devices. Any slope should be planted as soon as possible after construction.

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7.6 Excavations and Temporary Slopes

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7.7 Site Drainage

Adequate positive drainage should be provided away from graded areas to prevent ponding and to reduce percolation of water into the foundation soils. Surface drainage should be directed to suitable non-erosive devices. Any slope should be planted as soon as possible after construction.

8.0 DESIGN AND CONSTRUCTION RECOMMENDATIONS

8.1 General Evaluation

The various design recommendations provided in this section are based on the assumption that the earthwork and grading recommendations will be implemented in preparing the site.

8.2 Foundation Types and Bearing Pressures

The proposed substation structure(s) may be supported by shallow spread footings, mat foundations or drilled piers. Design recommendations for various types of foundations are presented below.

8.2.1 Shallow Spread Footing Design Parameters

Continuous and isolated shallow spread footings should be at least 18 and 24 inches wide, respectively, and embedded at least 18 inches below lowest adjacent soil grade.

Footings should be placed on at least two feet of structural fill below the bottom of the footings, compacted as recommended in the grading section, and extending at least three feet beyond the edge of the footings. An allowable net vertical bearing pressure for 18 inches wide footing with minimum embedment of 18 inches below adjacent grade is 1,000 pounds per square foot. The allowable bearing capacity may be increased by 500 psf for each additional foot of embedment depth and 150 psf for each additional foot of width to a maximum value of 3,000 psf. The net allowable bearing values indicated above are for the dead loads and frequently applied live loads and are obtained by applying a factor of safety of 3.0 to the net ultimate bearing capacity. If normal code requirements are applied for design, the above vertical bearing value may be increased by 33 percent for short duration loadings, which will include loadings induced by wind or seismic forces.

8.2.2 Mat Foundations

For design of mat foundations founded on native soil or compacted fill, the following equation may be used to calculate the modulus of subgrade reaction, k:

$k = 200[(B+1)/2B]^2$
k = modulus of subgrade reaction, kips per cubic feet
B = foundation width, feet

8.3 Drilled Cast-In-Place Friction Piles

8.3.1 Vertical Capacity

The minimum center-to-center spacing between piles should be no less than three pile diameters. No group efficiency factors are considered necessary. Pile group efficiencies at other pile spacing should be evaluated on a case-by-case basis.

Vertical uplift capacities for intermittent loads can be calculated from the friction capacities.

8.3.2 Pile Construction

Pile drilling and concrete placement should be performed in accordance with the recommendations presented in the Standards and Specifications of ADSC, *An International Association of Foundation Drilling Contractors.*

8.4 Lateral Earth Pressures and Resistance to Lateral Loads

The lateral earth pressures of 40 psf and resistance to lateral loads of 270 psf are estimated by using on-site native soils compacted to an average of 92 percent of the laboratory maximum dry density.

8.5 Slabs-On-Grade

The design of the slabs-on-grade will depend on, among other factors, the expansive potential of the pad soils. Based on the soil classification the expansive potential of the pad soils is expected to be very low.

The slabs-on-grade should be at least four inches thick. Care should be taken to avoid slab curling if slabs are poured in hot weather. Moisture sensitive slabs-on-grade should be protected by polyethylene vapor barriers. The barrier should be overlain by two inches of sand to minimize punctures and to aid in the concrete curing.

Subgrade for slabs-on-grade should be firm and uniform. All slab subgrade should be moisture-conditioned between optimum and two percent above optimum at subgrade soils prior to the placement of concrete. All loose or disturbed soils including under slab utility trench backfills should be recompacted prior to the placement of clean sand underneath the moisture barrier.

8.6 Soil Corrosivity Evaluation

A soil corrosivity study was conducted by Schiff Associates. The study included testing of a bulk soil sample obtained from the site and a resistivity for electrical grounding study. The test includes normal electrical resistivity, pH, soluble sulfates, and chloride content. The results are included in Appendix C, *Soil Corrosivity Sutdy*.

The sulfate content of the samples tested was 98 mg/kg or 0.0098 percent by weight, which indicated that site soils are not deleterious to concrete. Type II Portland Cement may be used for the construction of the foundations or slabs.

The chloride content was 72 ppm by weight. The pH value of the site soil was 7.1. The measured value of the electrical resistivity was 2,360 Ohm-cm, saturated. These soils are considered "moderately corrosive" to ferrous metals. Therefore, corrosion control measures may be necessary for ferrous metals in contact with soil.

8.7 Asphalt Concrete Pavement

Asphalt concrete pavement sections corresponding to Traffic Indices (TIs) ranging from 5 to 8 and an R-value of 47 (an R-Value of 47 was determined in the laboratory), are presented for preliminary design. Analysis was based on Caltrans' design procedure for flexible pavement structural sections. The results of our analysis are presented in Table No. 3.

Table No. 3, Pavement Design.

R-Value	Traffic Index (TI)	Pavement Sections	
		Asphalt Concrete (inches)	Aggregate Base (inches)
47	5.0	3.0	4.0
	6.0	4.0	5.0
	7.0	5.0	6.0
	8.0	6.0	8.0

At or near the completion of grading, subgrade samples should be tested to evaluate the actual subgrade for final pavement design.

Prior to placement of aggregate base, at least the two feet of subgrade soils should be scarified, moisture-conditioned, if necessary, and recompacted to at least 95 percent of the laboratory maximum dry density as defined by ASTM Standard D1557 test method.

Base materials should conform with Section 200-2.2, "*Crushed Aggregate Base*," of the current Standard Specifications for Public Works Construction (SSPWC) and should be placed in accordance with Section 301.2 of the SSPWC.

Asphaltic concrete materials should conform to Section 203 of the SSPWC and should be placed in accordance with Section 302.5 of the SSPWC.

8.8 Settlement

Total settlement of the proposed structures placed on compacted fill, designed as recommended above, from structural load-induced settlements should be 1-inch or less. The differential settlement can be taken as equal to one half of the total settlement over a distance of 50 feet.

8.9 Geotechnical Observation

Prior to construction, the TDBU Geotechnical Group should be contacted to coordinate field observations during construction at (626) 302-9108.

The removal of deleterious materials, roots and the re-working of the upper soils, observation of removal bottoms, fill compaction and testing, foundation excavations and well abandonment/destruction should be observed by a representative of the TDBU Geotechnical Group. Footing excavations should be observed by TDBU Geotechnical Group representative prior to placement of reinforcing steel and concrete.

The governmental agencies having jurisdiction over the project should be notified prior to commencement of grading so that the necessary grading and well abandonment/destruction permits can be obtained and arrangements can be made for required inspection(s). The contractor should be familiar with the inspection requirements of the reviewing agencies and the content of this report. Records of well abandonment/destruction permits and procedures should be provided to the TDBU Geotechnical Group.

9.0 CLOSURE

This report has been prepared to aid in the evaluation of the site, prepare site grading recommendations and to assist the civil and structural engineers in the design of the proposed substation structures and associated foundations.

Recommendations presented herein, are based upon the assumption that adequate earthwork monitoring will be provided. Excavation bottoms should be observed, any imported fill materials should be tested and approved by TDBU Geotechnical Engineer/Engineering Geologist prior to the delivery to the site. Structural fill and backfill should be placed and compacted during continuous observation and testing. Footing excavations and drilling for drilled pier foundations should be observed by TDBU Geotechnical Engineer/Engineering Geologist prior to placement of steel and concrete so that footings are founded on satisfactory materials and excavations are free of loose and disturbed materials.

The findings and recommendations of this report were prepared in accordance with the generally accepted professional engineering and engineering geologic principles and practice within our profession in effect at this time in Southern California.

10.0 REFERENCES

BORTUGNO, E.J. and SPITTLER, T.E., 1986, Geologic Map of the San Bernardino Quadrangle: California Department of Conservation, Division of Mines and Geology, Regional Geologic Map Series, Map No. 3A, 1:250,000 scale.

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APPENDIX A

FIELD EXPLORATION

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

- STANDARD PENETRATION TEST — Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method
- DRIVE SAMPLE — 2.42" I.D. sampler
- DRIVE SAMPLE — No recovery
- BULK SAMPLE
- GROUNDWATER WHILE DRILLING
- GROUNDWATER AFTER DRILLING

LABORATORY TESTING ABBREVIATIONS

TEST TYPE (Results shown in Appendix B)		STRENGTH	
		Pocket Penetrometer	p
		Direct Shear	ds
		Direct Shear (single point)	ds*
		Unconfined Compression	uc
		Triaxial Compression	tx
		Vane Shear	vs
CLASSIFICATION			
Plasticity	pl		
Grain Size Analysis	ms		
Passing No. 200 Sieve	wa	Consolidation	c
Sand Equivalent	se	Collapse Test	col
Expansion Index	ei	Resistance (R) Value	r
Compaction Curve	max	Chemical Analysis	ca
Hydrometer	h	Electrical Resistivity	er

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 1

Log of Boring No. BH - 1

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1439 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM (Qal): **SILTY SAND (SM):** fine- to coarse-grained, brown.	■	▨	2/2/3	11	112	
			■	▨	2/3/6	10	121	max,ma
5			■		3/3/4	10	114	ds
			☒		2/2/4			
10			■		3/7/10	9	108	ds
15			☒		5/9/9			
20		**SANDY SILT (ML):** fine-grained sand, trace clay, light brown.	■		7/15/22	22	102	
25		**SILTY SAND (SM):** fine- to coarse-grained, brown.	☒		3/6/7			
30		**CLAYEY SAND (SC):** fine- to coarse-grained, red-brown.	■		5/22/33	12	124	

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 2a

Log of Boring No. BH - 1

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1439 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		CLAYEY SAND (SC): fine- to coarse-grained, red-brown.	X		9/13/14			
		End of boring at 36.5 feet. No groundwater encountered during drilling. Borehole backfilled loose with soil cuttings on 9-4-2009.						

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Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 2b

Log of Boring No. BH - 2

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1441 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM (Qal): **SILTY SAND (SM):** fine- to coarse-grained, brown.	■	▨	3/3/3	12	112	
			■	▨	3/3/3	10	117	max,ei,ma ca,er
5		- trace to little clay	■		5/10/9	13	123	ds
		SANDY SILT (ML): fine-grained sand, brown.	■		6/8/6	18	102	ds
10			☒		3/4/7			
15			■		15/21/35	13	114	
20			☒		5/13/18			
25		**CLAYEY SAND (SC):** fine- to coarse-grained, brown.	■		10/19/24	12	126	
30			☒		6/13/15			

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Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 3a

Log of Boring No. BH - 2

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1441 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		SAND TO SILTY SAND (SP-SM): fine- to coarse-grained, brown.	■		8/14/28	6	109	
40		**SILTY SAND (SM):** fine- to coarse-grained, brown.	☒		7/13/17			
45			■		10/16/35	14	122	
50			☒		7/11/15			
		End of boring at 51.5 feet. No groundwater encountered during drilling. Borehole backfilled loose with soil cuttings on 9-4-2009.						

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Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 3b

Log of Boring No. BH - 3

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1440 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM (Qal): **SILTY SAND (SM):** fine- to coarse-grained, brown.	■	▨	1/1/2	9	106	
			■	▨	2/4/5	14	115	r
5			■		7/14/19	12	126	
			☒		2/5/6			
10			■		5/7/19	10	99	ds
15			☒		4/5/7			
20		**SANDY SILT (ML):** fine-grained sand, brown.	■		7/18/21	18	110	
25			☒		2/2/3			
30		**SILTY SAND (SM):** fine- to coarse-grained, trace clay, brown.	■		6/19/20	11	126	

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Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 4a

Log of Boring No. BH - 3

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1440 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		SILTY SAND (SM): fine- to coarse-grained, brown.	X		10/13/13			
		End of boring at 36.5 feet. No groundwater encountered during drilling. Borehole backfilled loose with soil cuttings on 9-4-2009.						

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Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 4b

Log of Boring No. BH - 4

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1442 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM (Qal): **SILTY SAND (SM):** fine- to coarse-grained, brown.	■	▨	4/6/5	11	107	
					2/2/3	12	119	max
5			■		2/5/8	12	122	
			■		5/11/10	20	100	ds
10			☒		3/2/3			
15		**SANDY SILT (ML):** fine-grained sand, trace little clay, brown.	■		11/21/28	24	100	
20			☒		6/8/12			
25		**SILTY SAND (SM):** fine- to coarse-grained, brown.	■		11/23/28	16	120	ds
30			☒		4/5/5			

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Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 5a

Log of Boring No. BH - 4

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1442 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		SAND TO SILTY SAND (SP-SM): fine- to coarse-grained, brown.	■		7/16/26	7	116	
		End of boring at 36.5 feet. No groundwater encountered during drilling. Borehole backfilled loose with soil cuttings on 9-4-2009.						

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Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 5b

Log of Boring No. BH - 5

Dates Drilled: 9/4/2009 Logged by: CG Checked By: JG

Equipment: CME75 / 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): ±1442 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	LABORATORY TEST
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM (Qal): **SILTY SAND (SM):** fine- to coarse-grained, brown.	■	▨	3/4/4	10	109	
			■	▨	2/2/2	9	118	ds max,ma
5			■		2/5/11	11	130	
			☒		2/5/6			
10		**SAND TO SILTY SAND (SP-SM):** fine- to coarse-grained, brown.	■		4/4/7	6	110	
15		**SANDY SILT (ML):** fine-grained sand, brown.	☒		6/9/11			
20		**SILTY SAND (SM):** fine- to coarse-grained, brown.	■		10/18/31	14	122	
25			☒		6/14/20			
		End of boring at 26.5 feet. No groundwater encountered during drilling. Borehole backfilled loose with soil cuttings on 9-4-2009.						

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01 Drawing No. A - 6

APPENDIX B

LABORATORY TESTING PROGRAM

APPENDIX B

LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their physical properties and engineering characteristics. The amount and selection of tests were based on the geotechnical parameters required for this project. Test results are presented herein and on the Logs of Borings in Appendix A, *Field Exploration*. The following is a summary of the various laboratory tests conducted for this project.

Moisture Content and Dry Density

Results of these tests performed on relatively undisturbed samples, were used to aid in the classification and correlation of the soils and to provide qualitative information regarding soil strength and compressibility. For test results, see the Logs of Borings in Appendix A, *Field Exploration*.

Expansion Index Test

One (1) representative bulk sample was tested to evaluate the expansion potential of materials encountered at the site. The test was conducted in accordance with ASTM Standard D4829. The test result is presented in the following table.

Table No. B-1, Expansion Index Test Results

Boring No.	Depth (feet)	Description	Expansion Index	Expansion Potential
BH-2 / 0-5	0-5	Silty Sand (SM)	0	Very low

Soil Corrosivity

One (1) representative soil sample was tested to determine minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests is to determine the corrosion potential of soils when placed in contact with common construction materials. These tests were performed by Schiff Associates, Claremont, California. For test results, see the following table.

Table No. B-2, Soil Corrosivity Test Results

Location / Depth (feet)	pH	Chloride (mg/kg)	Sulfate (mg/kg)	Min. Saturated Resistivity (Ohm-cm)
BH-2/0-5	7.5	38	43	2,076

Grain-Size Analysis

To assist in classification of soils, mechanical grain-size analyses were performed on three (3) selected samples. Testing was performed in general accordance with the ASTM Standard C136 test method. Grain-size curves are shown in Drawing No. B-1, *Grain Size Distribution Results*.

Laboratory Maximum Density and Optimum Moisture Tests

Four (4) representative samples were tested to determine the maximum density optimum-moisture content relationships. This test was conducted in accordance with ASTM Standard D1557 laboratory procedure. Test results are presented in Drawing No. B-2, *Moisture Density Relationship Results.*

Direct Shear Test

Eight (8) direct shear tests were performed on undisturbed ring samples at soaked moisture conditions. For each test, three (3) samples contained in brass sampler rings were placed one at a time directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. Each sample was then sheared at a constant strain rate of 0.01 inch/minute. Shear deformation was recorded until a maximum of about 0.25-inch shear displacement was achieved. Both ultimate and peak strengths were selected from the shear-stress deformation data and plotted to determine the shear strength parameters. Test data, including sample density and moisture content are presented in the following table and test results are graphically presented in Drawing Nos. B-3 through B-10, *Direct Shear Test Results.*

Table No. B-3, Direct Shear Test Results

Boring No.	Depth (feet)	Soil Classification	Test Conditions	Friction Angle (degrees)	Cohesion (psf)
BH-1	5.0-6.5	Silty Sand (SM)	Saturated	31	150
BH-1	10.0-11.5	Silty Sand (SM)	Saturated	34	100
BH-2	5.0-6.5	Silty Sand (SM)	Saturated	33	100
BH-2	7.0-8.5	Sandy Silt (ML)	Saturated	34	150
BH-3	10.0-11.5	Silty Sand (SM)	Saturated	32	150
BH-4	7.0-8.5	Sandy Silt (ML)	Saturated	33	50
BH-4	25.0-26.5	Silty Sand (SM)	Saturated	31	250
BH-5	2.0-3.5	Silty Sand (SM)	Saturated	34	100

R-value Test

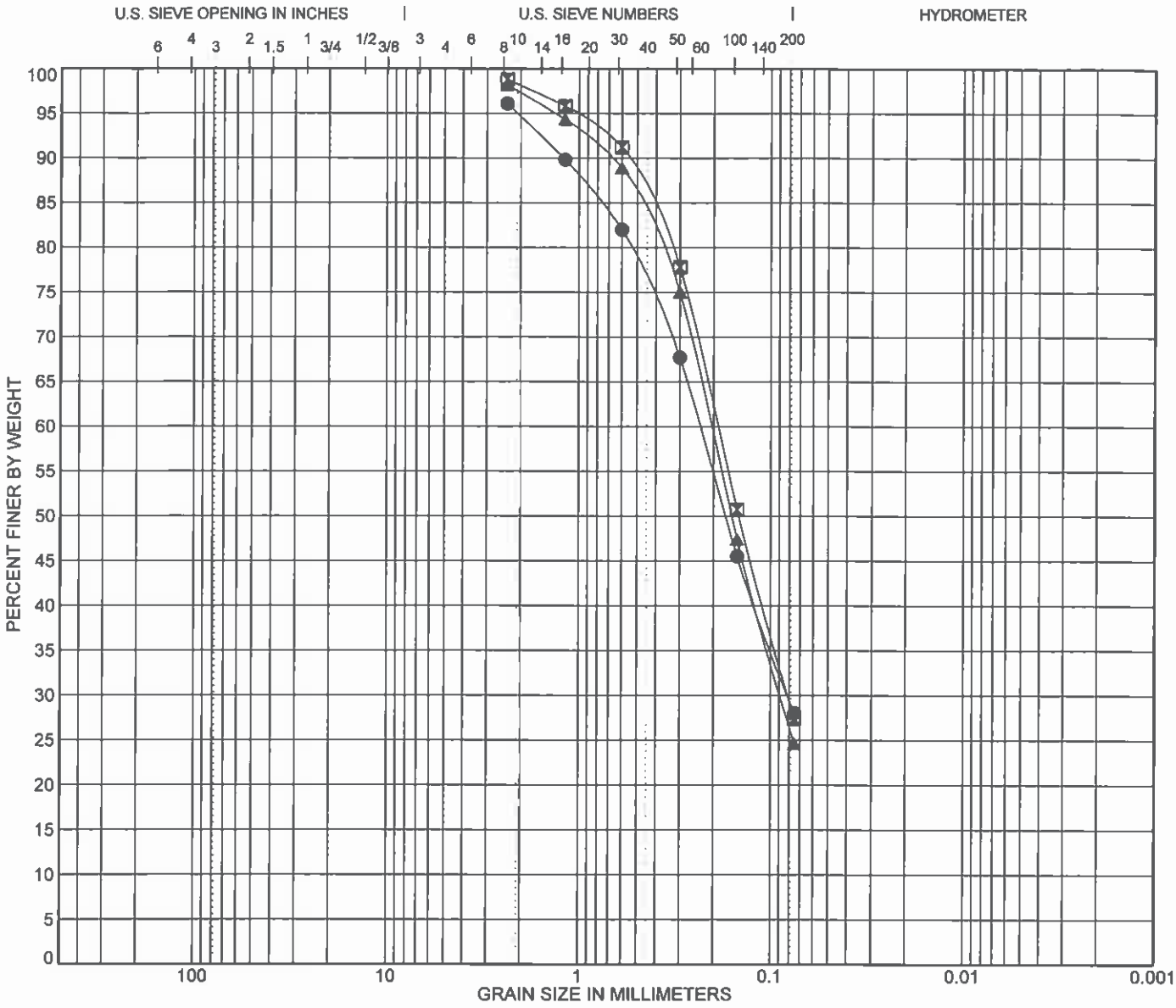
A representative bulk soil sample was tested for resistance value (R-value) in accordance with ASTM Standard D2844 test method. This test is designed to provide a relative measure of soil strength for use in pavement design. The test result is indicated in the following table.

Table No. B-4, R-value Test Result

Boring No.	Depth (feet)	Soil Type	R-value
BH-3	0-5	Silty Sand (SM)	47

Sample Storage

Soil samples were discarded 30 days after the date of the initial report.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	BH - 1	0-5	SILTY SAND (SM)					
⊠	BH - 2	0-5	SILTY SAND (SM)					
▲	BH - 5	0-5	SILTY SAND (SM)					

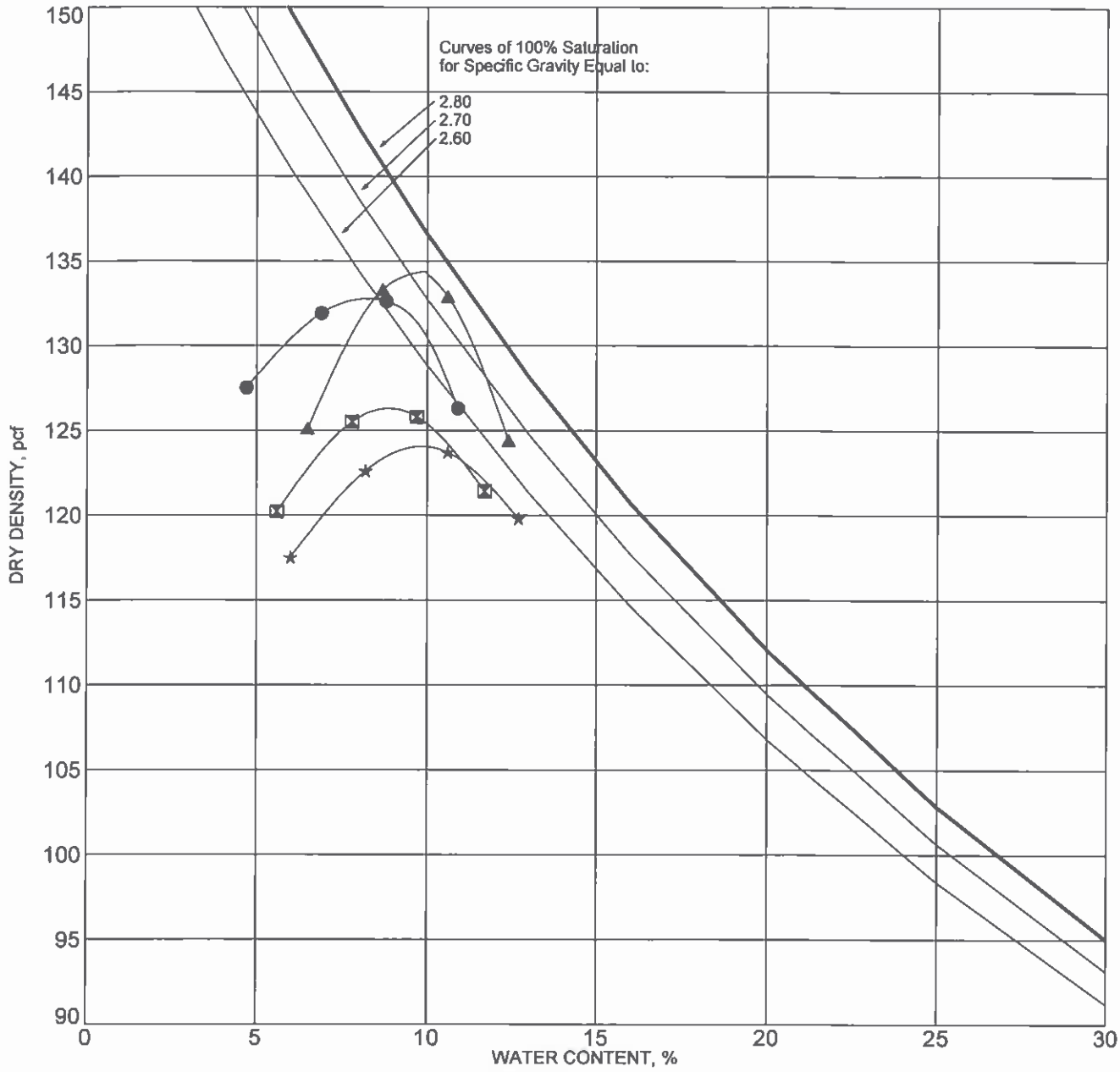
	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	BH - 1	0-5	2.36	0.236	0.081		0.0	68.1	28.0	
⊠	BH - 2	0-5	2.36	0.19	0.081		0.0	71.4	27.4	
▲	BH - 5	0-5	2.36	0.206	0.088		0.0	73.6	24.6	

GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 1



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	**BH - 1**	**0-5**	**SILTY SAND (SM), brown**	**D1557 - A**	**8.0**	**133.0**
⊠	**BH - 2**	**0-5**	**SILTY SAND (SM), brown**	**D1557 - A**	**9.0**	**126.5**
▲	BH - 4	0-5	SILTY SAND (SM), brown	D1557 - A	10.0	134.5
★	BH - 5	0-5	SILTY SAND (SM), brown	D1557 - A	10.0	124.5

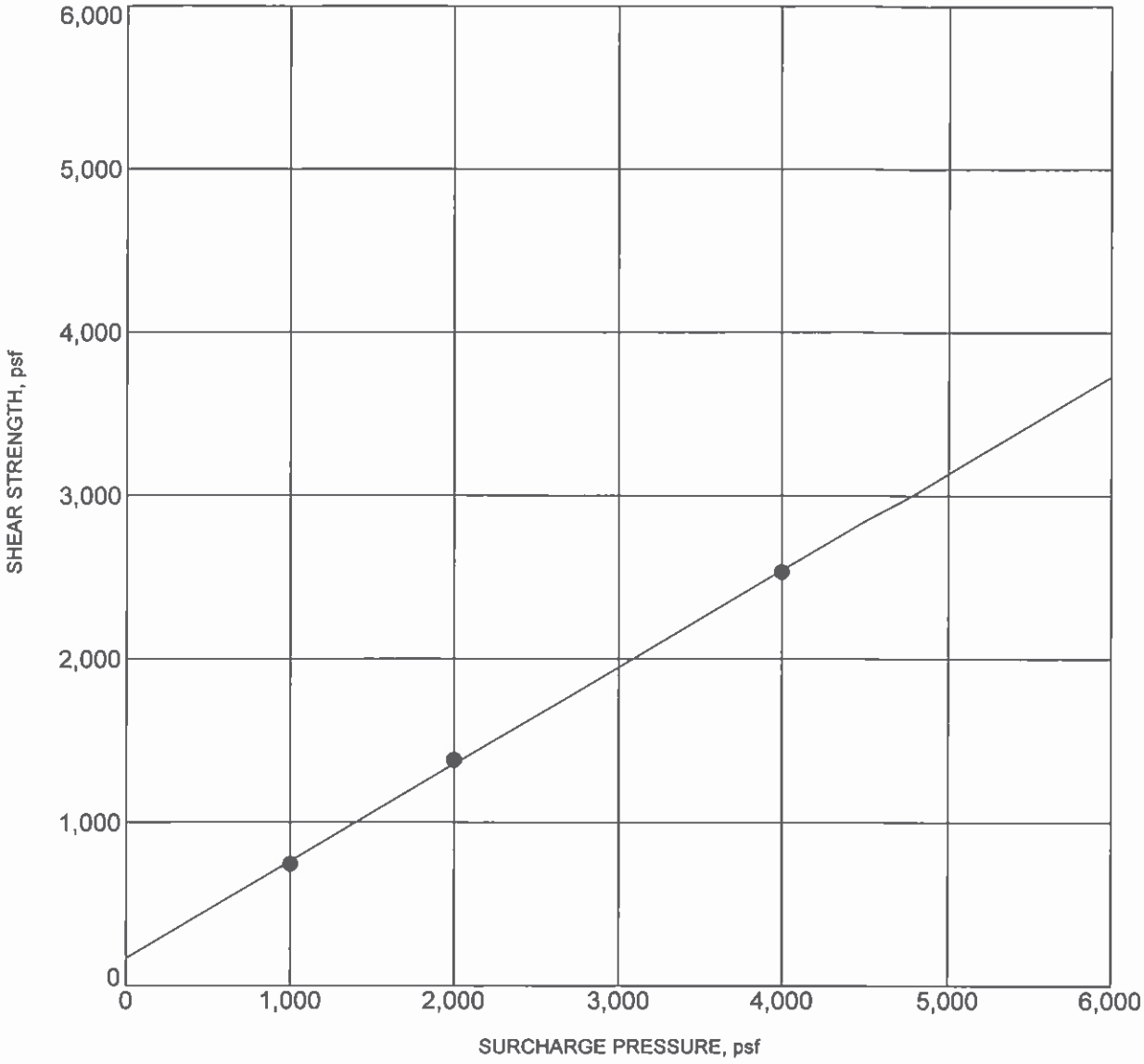
MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01

Drawing No. B - 2



BORING NO.	:	**BH - 1**	DEPTH (ft)	:	**5.0-6.5**
DESCRIPTION	:	**SILTY SAND (SM)**			
COHESION (psf)	:	**150**	FRICTION ANGLE (degrees):		**31**
MOISTURE CONTENT (%)	:	**9.6**	DRY DENSITY (pcf)	:	**114.1**

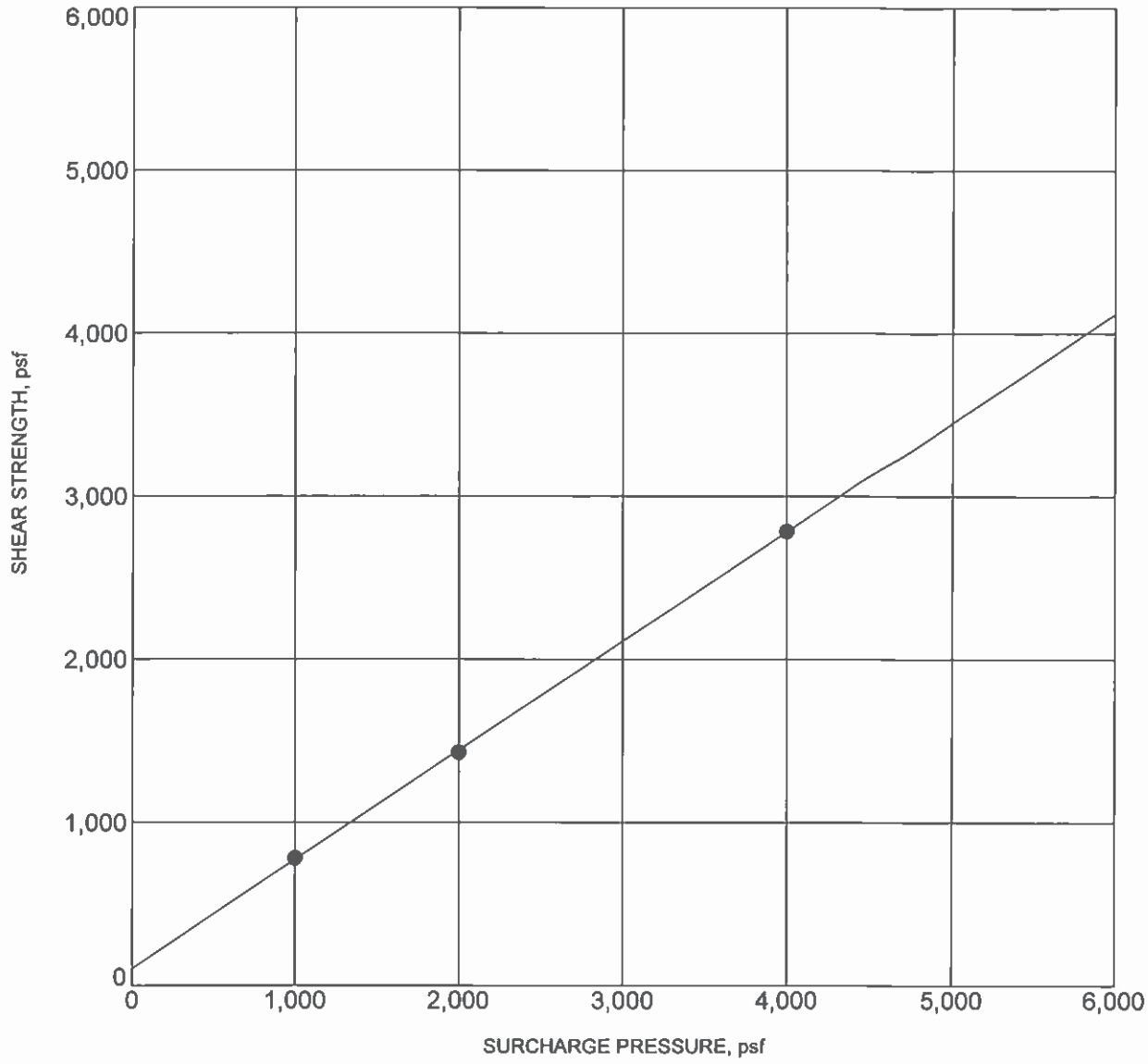
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 3



BORING NO.	:	BH - 1	DEPTH (ft)	:	10.0-11.5
DESCRIPTION	:	SILTY SAND (SM)			
COHESION (psf)	:	100	FRICTION ANGLE (degrees):		34
MOISTURE CONTENT (%)	:	8.7	DRY DENSITY (pcf)	:	107.9

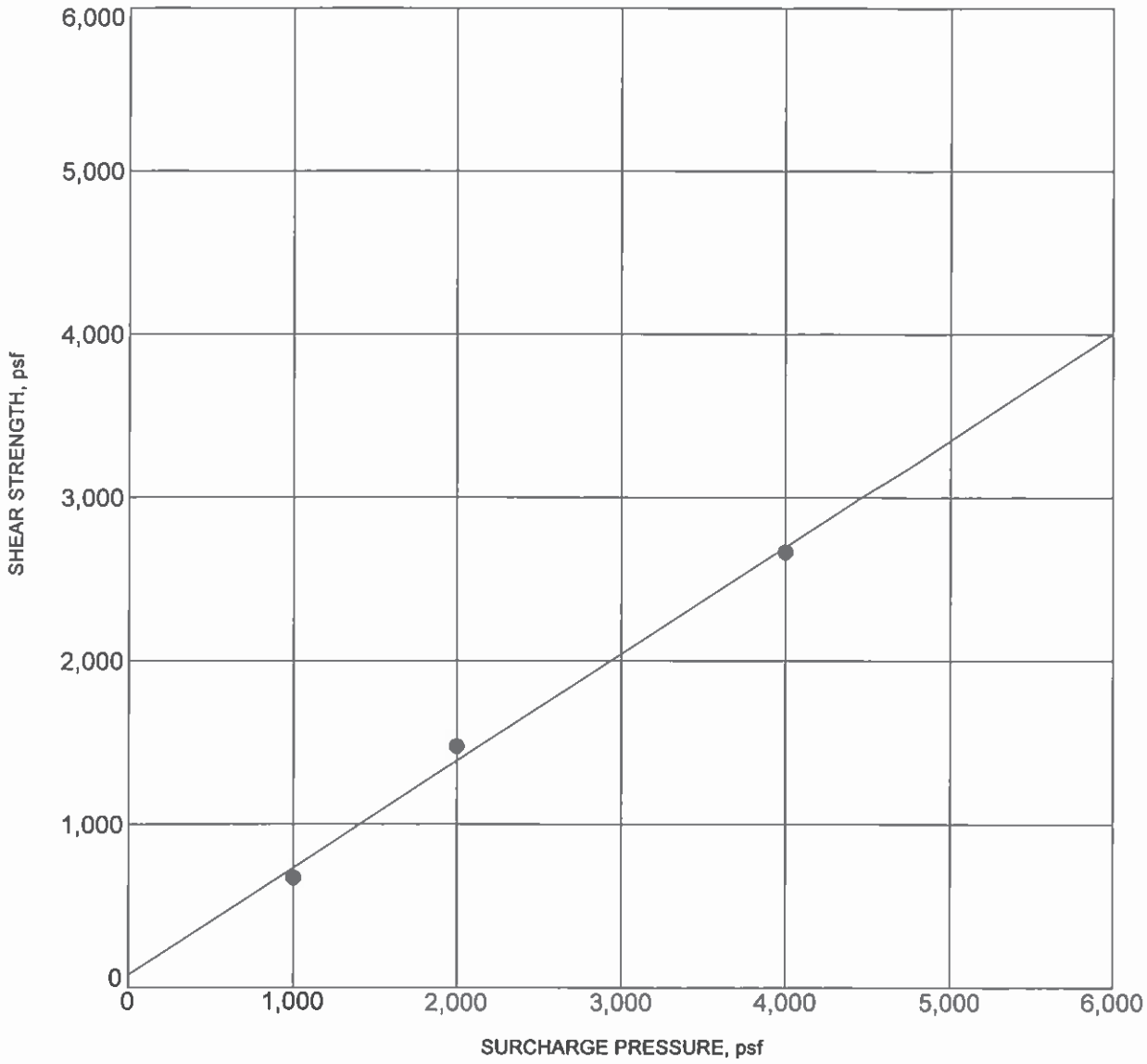
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 4



BORING NO.	:	**BH - 2**	DEPTH (ft)	:	**5.0-6.5**
DESCRIPTION	:	**SILTY SAND (SM)**			
COHESION (psf)	:	**100**	FRICTION ANGLE (degrees):		**33**
MOISTURE CONTENT (%)	:	**13.4**	DRY DENSITY (pcf)	:	**122.7**

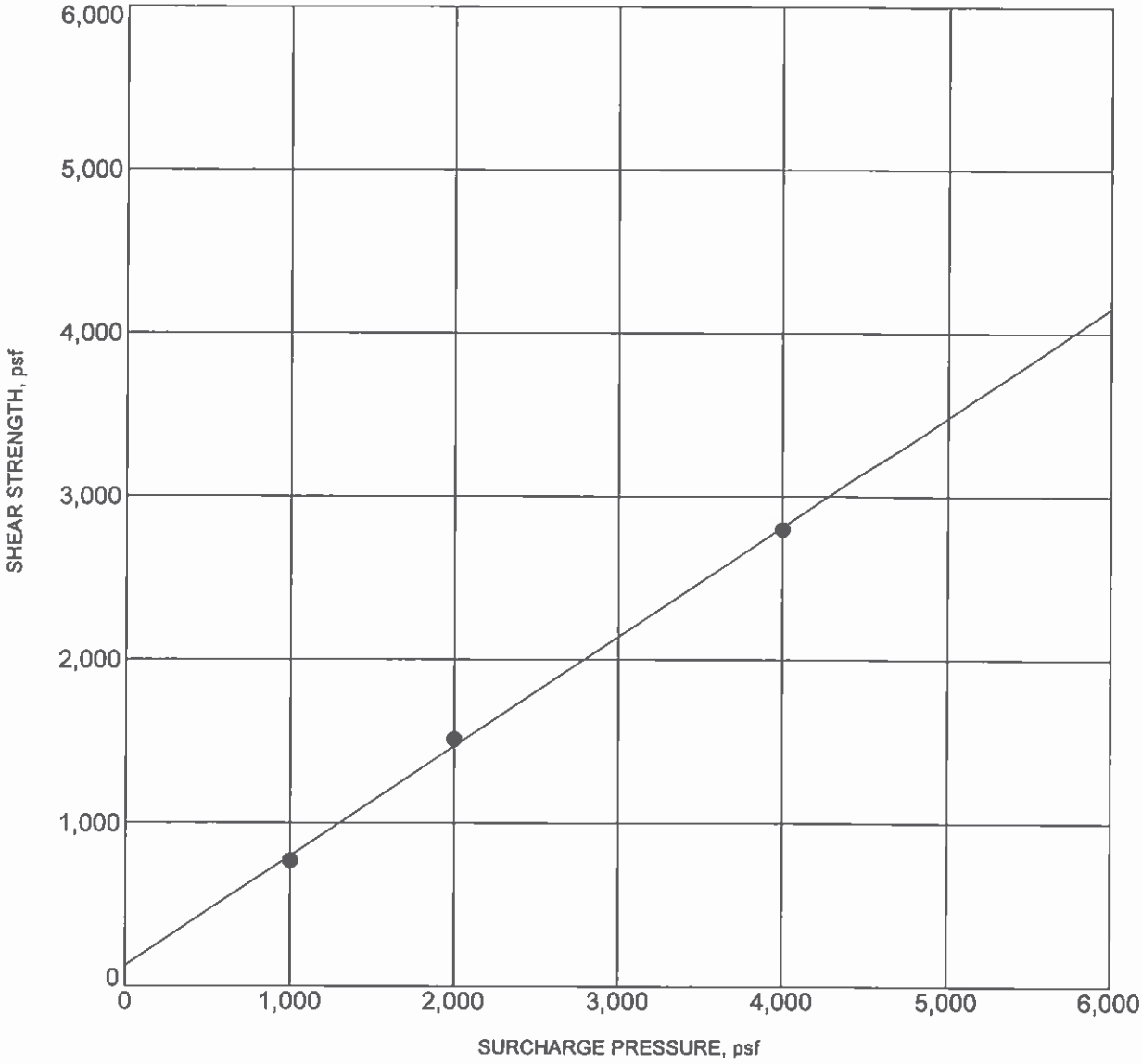
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 5



BORING NO.	:	BH - 2	DEPTH (ft)	:	7.0-8.5
DESCRIPTION	:	SANDY SILT (ML)			
COHESION (psf)	:	150	FRICTION ANGLE (degrees):		34
MOISTURE CONTENT (%)	:	18.0	DRY DENSITY (pcf)	:	102.1

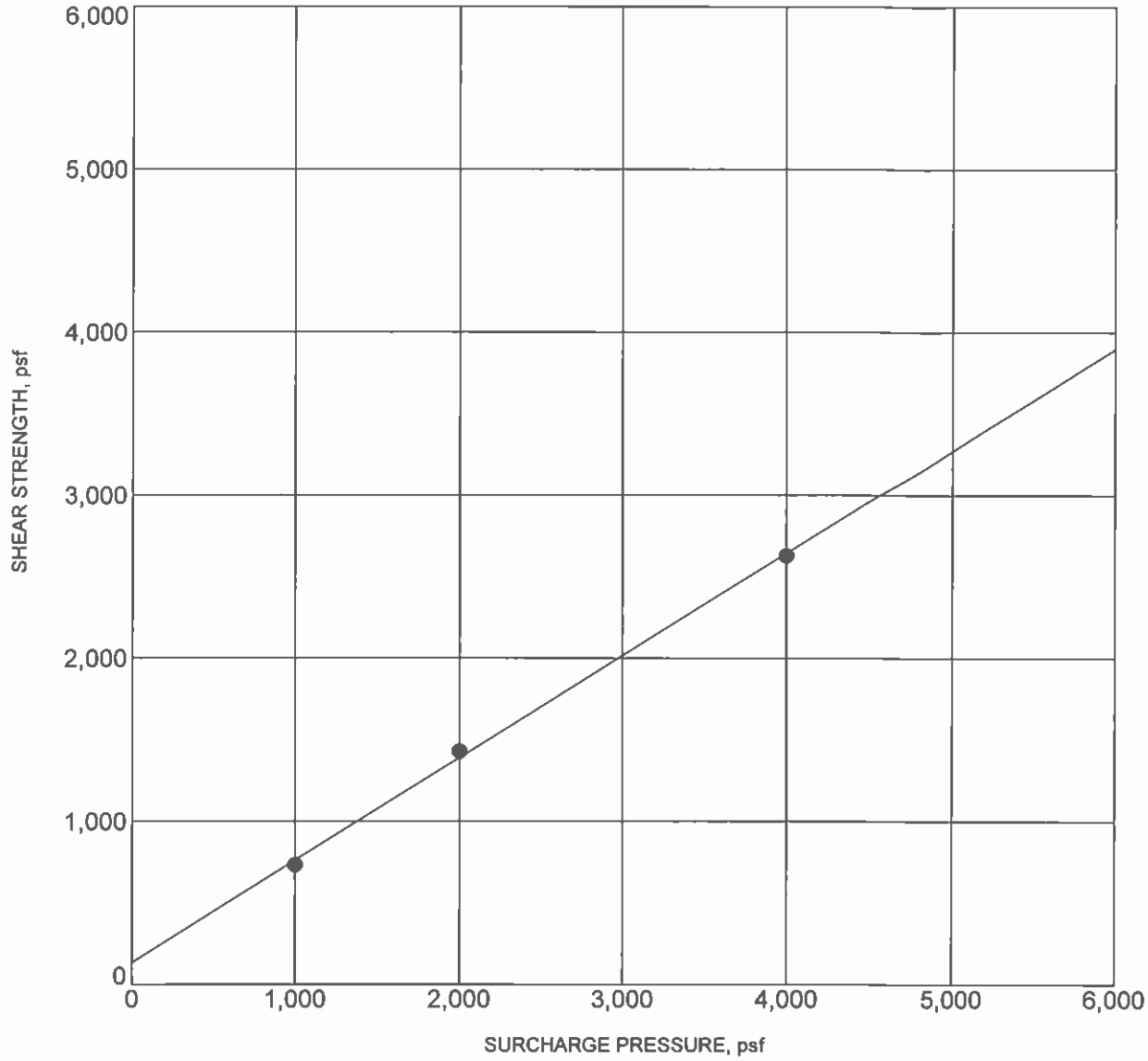
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 6



BORING NO.	:	**BH - 3**	DEPTH (ft)	:	**10.0-11.5**
DESCRIPTION	:	**SILTY SAND (SM)**			
COHESION (psf)	:	**150**	FRICTION ANGLE (degrees):		**32**
MOISTURE CONTENT (%)	:	**10.3**	DRY DENSITY (pcf)	:	**98.9**

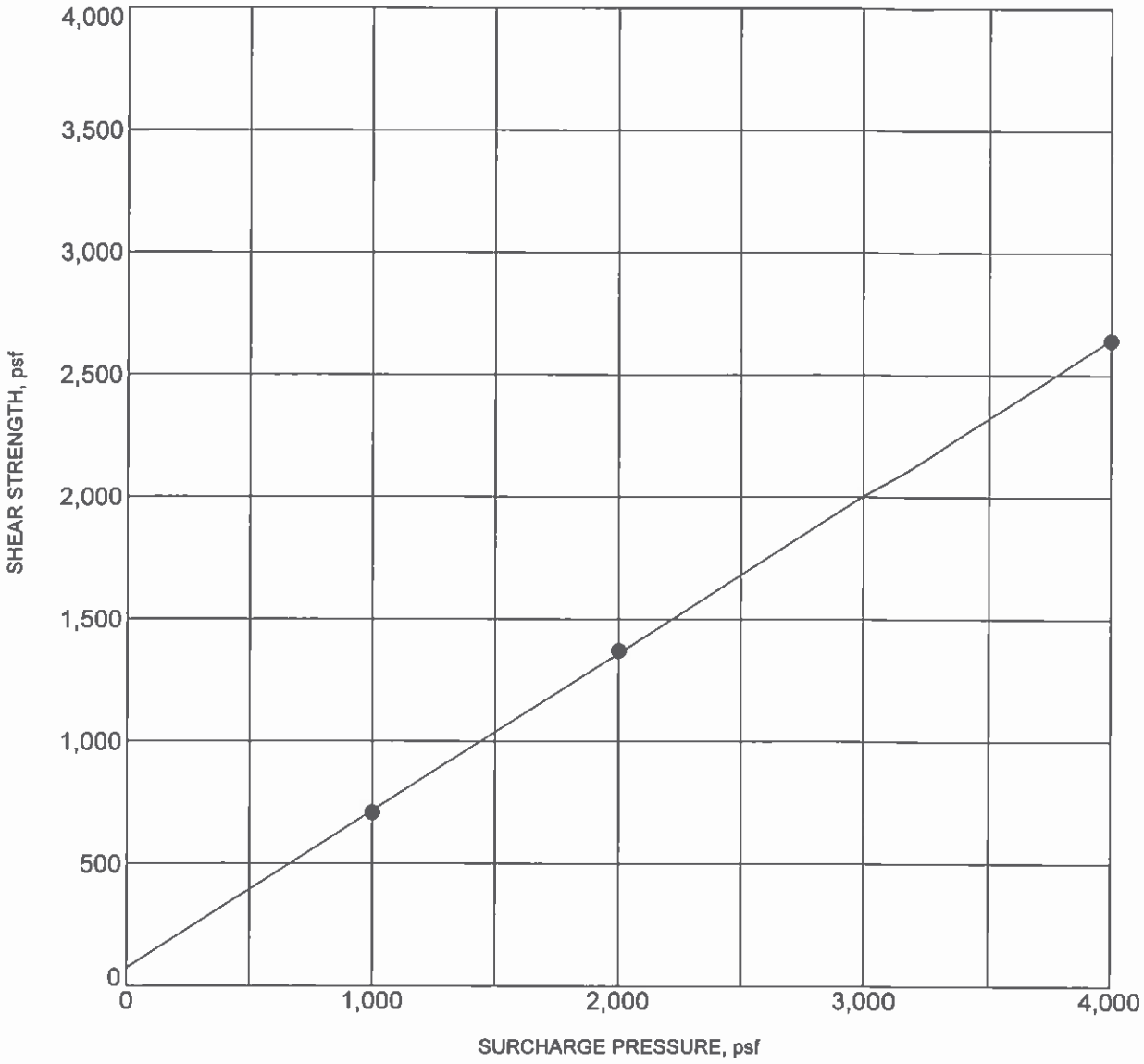
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 7



BORING NO.	:	BH - 4	DEPTH (ft)	:	7.0-8.5
DESCRIPTION	:	SANDY SILT (ML)			
COHESION (psf)	:	50	FRICTION ANGLE (degrees):		33
MOISTURE CONTENT (%)	:	20.1	DRY DENSITY (pcf)	:	100.2

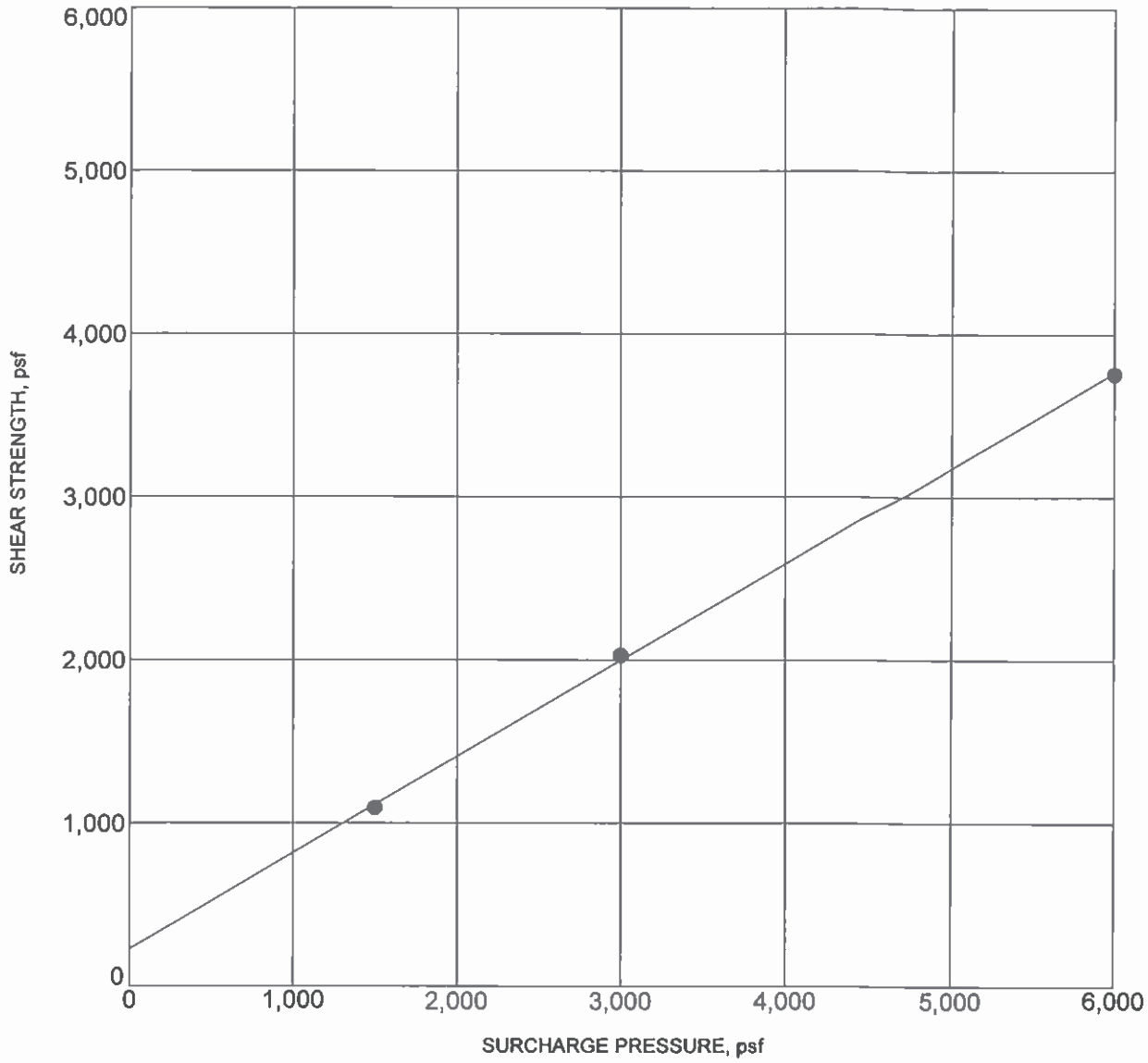
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 8



BORING NO.	:	**BH - 4**	DEPTH (ft)	:	**25.0-26.5**
DESCRIPTION	:	**SILTY SAND (SM)**			
COHESION (psf)	:	**250**	FRICTION ANGLE (degrees):		**31**
MOISTURE CONTENT (%)	:	**15.6**	DRY DENSITY (pcf)	:	**119.8**

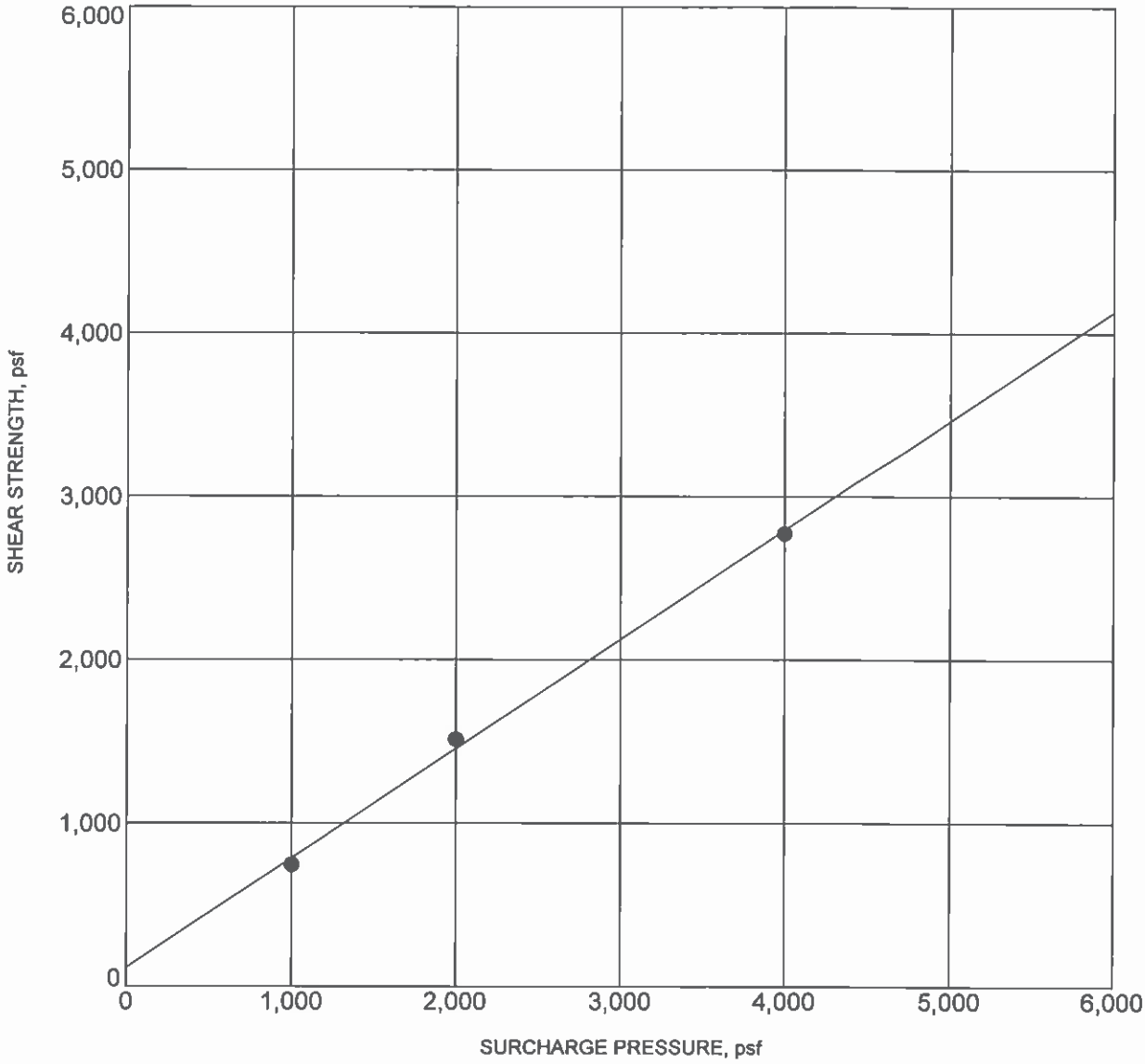
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 9



BORING NO.	:	**BH - 5**	DEPTH (ft)	:	**2.0-3.5**
DESCRIPTION	:	**SILTY SAND (SM)**			
COHESION (psf)	:	**100**	FRICTION ANGLE (degrees):		**34**
MOISTURE CONTENT (%)	:	**9.4**	DRY DENSITY (pcf)	:	**117.5**

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Lakeview Substation
Southwest of the Intersection of 10th Street and Reservoir Avenue
Nuevo, Riverside County, California
For: Southern California Edison

Project No. 09-81-272-01
Drawing No. B - 10

APPENDIX C

SOIL CORROSIVITY STUDY

SCHIFF ASSOCIATES
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Consulting Corrosion Engineers – Since 1959

December 10, 2009 via email: Esam.Abraham@sce.com

SOUTHERN CALIFORNIA EDISON
2131 Walnut Grove Avenue
Rosemead, CA 91770

Attention: Mr. Esam Abraham, P.E.

Re: Soil Corrosivity Study
Lakeview Substation
Nuevo, California
SA #09-0982SCSP

INTRODUCTION

Field and laboratory tests have been completed for the subject project. Laboratory tests have been completed on one soil sample provided for the referenced project. Schiff Associates assumes that the sample provided is representative of the most corrosive soil at the site. The purpose of these tests was to determine the electrical resistivity of the soil for grounding design and to determine if the soil might have deleterious effects on underground utility piping and concrete structures.

This report will address the latter. For grounding design, soil electrical resistivities are provided as 'data only' in order to aid other engineers in their design.

The proposed construction consists of an electrical substation. The site is located at the intersection of Reservoir Avenue and 10th Street in Nuevo, California. The water table depth was not provided; therefore, its effect on site corrosivity could not be accounted for in this analysis and report.

The scope of this study is limited to a determination of soil corrosivity and general corrosion control recommendations for materials likely to be used for construction. Our recommendations do not constitute, and are not meant as a substitute for, design documents for the purpose of construction. If the architects and/or engineers desire more specific information, designs, specifications, or review of design, Schiff Associates will be happy to work with them as a separate phase of this project.

TEST PROCEDURES

The electrical resistivity of the soil was measured in-situ at one location with two orientations using the Wenner Four Pin Method in accordance with the EDSL 33-90-00 Soil Test Requirements. This procedure gives the average resistivity to a depth equal to the spacing between the pins. Pin spacings of 1, 1.5, 2.5, 5, 7, 10, 15, 25, 50, 75, 100, and 150 feet were used so that variations with depth could be evaluated. In addition to the EDSL 33-90-00 Soil Test Requirements, strata resistivities were calculated from resistance data using the Barnes Procedure. Test results are shown in Table 1. A sketch of the site map where the tests were performed is provided in the Appendix.

The electrical resistivity of the soil sample was measured in a soil box per ASTM G187 in its as-received condition and again after saturation with distilled water. Resistivities are at about their lowest value when the soil is saturated. The pH of the saturated sample was measured per CTM 643. A 5:1 water:soil extract from the sample was chemically analyzed for the major soluble salts commonly found in soil per ASTM D4327 and D513. Test results are shown in Table 2.

SOIL CORROSIVITY

A major factor in determining soil corrosivity is electrical resistivity. The electrical resistivity of a soil is a measure of its resistance to the flow of electrical current. Corrosion of buried metal is an electrochemical process in which the amount of metal loss due to corrosion is directly proportional to the flow of electrical current (DC) from the metal into the soil. Corrosion currents, following Ohm's Law, are inversely proportional to soil resistivity. Lower electrical resistivities result from higher moisture and soluble salt contents and indicate corrosive soil.

A correlation between electrical resistivity and corrosivity toward ferrous metals is:[1]

Soil Resistivity in ohm-centimeters	Corrosivity Category
Greater than 10,000	Mildly Corrosive
2,000 to 10,000	Moderately Corrosive
1,000 to 2,000	Corrosive
0 to 1,000	Severely Corrosive

Other soil characteristics that may influence corrosivity towards metals are pH, soluble salt content, soil types, aeration, anaerobic conditions, and site drainage.

The average and stratum resistivities measured in the field within the upper 15-foot soil strata were in the moderately corrosive category.

[1] *Romanoff, Melvin. Underground Corrosion, NBS Circular 579. Reprinted by NACE. Houston, TX, 1989, pp. 166–167.*

The electrical resistivity measured in the laboratory was in the mildly corrosive category with as-received moisture. When saturated, the resistivity was in the moderately corrosive category. The resistivity dropped considerably with added moisture because the sample was dry as-received.

The soil pH value was 7.1. This is neutral alkaline[2] and does not particularly increase soil corrosivity.

The soluble salt content of the sample was moderate.

Ammonium was detected in a low concentration. Nitrate was detected in a concentration high enough to be deleterious to copper.

Tests were not made for sulfide and negative oxidation-reduction (redox) potential because the sample did not exhibit characteristics typically associated with anaerobic conditions.

This soil is classified as moderately corrosive to ferrous metals and aggressive to copper.

CORROSION CONTROL RECOMMENDATIONS

The life of buried materials depends on thickness, strength, loads, construction details, soil moisture, etc., in addition to soil corrosivity, and is, therefore, difficult to predict. Of more practical value are corrosion control methods that will increase the life of materials that would be subject to significant corrosion.

The following recommendations are based on the soil conditions discussed in the Soil Corrosivity section above. Unless otherwise indicated, these recommendations apply to the entire site or alignment.

Steel Pipe

Implement *all* the following measures:

1. Underground steel pipe with rubber gasketed, mechanical, grooved end, or other nonconductive type joints should be bonded for electrical continuity. Electrical continuity is necessary for corrosion monitoring and cathodic protection.
2. Install corrosion monitoring test stations to facilitate corrosion monitoring and the application of cathodic protection:
    a. At each end of the pipeline.
    b. At each end of all casings.
    c. Other locations as necessary so the interval between test stations does not exceed 1,200 feet.

---

[2] *Romanoff, Melvin. Underground Corrosion, NBS Circular 579. Reprinted by NACE. Houston, TX, 1989, p. 8.*

3. To prevent dissimilar metal corrosion cells and to facilitate the application of cathodic protection, electrically isolate each buried steel pipeline per NACE Standard SP0286 from:
    a. Dissimilar metals.
    b. Dissimilarly coated piping (cement-mortar vs. dielectric).
    c. Above ground steel pipe.
    d. All existing piping.
4. Choose one of the following corrosion control options:

OPTION 1

a. Apply a suitable dielectric coating intended for underground use such as:
    i. Polyurethane per AWWA C222 *or*
    ii. Extruded polyethylene per AWWA C215 *or*
    iii. A tape coating system per AWWA C214 *or*
    iv. Hot applied coal tar enamel per AWWA C203 *or*
    v. Fusion bonded epoxy per AWWA C213.

b. Apply cathodic protection to steel piping as per NACE Standard SP0169.

OPTION 2

a. As an alternative to dielectric coating and cathodic protection, apply a ¾-inch cement mortar coating per AWWA C205 or encase in concrete 3 inches thick, using any type of cement. Joint bonds, test stations, and insulated joints are still required for these alternatives.

NOTE: Some steel piping systems, such as for oil, gas, and high-pressure piping systems, have special corrosion and cathodic protection requirements that must be evaluated for each specific application.

Iron Pipe

Implement *all* the following measures:

1. Electrically insulate underground iron pipe from dissimilar metals and from above ground iron pipe with insulating joints per NACE Standard SP0286.
2. Bond all nonconductive type joints for electrical continuity. Electrical continuity is necessary for corrosion monitoring and cathodic protection.
3. Install corrosion monitoring test stations to facilitate corrosion monitoring and the application of cathodic protection:
    a. At each end of the pipeline.
    b. At each end of any casings.
    c. Other locations as necessary so the interval between test stations does not exceed 1,200 feet.
4. Choose one of the following corrosion control options:

OPTION 1

a. Apply a suitable coating intended for underground use such as:
   i. Polyethylene encasement per AWWA C105; *or*
   ii. Epoxy coating; *or*
   iii. Polyurethane; *or*
   iv. Wax tape.

   NOTE: The thin factory-applied asphaltic coating applied to ductile iron pipe for transportation and aesthetic purposes does not constitute a corrosion control coating.

b. Apply cathodic protection to cast and ductile iron piping as per NACE Standard SP0169.

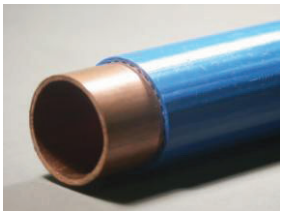
OPTION 2

a. As an alternative to dielectric coating and cathodic protection, concrete encase all buried portions of metallic piping so that there is a minimum of 3 inches of concrete cover provided over and around surfaces of pipe, fittings, and valves using any type of cement.

Copper Tubing

Protect buried copper tubing by *one* of the following measures:

1. Prevention of soil contact. Soil contact may be prevented by placing the tubing above ground or encasing the tubing using PVC pipe with solvent-welded joints.
2. Installation of a factory-coated copper pipe with a minimum 25-mil thickness such as Kamco's Aqua Shield™, Mueller's Streamline Protec™, or equal. The coating must be continuous with no cuts or defects.
3. Installation of 12-mil polyethylene pipe wrapping tape with butyl rubber mastic over a suitable primer. Protect wrapped copper tubing by applying cathodic protection per NACE Standard SP0169.



Plastic and Vitrified Clay Pipe

1. No special precautions are required for plastic and vitrified clay piping placed underground from a corrosion viewpoint.

2. Protect all metallic fittings and valves with wax tape per AWWA C217 or epoxy.

All Pipe

1. On all pipes, appurtenances, and fittings not protected by cathodic protection, coat bare metal such as valves, bolts, flange joints, joint harnesses, and flexible couplings with wax tape per AWWA C217 after assembly.

2. Where metallic pipelines penetrate concrete structures such as building floors, vault walls, and thrust blocks use plastic sleeves, rubber seals, or other dielectric material to prevent pipe contact with the concrete and reinforcing steel.

Concrete

1. From a corrosion standpoint, any type of cement may be used for concrete structures and pipe because the sulfate concentration is negligible, 0 to 0.1 percent.[3,4,5,6]
2. Standard concrete cover over reinforcing steel may be used for concrete structures and pipe in contact with these soils due to the low chloride concentration[7] found onsite.

Resistivity for Electrical Grounding System

1. Refer to Table 1 for average soil resistivity values to depth for design of electrical ground grids and ground rods for the proposed site.

---

[3] *1997 Uniform Building Code (UBC) Table 19-A-4*

[4] *2006 International Building Code (IBC) which refers to American Concrete Institute (ACI-318) Table 4.3.1*

[5] *2006 International Residential Code (IRC) which refers to American Concrete Institute (ACI-318) Table 4.3.1*

[6] *2007 California Building Code (CBC) which refers to American Concrete Institute (ACI-318) Table 4.3.1*

[7] *Design Manual 303: Concrete Cylinder Pipe. Ameron. p.65*

CLOSURE

Our services have been performed with the usual thoroughness and competence of the engineering profession. No other warranty or representation, either expressed or implied, is included or intended.

Please call if you have any questions.

Respectfully Submitted,
SCHIFF ASSOCIATES

Leobardo Solis

Brien L. Clark, P.E.

LICENSED PROFESSIONAL ENGINEER
BRIEN L. CLARK
CH 6291
EXP 12/31/09
CHEMICAL
STATE OF CALIFORNIA
12-10-09

Enc: Table 1-Soil Resistivity Field Tests
Table 2-Laboratory Tests on Soil Samples
Site Map

09-0982SCSP RPT LS Rev00

Table 1 - Soil Resistivity Field Tests

Southern California Edison
Lakeview Substation
SA #09-0982SCSP
30-Nov-09

LOCATION	DEPTH (feet)	MEASURED RESISTANCE (ohms)	AVERAGE RESISTIVITY TO DEPTH (ohm-cm)	STRATUM RESISTIVITY (ohm-cm)
R1				3,447
NE Corner of Site	1.0	18	3,447	
N/S orientation				8,618
	1.5	15	4,309	
				7,900
	2.5	11	5,267	
				4,389
	5.0	5.0	4,788	
				4,070
	7.0	3.4	4,558	
				2,791
	10	2.0	3,830	
				2,341
	15	1.1	3,160	
				1,572
	25	0.47	2,250	
				1,275
	50	0.17	1,628	
				1,953
	75	0.12	1,724	
				1,193
	100	0.08	1,551	
				456
	150	0.03	862	

Table 1 - Soil Resistivity Field Tests

Southern California Edison
Lakeview Substation
SA #09-0982SCSP
30-Nov-09

LOCATION	DEPTH (feet)	MEASURED RESISTANCE (ohms)	AVERAGE RESISTIVITY TO DEPTH (ohm-cm)	STRATUM RESISTIVITY (ohm-cm)
R2				3,639
NE Corner of Site	1.0	19	3,639	
E/W orientation				9,703
	1.5	16	4,596	
				5,107
	2.5	10	4,788	
				3,467
	5.0	4.2	4,022	
				3,589
	7.0	2.9	3,888	
				2,360
	10	1.7	3,256	
				1,920
	15	0.92	2,643	
				1,082
	25	0.35	1,676	
				670
	50	0.10	958	
				5,506
	75	0.09	1,321	
				4,625
	100	0.08	1,609	
				1,275
	150	0.05	1,479	

Table 2 - Laboratory Tests on Soil Samples

Southern California Edison
Lakeview Substation
SA #09-0982SCSP
1-Dec-09

Sample ID			Soil
Resistivity		**Units**	
as-received		ohm-cm	33,600
saturated		ohm-cm	2,360
pH			7.1
Electrical Conductivity		mS/cm	0.21
Chemical Analyses			
Cations			
calcium	Ca^{2+}	mg/kg	91
magnesium	Mg^{2+}	mg/kg	16
sodium	Na^{1+}	mg/kg	111
potassium	K^{1+}	mg/kg	36
Anions			
carbonate	CO_3^{2-}	mg/kg	ND
bicarbonate	HCO_3^{1-}	mg/kg	168
flouride	F^{1-}	mg/kg	0.6
chloride	Cl^{1-}	mg/kg	72
sulfate	SO_4^{2-}	mg/kg	98
phosphate	PO_4^{3-}	mg/kg	35
Other Tests			
ammonium	NH_4^{1+}	mg/kg	7.6
nitrate	NO_3^{1-}	mg/kg	50
sulfide	S^{2-}	qual	na
Redox		mV	na

Electrical conductivity in millisiemens/cm and chemical analysis were made on a 1:5 soil-to-water extract.
mg/kg = milligrams per kilogram (parts per million) of dry soil.
Redox = oxidation-reduction potential in millivolts
ND = not detected
na = not analyzed

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Site Map: Lakeview Substation

APPENDIX G

LAKEVIEW SUBSTATION NOISE MEASUREMENTS

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Appendix E

Project-Generated Construction Source Noise Prediction Model

Lakeview PEA

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	852	55.0
	50	85.8
	100	77.9
	150	73.2
	200	69.9
	250	67.4
	300	65.3
	350	63.5
	400	62.0
	450	60.7
	500	59.5
	550	58.4
	600	57.4

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Dozer	85	0.4
Grader	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Dozer	81.0
Grader	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.8

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Appendix E

Project-Generated Construction Source Vibration Prediction Model

Lakeview Substation

Location	Distance to Nearest Receiver in feet	Predicted Vibration Level (PPV)		Predicted Vibration Level (VdB)		Equipment	Reference Distance	PPV at 25 feet (in/sec)[1]	Approximate Lv (VdB) at 25 feet[2]
		Bulldozer	Trucks	Bulldozer	Trucks				
CA Threshold (0.08 PPV)	**70**	**0.019**	**0.016**			Bulldozer	25	0.089	87
CA Threshold (80VdB)	**70**			**74**	**72**	Trucks	25	0.076	86

Notes:

[1] Where PPV is the peak particle velocity

[2] Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.

Source: Caltrans 2002, FTA 2006