1 **5.3 AIR QUALITY**

2 **5.3.1** Introduction

- Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed,
- wind direction, and air temperature gradients interact with the physical features of the landscape
- 6 in these areas to determine the movement and dispersal of air pollutants, and consequently affect
- 7 air quality. This section addresses issues related to air pollutant emissions, including "criteria air
- 8 pollutants" and "toxic air contaminants." Criteria air pollutants refer to those pollutants that are
- 9 pervasive in urban environments and for which health-based state or national ambient air quality
- 10 standards have been established. Toxic air contaminants refer to those pollutants that occur a
- relatively low concentrations and are associated with carcinogenic and other adverse health effects,
- but for which no ambient air quality standards have been established. This setting section
- provides an overview of the regulatory context followed by region-specific information related to
- climate and topography; plans, policies, and regulations; and existing air quality conditions.

15 **5.3.2 Regulatory Setting**

Criteria Air Pollutants

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- 17 Regulation of air pollution is achieved through both national and state ambient air quality
- standards and emissions limits for individual sources of air pollutants. The federal Clean Air Act
- requires the U.S. Environmental Protection Agency (U.S. EPA) to identify National Ambient Air
- 20 Quality Standards (national standards) to protect public health and welfare. National standards
- 21 have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate
- matter, and lead. These pollutants are called "criteria" air pollutants because standards have been
- established for each of them to meet specific public health and welfare criteria. California has
- 24 adopted more stringent ambient air quality standards for most of the criteria air pollutants
- 25 (referred to as state Ambient Air Quality Standards or state standards). Table 5.3-1 presents both
- sets of ambient air quality standards (i.e., national and state) and provides a brief discussion of the
- 27 related heath effects and principal sources of each pollutant.
- Under amendments to the federal Clean Air Act, U.S. EPA has classified air basins, or portions
- thereof, as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether
- 30 the national standards have been achieved. In 1988, the State Legislature passed the California
- 31 Clean Air Act, which is patterned after the federal Clean Air Act to the extent that areas are
- 32 required to be designated as attainment or nonattainment for the state standards, rather than the
- 33 national standards. Thus, areas in California have two sets of attainment / nonattainment
- designations: one set with respect to the national standards and one set with respect to the state
- 35 standards.

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Table 5.3-1. State and National Criteria Air Pollutant Standards, Effects, and Sources

| | Averaging | State | National | Pollutant Health and | |
|-----------------------|--------------------------|----------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pollutant | Time | Standard | Standard | Atmospheric Effects | Major Pollutant Sources |
| Ozone | 1 hour | 0.09 ppm | 0.12 ppm | High concentrations can directly affect lungs, causing irritation. Longterm exposure may cause damage to lung tissue. | Formed when reactive organic gases (ROG) and nitrogen oxides (NOx) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/industrial mobile equipment. |
| Carbon Monoxide | 1 hour 8 hours | 20 ppm 9.0 ppm | 35 ppm 9 ppm | Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen. | Internal combustion engines, primarily gasoline-powered motor vehicles. |
| Nitrogen Dioxide | 1 hour Annual Avg. | 0.25 ppm | 0.053 ppm | Irritating to eyes and respiratory tract. Colors atmosphere reddishbrown. | Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads. |
| Sulfur | 1 hour | 0.25 ppm | | Irritates upper respiratory | Fuel combustion, chemical |
| Dioxide | 3 hours | | 0.5 ppm | tract; injurious to lung | plants, sulfur recovery plants, |
| | 24 hours | 0.04 ppm | 0.14 ppm | tissue. Can yellow the | and metal processing. |
| | Annual Avg. | | 0.03 ppm | leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight. | |
| Respirable | 24 hours | 50 ug/m ³ | 150 ug/m ³ | May irritate eyes and | Dust and fume-producing |
| Particulate Matter | Annual Avg. | 30 ug/m ³ | 50 ug/m ³ | respiratory tract, decreases in lung capacity, cancer | industrial and agricultural operations, combustion, |
| (PM ₁₀) | Annual Avg. | | 15 ug/m³ | and increased mortality. Produces haze and limits visibility. | atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays). |
| Lead | Monthly Quarterly | 1.5 ug/m³ | 1.5 ug/m³ | Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction. | Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline. |

Note: ppm = parts per million; ug/m³ = micrograms per cubic meter.

Sources: SCAQMD. 1996. 1997 Air Quality Management Plan. November. http://www.arb.ca.gov/health/health.htm.

- 1 The federal Clean Air Act also requires nonattainment areas to prepare air quality plans that
- 2 include strategies for achieving attainment. Air quality plans developed to meet federal
- 3 requirements are referred to as State Implementation Plans (SIPs). The state California Clean Air
- 4 Act also requires plans for nonattainment areas with respect to the state standards. Thus, just as
- 5 areas in California have two sets of designations, many also have two sets of air quality plans: one
- 6 to meet federal requirements relative to the national standards and one to meet state requirements
- 7 relative to the state standards.

Toxic Air Contaminants

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- 9 Toxic air contaminants are less pervasive in the urban atmosphere than the criteria air pollutants,
- but are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health
- 11 effects. There are hundreds of different types of toxic air contaminants, with varying degrees of
- 12 toxicity. Sources of toxic air contaminants include industrial processes, commercial operations
- 13 (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.
- 14 Toxic air contaminants have been regulated under federal air quality law since the 1977 federal
- 15 Clean Air Act Amendments. The most recent federal Clean Air Act Amendments (1990) reflect a
- technology-based approach for reducing toxic air contaminants. The first phase involves requiring
- facilities to install Maximum Achievable Control Technology (MACT). The MACT standards vary
- depending on the type of emitting source. U.S. EPA has established MACT standards for over 20
- facilities or activities, such as perchloroethylene dry cleaning and petroleum refineries. The second
- 20 phase of control involves determining the residual health risk represented by air toxics emissions
- sources after implementation of MACT standards.
- 22 Two principal laws provide the foundation for state regulation of toxic air contaminants from
- stationary sources. In 1983, the State Legislature adopted Assembly Bill 1807, which established a
- 24 process for identifying toxic air contaminants and providing the authority for developing retrofit
- 25 air toxics control measures on a statewide basis. The current list of toxic air contaminants includes
- 26 approximately 200 compounds, including all of the toxics identified under federal law plus
- 27 additional compounds, such as particulate emissions from diesel-fueled engines, which was added
- in 1998. Air toxics from stationary sources in California are also regulated under Assembly Bill
- 29 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under Assembly Bill
- 30 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by
- the regional air quality management district or county air pollution control district. High priority
- facilities are required to perform a health risk assessment, and if specific thresholds are violated,
- they are required to communicate the results to the public in the form of notices and public
- meetings. Depending on the risk level, emitting facilities can be required to implement varying
- 35 levels of risk reduction measures.
- 36 The regulatory approach differs between stationary sources and mobile sources of toxic air
- 37 contaminants. The approach to regulation of toxic air contaminants from mobile sources has been
- through establishment (by U.S. EPA and the state Air Resources Board) of emissions standards for
- motor vehicles (imposed on vehicle manufacturers) and through specifications for gasoline and
- diesel fuel sold in California (imposed on fuel refineries and retailers), rather than through air
- 41 quality permits or regulations on how motor vehicles are used by the general public.

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Regulatory Agencies

2 U.S. EPA is responsible for implementing the myriad of programs established under the federal Clean Air Act, such as establishing and reviewing the national ambient air quality standards and 3 judging the adequacy of State Implementation Plans, but has delegated the authority to implement 4 5 many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented. The Air Resources Board, California's air quality 6 management agency, is responsible for establishing and reviewing the state ambient air quality 7 standards, compiling the California State Implementation Plan and securing approval of that plan 8 from U.S. EPA, and identifying toxic air contaminants. The state Air Resources Board also 9 regulates mobile emissions sources in California, such as construction equipment, trucks, and 10 automobiles, and oversees the activities of air quality management districts, which are organized 11 at the county or regional level. The county or regional air quality management districts are 12 primarily responsible for regulating stationary emissions sources at industrial and commercial 13 facilities within their geographic area and for preparing the air quality plans that are required 14 under the federal Clean Air Act and state California Clean Air Act. 15

5.3.3 San Francisco Bay Area Network

Climate and Topography

- 18 The San Francisco Bay Area Network would be located in the San Francisco Bay Area Air Basin (Bay Area), which is characterized by coast mountain ranges, inland valleys, and bays. The climate 19 20 of the Bay Area is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the west coast of North America. High-pressure systems are 21 characterized by an upper layer of dry air that warms as it descends, restricting the mobility of 22 cooler marine-influenced air near the ground surface, and resulting in the formation of subsidence 23 inversions. In winter, the Pacific high pressure system shifts southward, allowing storms to pass 24 through the region. During summer and fall, emissions generated within the Bay Area can 25 26 combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, 27
- such as ozone and secondary particulates, such as sulfates and nitrates.

Air Quality Plans, Policies and Regulations

- 30 Criteria Air Pollutants
- 31 PLANS AND POLICIES
- 32 The Bay Area is currently designated nonattainment for state and national ozone standards and for
- the state PM10 standard (Air Resources Board 1999). Urbanized areas within the Bay Area are also
- designated as a "maintenance" area for the national carbon monoxide standard. The maintenance
- designation denotes that the area, now attainment, had once been designated as nonattainment.
- The Bay Area is attainment or "unclassified" with respect to the other ambient air quality
- 37 standards.
- As noted above, the federal Clean Air Act and the state California Clean Air Act require plans to be
- 39 developed for areas designated as nonattainment (with the exception of areas designated as
- 40 nonattainment for the state PM10 standard). Plans are also required under federal law for areas

- designated as "maintenance" for national standards. Such plans are to include strategies for
- 2 attaining the standards. There are currently four applicable air quality plans for the Bay Area: two
- 3 related to the national ozone standard, one related to the state ozone standard, and one related to
- 4 the national carbon monoxide standard. These plans include the Ozone Attainment Plan for the
- 5 1-Hour National Ozone Standard (Association of Bay Area Governments [ABAG], BAAQMD, and
- 6 MTC 1999), which was developed to meet federal ozone air quality planning requirements and
- which, when approved by U.S. EPA, will replace the current ozone SIP, the Ozone Maintenance Plan
- 8 (ABAG, BAAQMD, and MTC 1994a). The Bay Area '97 Clean Air Plan (Bay Area Air Quality
- 9 Management District [BAAQMD] 1997) was developed to meet planning requirements related to
- the state ozone standard. The Carbon Monoxide Maintenance Plan (ABAG, BAAQMD, and MTC
- 11 1994b) was developed to ensure continued attainment of the national carbon monoxide standard.

12 RULES AND REGULATIONS

- 13 The regional agency primarily responsible for developing air quality plans for the Bay Area is the
- 14 BAAQMD, the agency with permit authority over most types of stationary emission sources in the
- Bay Area. BAAQMD exercises permit authority through its Rules and Regulations. Both federal
- and state ozone plans rely heavily upon stationary source control measures set forth in
- 17 BAAQMD's *Rules and Regulations*. The overall stationary source control program that is embodied
- by the BAAQMD *Rules and Regulations* has been developed such that new stationary sources can be
- allowed to operate in the Bay Area without obstructing the goals of the regional air quality plans.
- To accomplish this objective, many new stationary sources are required to install Best Available
- 21 Control Technology (BACT) and to provide offsets at a greater than 1:1 ratio in order to secure a
- 22 permit to operate from the BAAQMD. Other stationary sources have been deemed too minor to
- 23 require a permit, BACT or offsets. For example, BAAQMD Regulation 1, Rule 1-110.2, exempts
- 24 any internal combustion engine used solely as an emergency standby source of power from all
- 25 BAAQMD regulations, including the requirement to secure a permit to operate.
- In contrast to the ozone plans, the Carbon Monoxide Maintenance Plan relies heavily on mobile
- 27 source control measures. Once constructed, the project would generate essentially no mobile
- source emissions, so it would have no effect on continued attainment of the national carbon
- 29 monoxide standard.

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- 30 Toxic Air Contaminants
- To reduce public exposure to toxic air contaminants from stationary sources in the Bay Area,
- 32 BAAQMD administers the Bay Area's Toxic Air Contaminant Control Program, which involves
- 33 reviewing new stationary sources to ensure compliance with required emission controls and limits,
- maintaining an inventory of existing stationary sources of toxic air contaminants, and developing
- new rules and regulations to reduce toxic air contaminant emissions.

Existing Air Quality Conditions

- 37 BAAQMD operates a regional air quality monitoring network that provides information on
- ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations
- 39 reflect the number and strength of emissions sources and the influence of topographical and
- 40 meteorological factors. Table 5.3-2 is a summary of regional monitoring data collected over the
- 41 past 4 years for those pollutants for which the Bay Area is, or has been, designated nonattainment.
- 42 As shown in Table 5.3-2, the regional monitoring network has recorded violations of the state

- ozone standard on an average of approximately 25 days per year over the past 4 years. Coastal
- 2 monitoring stations, such as those in San Francisco, Oakland, and San Rafael, record the fewest
- 3 violations while inland valley stations, such as those in Livermore, Concord, and Gilroy, record the
- 4 most violations. Violations of the national 1-hour ozone standard occur less frequently: on
- 5 approximately 7 days per year. Table 5.3-2 also shows that no violations of the carbon monoxide
- standard have been recorded over the past 4 years. With respect to PM10, the regional monitoring
- 7 network records violations of the state 24-hour standard relatively frequently (approximately 5
- 8 percent of the time, which is equivalent to approximately 18 days per year).

5.3.4 Los Angeles Basin Network

Climate and Topography

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- 11 The Los Angeles Basin Network would be located in the South Coast Air Basin (South Coast),
- which is characterized by a coastal plain with connecting broad valleys and low hills, bounded by
- the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The
- climate of the South Coast is determined largely by a high-pressure system that is almost always
- present over the eastern Pacific Ocean off the west coast of North America. Generally, the South
- 16 Coast experiences a mild climate tempered by cool sea breezes with light average wind speeds.
- 17 This mild pattern is interrupted occasionally by periods of extremely hot weather, winter storms,
- or Santa Ana winds. Subsidence inversions occur frequently over the South Coast, contributing
- with strong sunlight and the restraining influence of topography to conditions that are conducive
- 20 for the formation of photochemical pollutants.

21 Air Quality Plans, Policies, and Regulations

- 22 Criteria Air Pollutants
- 23 PLANS AND POLICIES
- 24 The South Coast is currently designated as a nonattainment area for state and national ambient air
- 25 quality standards for ozone and PM10 (Air Resources Board 1999). The South Coast is also a
- 26 nonattainment area for the national carbon monoxide standard and a maintenance area for the
- 27 national nitrogen dioxide standard, which denotes that it had once been a nonattainment area for
- that pollutant standard as well.
- 29 The federal Clean Air Act and the state California Clean Air Act require plans to be developed for
- areas designated as nonattainment (with the exception of areas designated as nonattainment for
- 31 the state PM10 standard). Plans are also required under federal law for areas designated as
- 32 maintenance for national standards. Such plans are to include strategies for attaining (or
- maintaining) the standards. For the South Coast, current federal and state air quality planning
- requirements have been consolidated into a single plan, the 1997 Air Quality Management Plan
- 35 (1997 AQMP) (SCAQMD 1996), which is the latest in a series of plans that have been developed
- over the past several decades.
- 37 Ozone. With respect to the national ozone standard, the South Coast has been further classified
- pursuant to the federal Clean Air Act Amendments of 1990 as an "extreme" nonattainment area.

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Table 5.3-2. Summary of Monitoring Data for the San Francisco Bay Area Air Basin, 1995–1998

| | State Standard | National Standard | Pollutant Concentration by Year | | | | |
|-------------------------------------------|-------------------|----------------------|---------------------------------|------|------|------|--|
| Pollutant | | | 1995 | 1996 | 1997 | 1998 | |
| Ozone | | • | | | | | |
| Highest 1-hour average (ppm) ^b | 0.09 | 0.12 | 0.16 | 0.14 | 0.11 | 0.15 | |
| Days over State Standard | | | 28 | 34 | 8 | 29 | |
| Days over National Standard | | | 11 | 8 | 0 | 8 | |
| Carbon Monoxide | | | | | | | |
| Highest 8-hour average (ppm) | 9.0 | 9 | 5.8 | 7.0 | 6.1 | 6.3 | |
| Days over Standard | | | 0 | 0 | 0 | 0 | |
| Respirable Particulate Matter (PM10) | | | | | | | |
| Highest 24-hour average (µg/m³) b | 50 | 150 | 74 | 76 | 95 | 92 | |
| Number of sample-days ^c | | | 89 | 88 | 81 | NA | |
| Days over State Standard | | | 7 | 3 | 4 | 5 | |
| Days over National Standard | | | 0 | 0 | 0 | 0 | |
| Highest annual average (μg/m³) | 30 | 50 | 28 | 25 | 26 | 23 | |

Note: **Bold** values are in excess of the applicable standard. NA = Not Applicable or Available.

Source: Air Resources Board, Summary of Air Quality Data, Gaseous and Particulate Pollutants, 1995, 1996, 1997;

http://www.arb.ca.gov/adam.

Extreme ozone nonattainment areas must demonstrate attainment within 20 years of enactment The ozone strategy included in the 1997 AQMP builds upon a regulatory foundation established over the last several decades to improve air quality conditions in the South Coast. One of the key elements of the ozone strategy is a program referred to as New Source Review (NSR), which is a program that new and modified stationary sources undergo to secure a permit from the regional air district. The NSR program established by regional air quality management district meets the requirements for areas designated as extreme ozone nonattainment and requires new sources to install BACT and, in many cases, offsets to reduce overall stationary source emissions of ozone precursors. (Ozone precursors include volatile organic compounds [VOC] and nitrogen oxides [NOx].) The 1997 AQMP carries forward a number of control measures identified in previous plans related to specific categories of stationary sources, on-road mobile sources, and off-road mobile sources. The 1997 AQMP predicts that the control strategy will attain the national ozone standard by 2010 but does not include an attainment date for the more stringent state ozone standard. In December 1999, the ozone strategy of the 1997 AQMP was amended to include additional control measures and to accelerate the effective dates of other measures. U.S. EPA is proposing to approve this amended ozone strategy (U.S. EPA 2000).

18 *PM10.* Pursuant to the federal Clean Air Act Amendments of 1990, the South Coast has been designated as a "serious" PM10 nonattainment area for the national PM10 standard. The 1997

a This table summarizes the data from all of the monitoring stations within the Bay Area.

b ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

c PM10 is not measured every day of the year. The number of sample-days refers to the number of days in a given year during which PM10 was measured at one or more monitoring stations in the Bay Area.

- 1 AQMP serves as the PM10 Attainment Demonstration Plan. This PM10 plan relies upon control of
- 2 area sources, known as "fugitive" dust sources, such as construction sites, heavily traveled
- 3 publicly maintained unpaved roads, and agricultural activities. To regulate such sources in the
- 4 South Coast, the regional air district has adopted Rule 403 (Fugitive Dust). The purpose of Rule
- 5 403 is to implement the fugitive dust control measures in the applicable federal PM10 Plan. The
- 6 PM10 attainment strategy set forth in the 1997 AQMP relies upon implementation of more
- 7 stringent Best Available Control Measures (BACM) for sources of fugitive dust than has been
- 8 required in the past. The 1997 AQMP predicts that the national PM10 standard will be attained by
- 9 2006.
- 10 Carbon Monoxide. The South Coast is designated as a serious nonattainment area for the national
- carbon monoxide standard. The 1997 AQMP serves as the Carbon Monoxide Attainment
- 12 Demonstration Plan. The carbon monoxide attainment strategy depends upon stationary-source
- 13 NSR requirements, increasingly stringent mobile-source tailpipe emissions standards, and
- 14 oxygenated gasoline fuel specifications. Carbon monoxide emissions have been substantially
- reduced over the past decade, and the 1997 AQMP predicts that the national carbon monoxide
- standard will be attained throughout the South Coast by 2000.
- 17 Nitrogen Dioxide. In July 1998, the South Coast was redesignated by U.S. EPA from nonattainment
- to unclassified/attainment for the national nitrogen dioxide standard. As such, the Air Basin
- became a maintenance area for that standard, and the 1997 AQMP serves as the Nitrogen Dioxide
- 20 Maintenance Plan of the South Coast. Maintenance of the nitrogen dioxide standard will depend
- 21 upon continued implementation of the NSR program for stationary sources, reductions in mobile-
- source emissions, as well as new control measures that are included as part of the ozone
- 23 attainment strategy.
- 24 RULES AND REGULATIONS
- 25 The regional agency responsible for developing these plans is SCAQMD, the agency with permit
- authority over most types of stationary sources in the South Coast. SCAQMD exercises permit
- 27 authority through its Rules and Regulations, which has evolved to reflect state and federal
- requirements for extreme ozone nonattainment areas. Under SCAQMD's Rules and Regulations,
- 29 new stationary sources must secure a permit to construct (Rule 201) and a permit to operate (Rule
- 30 203) and must comply with NSR requirements (set forth in SCAQMD Regulation XIII). NSR sets
- forth pre-construction review requirements for new, modified, or relocated facilities to ensure that
- 32 the operation of such facilities does not interfere with progress in attainment of state and national
- ambient air quality standards and that future economic growth within the South Coast is not
- unnecessarily restricted. The specific air quality goal of NSR is to achieve no net increases of
- 35 nonattainment pollutants or their precursors from new or modified permitted sources.
- 36 Toxic Air Contaminants
- 37 SCAQMD regulates stationary sources of toxic air contaminants under their Regulation XIV
- 38 (Toxics and other Non-Criteria Pollutants). SCAQMD Rule 1401 sets forth requirements for new
- 39 stationary sources of such pollutants.

1 Existing Air Quality Conditions

- 2 SCAQMD operates a regional air quality monitoring network that provides information on
- 3 ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations
- 4 reflect the number and strength of emissions sources and the influence of topographical and
- 5 meteorological factors. Table 5.3-3 is a summary of regional monitoring data collected over the
- 6 past 4 years for those pollutants for which the South Coast is, or has been, designated
- 7 nonattainment.

Table 5.3-3. Summary of Monitoring Data for the South Coast Air Basin, 1995–1998

| | State Standard | National Standard | Pollutant Concentration by Year ^a | | | |
|-------------------------------------------|-------------------|----------------------|----------------------------------------------|-------|-------|-------|
| Pollutant | | | 1995 | 1996 | 1997 | 1998 |
| Ozone | · | | | | | |
| Highest 1-hour average (ppm) ^b | 0.09 | 0.12 | 0.26 | 0.24 | 0.21 | 0.24 |
| Days over State Standard | | | 153 | 141 | 144 | 107 |
| Days over National Standard | | | 98 | 85 | 64 | 60 |
| Carbon Monoxide | | | | | | |
| Highest 8-hour average (ppm) | 9.0 | 9 | 13.9 | 17.4 | 17.1 | 13.3 |
| Days over Standard | | | 19 | 21 | 14 | 13 |
| Nitrogen Dioxide | | | | | | |
| Highest 1-hour average (ppm) | 0.25 | NA | 0.24 | 0.24 | 0.31 | 0.26 |
| Days over State Standard | | | 0 | 0 | 1 | 1 |
| Highest annual average (ppm) | NA | 0.053 | 0.038 | 0.035 | 0.032 | 0.043 |
| Respirable Particulate Matter (PM10) | | | | | | |
| Highest 24-hour average (μg/m³) b | 50 | 150 | 219 | 162 | 227 | 116 |
| Number of sample-days ^c | | | 88 | 79 | 79 | NA |
| Days over State Standard | | | 51 | 51 | 54 | 42 |
| Days over National Standard | | | 6 | 1 | 4 | 0 |
| Highest annual average (μg/m³) | 30 | 50 | 69 | 61 | 65 | 56 |

Note: **Bold** values are in excess of applicable standard. NA = Not Applicable or Not Available.

Source: Air Resources Board, Summary of Air Quality Data, Gaseous and Particulate Pollutants, 1995, 1996, 1997; http://www.arb.ca.gov/adam.

- 8 As shown in Table 5.3-3, the regional monitoring network has recorded violations of the state
- 9 ozone standard on an average of approximately 136 days per year over the past 4 years. Coastal
- monitoring stations, such as those in western Los Angeles County and Orange County, record the
- 11 fewest violations while inland stations, such as those in eastern Riverside County and

a This table summarizes data from monitoring stations within the SCAB.

b ppm, parts per million; μg/m3, micrograms per cubic meter.

c PM10 is not measured every day of the year. The number of sample-days refers to the number of days in a given year during which PM10 was measured at one or more monitoring stations in the SCAB.

- southwestern San Bernardino County, record the most violations. Violations of the national 1-hour
- 2 ozone standard occur less frequently, on approximately 77 days per year.
- 3 Table 5.3-3 also shows that carbon monoxide standards have been violated on an average of 17
- 4 days per year over the past 4 years. All of the violations of the carbon monoxide standard over the
- 5 past 4 years have been recorded at stations in Los Angeles County. With respect to nitrogen
- 6 dioxide, violations of the ambient standard are very rare. Finally, the regional monitoring network
- 7 records violations of the state 24-hour PM10 standard on a regular basis (approximately 64 percent
- 8 of the time, which is equivalent to approximately 230 days per year).