

## C.2 NOISE

This section addresses the environmental setting and impacts related to the construction and operation of the Proposed Project. Specifically, Section C.2.1 provides a description of the environmental baseline and regulatory setting, followed by an environmental impacts analysis of the Proposed Project in Section C.2.2.

### C.2.1 ENVIRONMENTAL BASELINE AND REGULATORY SETTING

#### C.2.1.1 Environmental Baseline

##### General Characteristics of Community Noise

To describe noise environments and to assess impacts on noise sensitive areas, a frequency weighting measure which simulates human perception is customarily used. It has been found that *A-weighting* of sound intensities best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. Figure C.2-1 provides an illustration of a typical range of common sounds heard in the environment.

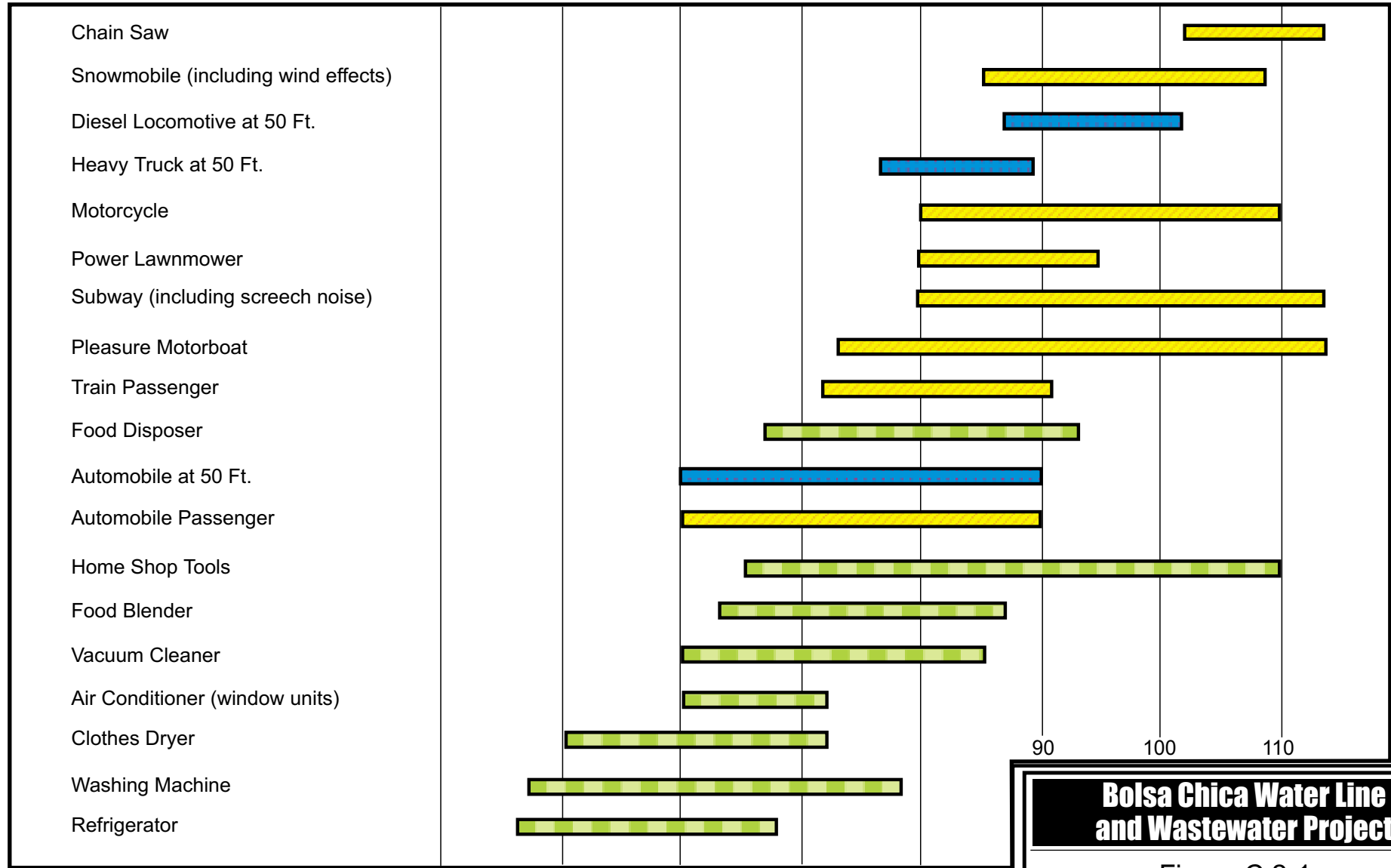
Noise environments and consequences of human activities are usually well represented by an equivalent A-weighted sound level over a given time period (Leq)<sup>1</sup>, or by average day and night noise levels with a nighttime increase of 10 dBA (Ldn)<sup>2</sup>. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. As illustrated in Figure C.2-2, outdoor day-night sound (Ldn) levels vary over 50 dBA depending on the specific type of land use. In wilderness areas, the Ldn noise levels average approximately 35 dBA, 50 dBA in small towns or wooded residential areas, 75 dBA in major metropolis downtown (e.g., Los Angeles) areas, and 85 dBA near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse levels of noise to public health.

Various environments can be characterized by levels that are generally considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding average daytime levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Areas with full-time human occupation that are

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<sup>1</sup>The Equivalent Sound Level (Leq) is a single value of sound level for any desired duration, which includes all of the time-varying sound energy in the measurement period.

<sup>2</sup>Day-night average sound level that is equal to the 24 hour A-weighted equivalent sound level with a 10 decibel penalty applied to nighttime levels.



40 50 60 70 80  
Maximum A-Weighted Sound Level in dB

**MEASUREMENT LOCATION**

- Outdoors
- Operator/Passenger
- In Home

Source: USEPA, 1978. Protective Noise Levels  
Condensed Version of EPA Levels Document

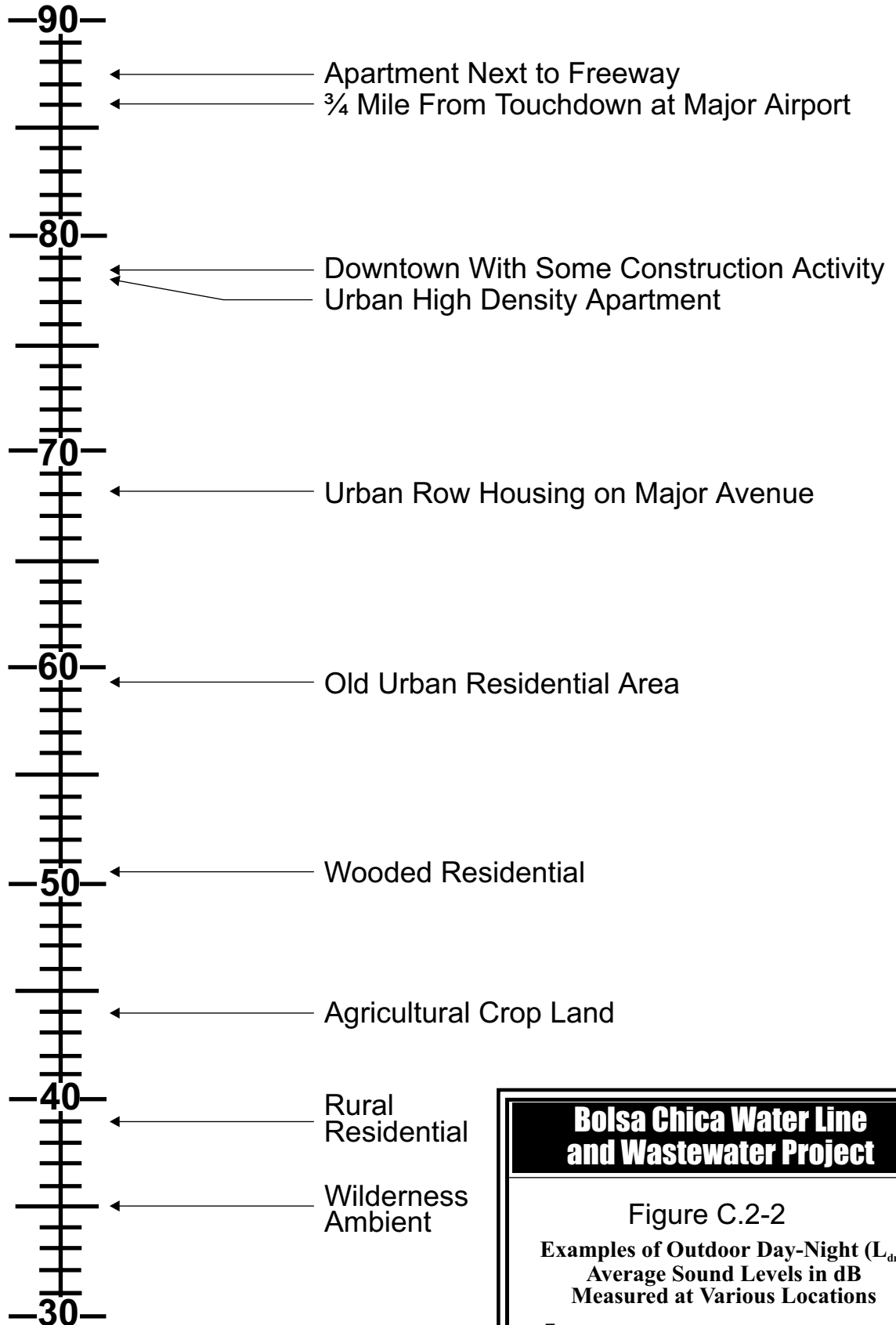
**Bolsa Chica Water Line  
and Wastewater Project**

Figure C.2-1  
**Typical Range  
of Common Sounds**

**Aspen**  
Environmental Group

$L_{dn}$  in dB

# Outdoor Location



## Bolsa Chica Water Line and Wastewater Project

Figure C.2-2  
Examples of Outdoor Day-Night ( $L_{dn}$ )  
Average Sound Levels in dB  
Measured at Various Locations

**Aspen**  
Environmental Group

Source: USEPA, 1978. Protective Noise Levels  
Condensed Version of EPA Levels Document

subject to nighttime noise, which does not decrease relative to daytime levels are often considered objectionable. Noise levels above 45 dBA at night can result in the onset of sleep interference effects (USEPA, 1971). At 70 dBA, sleep interference effects become considerable.

### Noise Environment in the Project Area

The primary noise source in the project area is traffic noise from the major streets and freeways serving the subject area (see Figure C.3-1 for an illustration of the regional roadways in and near the study area). Secondary noise sources include noise from commercial and institutional activities (e.g., truck deliveries, school bells, playground activities, air conditioning devices, and blowers), and residential noise (e.g., passenger vehicles, air conditioners, and landscape maintenance).

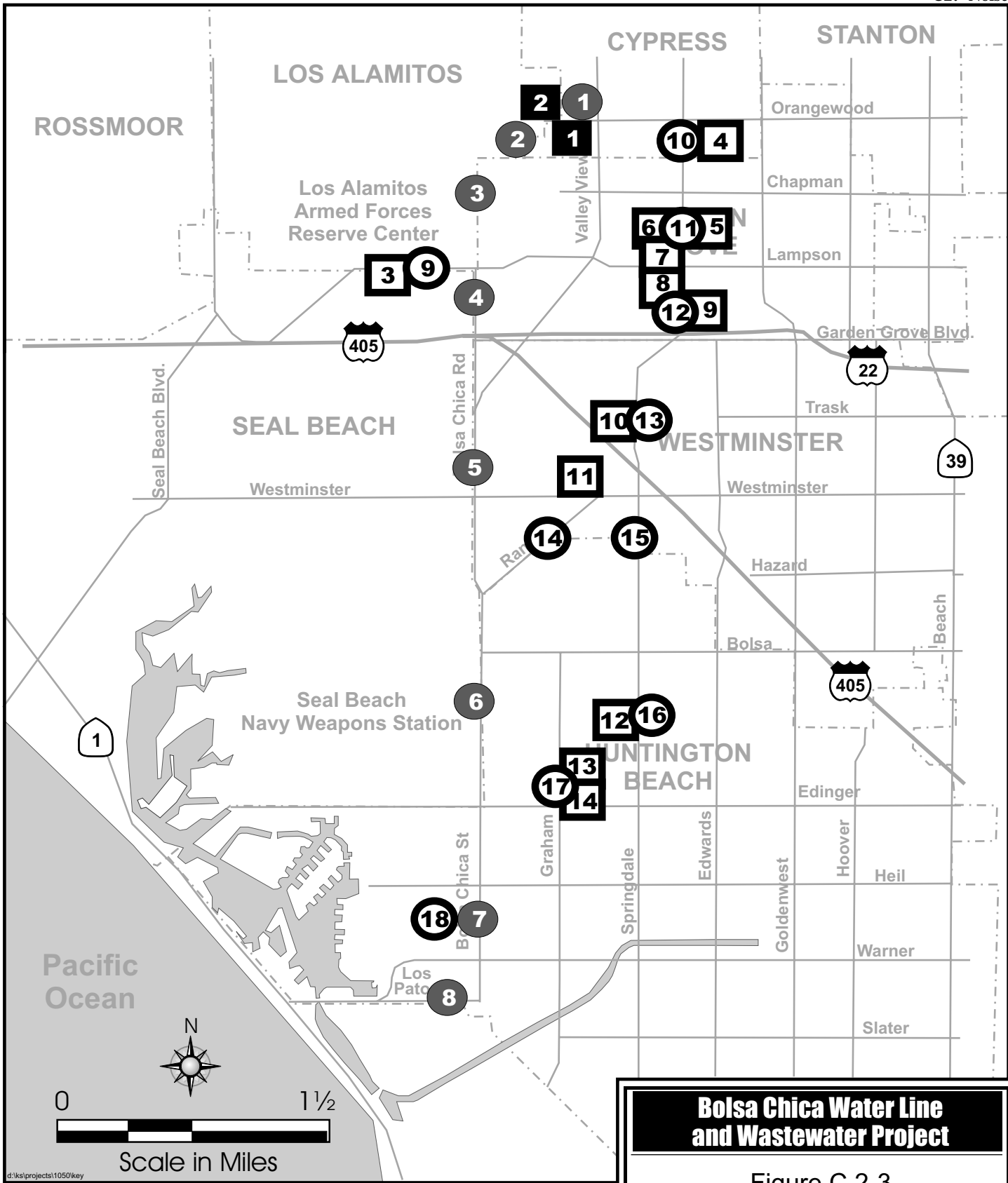
The existing ambient noise levels vary greatly along the proposed route alignment. These noise level variations are primarily related to the type of adjacent land use, the proximity of specific noise sources (e.g., vehicles along streets and highway), and traffic volumes along adjacent roadways.

Noise measurements were recorded at eight locations along the proposed pipeline alignment. Table C.2-2 provides the ambient noise data measured along the proposed pipeline route, while Figure C.2-3, illustrates the locations of the measurements. Noise conditions are described in terms of: Equivalent Sound Level ( $L_{eq}$ ), a measurement that accounts for the moment-to-moment fluctuations due to all sound sources during the measurement period (in this case 10 to 20 minutes), combined; the maximum sound level ( $L_{max}$ ) reached during the sampling period; and the minimum sound level ( $L_{min}$ ) reached during the sampling period.

**Table C.2-2 Measured Ambient Noise Levels along the Proposed Pipeline Route**

#	Description	Survey Time	Leq	Max	Min	Notes
1	Corner of Samoa Street and Orangewood Ave.	9:45 a.m.	54.3	68.4	41.8	Location is adjacent to Eucalyptus Park, light traffic was noted on Orangewood Ave.
2	Navy Golf Course, along cart path	10:30 a.m.	56.8	71.8	41.1	Helicopters and small planes were noted tacking off and landing at the airport on the west side of the golf course, single family residential units are immediately west of the sample location.
3	East side of Bolsa Chica Channel, approximately one quarter mile north of Lampson Ave.	1:50 p.m.	57.0	75.2	45.2	Across the channel to the east is the south end of the Navy Golf Course, immediately east are single family residential units.
4	East side of Bolsa Chica Channel, approximately one quarter mile south of Lampson Ave.	1:35 p.m.	57.3	74.8	48.6	Single family residential units are adjacent to the channel on both of its sides (west and east).
5	East side of Bolsa Chica Road at Loyola Ave.	2:15 p.m.	75.7	93.9	53.1	Single family residential units are adjacent to the east side of Bolsa Chica Rd; heavy traffic was noted on Bolsa Chica Rd. Maximum sound level was from a sports car accelerating by.
6	East side of Bolsa Chica Road at McFadden Ave.	2:40 p.m.	71.9	86.8	52.7	Single family residential units are backed up to east side of Bolsa Chica Rd; heavy traffic was noted on Bolsa Chica Rd.
7	East side of Bolsa Chica Road south of Pierce St.	1:28 p.m.	71.9	86.8	45.6	Single family residential units are backed up to Bolsa Chica Rd. on both sides (west and east).
8	Los Patos Ave. at Lynn St.	8:35 a.m.	54.8	78.2	42.9	Single family residential units are to the north and the Bolsa Chica Planned Community Site is to the south.

Notes: All measurements are in dBA  
 $L_{eq}$ = Equivalent Sound Level, a measurement (in this case 10 to 20 minutes) that accounts for the moment-to-moment fluctuations due to all sound sources during the measurement period, combined.  
 $L_{max}$ = The maximum sound level reached during a sampling period  
 $L_{min}$ = The minimum sound level reached during a sampling period



**Bolsa Chica Water Line and Wastewater Project**

Figure C.2-3  
Monitoring and Sensitive Receptor Locations Along the Proposed and Alternative Alignments  
*Aspen Environmental Group*

PROPOSED PROJECT		ALTERNATIVE ALIGNMENTS*	
<b>1</b>	<b>Sensitive Receptors</b>	<b>9</b>	<b>Sensitive Receptors</b>
<b>2</b>	<b>Monitoring Locations</b>	<b>9</b>	<b>Monitoring Locations</b>

\* See Tables D.4-1, D.4-2, D.4-4, D.4-5, D.4-7, and D.4-8

## Sensitive Receptors

A land use survey was conducted to identify sensitive receptors along the proposed route. As described in Table C.2-3, two non-residential sensitive receptors (e.g., schools, parks, churches) were identified along the proposed pipeline route, both of which are located in residential designated land uses. Figure C.2-3 illustrates the locations of the two sensitive receptors along the proposed pipeline route.

**C.2-3 Sensitive Receptors Along the Proposed Pipeline Route**

#	Sensitive Receptor	Jurisdiction	Location Description
1	Eucalyptus Park	Cypress	Orangewood Ave. and Samoa St.
2	Navy Golf Course and Clubhouse	Cypress	The course runs adjacent to the southeast side of the Los Alamitos Armed Forces Reserve Center. The clubhouse is at the east end of Orangewood Ave.

### C.2.1.2 Regulatory Setting

#### Federal and State Standards and Regulations

There are no federal noise standards that directly regulate environmental noise from construction or operation of a pipeline project. However, it should be noted that the USEPA has developed guidelines on recommended maximum noise levels to protect public health and welfare (USEPA, 1974). Table C.2-4 provides examples of protective noise levels recommended by USEPA. With regard to noise exposure and workers, the Occupational Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise. Refer to 29 CFR Section 1910.95 (Code of Federal Regulations) for a list of permissible noise exposures.

**Table C.2-4 Summary of Noise Levels Identified as Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety**

Effect	Level	Area
Hearing Loss	Leq(24) < 70 dB	All areas
Outdoor Activity Interference and Annoyance	Ldn < 55 dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	Leq (24) < 55 dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor Activity Interference and Annoyance	Ldn < 45 dB	Indoor residential areas
	Leq(24) < 45 dB	Other indoor areas with human activities such as schools, etc.

Source: USEPA, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974.

Note: Leq (24) = Represents the sound energy averaged over a 24-hour period.  
Ldn = Represents the Leq with a 10 dB nighttime weighting.

California encourages each local government entity to perform noise studies and implement a noise element as part of their general plan. Standards and implementation are administered by the California Office of Noise Control. California Administrative Code, Title 4, has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The State land use compatibility guidelines are listed in Table C.2-5.

**Table C.2-5 Land Use Compatibility for Community Noise Environment**

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - Ldn or CNEL (db)							
	50	55	60	65	70	75	80	
Residential - Low Density Single Family, Duplex, Mobile Home	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Residential - Multi-Family	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Transient Lodging - Motel, Hotel	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Auditorium, Concert Hall, Amphitheaters	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Sports Arena, Outdoor Spectator Sports	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Office Buildings, Business Commercial and Professional	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.							
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.							
Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.							
Clearly Unacceptable	New construction or development generally should not be undertaken.							

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

### Regional and Local Regulations and Standards

The proposed pipeline alignment lies within the jurisdictions of the Cities of Cypress, Los Alamitos, Garden Grove, Seal Beach, Westminster, and Huntington Beach. These local agencies have established policies and regulations concerning the generation and control of noise that could adversely affect their citizens and noise sensitive land uses. The various policies and laws established to achieve control of adverse environmental

noise are not absolute prohibitions, but recognize the necessity and inevitability of noise associated with an urbanized technological society.

Local governments use two basic methods to promote noise/land use compatibility. One method is associated with local agency functions of planning, zoning, and the issuance of discretionary permits. The policies, guidelines, and control mechanisms are usually embodied in the noise element of the agency's general plan. This method is primarily used on projects with very long-term or permanent effects on the noise environment such as highways, manufacturing or heavy industry, airports, and transit facilities, and typically uses the average Day-Night Level (Ldn) or Community Noise Equivalent Level (CNEL) indices in A-weighted decibel (dBA) units to quantify noise levels.

In the second method, policies and performance criteria take the form of a nuisance noise control, zoning, or grading ordinance. The noise control ordinance addresses many forms of noise pollution. These are usually associated with fixed noise sources such as a noisy air compressor or car-wash machinery, but also apply to noise-producing activities which may include construction. The noise control ordinance method typically uses the Leq index in dBA units to quantify noise levels that may not be exceeded for a certain percentage of time. The ordinance may also control hours of operation or require that noise sources be equipped with special devices such as mufflers and air inlet silencers. Table C.2-6 summarizes the applicable regulations that apply to the project.

**Table C.2-6 Local Agency Ordinance Limits by Land Use**

Agency	Land Use	Ordinance Limit, Leq, (dBA)		Construction Limits*
		Interior	Exterior	
City of Cypress	Residential	55 (7 a.m. to 10 p.m.) 45 (10 p.m. to 7 a.m.)	55 - 60 (7 a.m. to 10 p.m.) 50 - 55 (10 p.m. to 7 a.m.)	7 a.m. to 7 p.m. on Weekdays; 9 a.m. to 7 p.m. on Saturday
	Commercial	---	---	
	Industrial	---	---	
City of Garden Grove	Residential	55 (7 a.m. to 10 p.m.) 45 (10 p.m. to 7 a.m.)	55 (7 a.m. to 10 p.m.) 50 (10 p.m. to 7 a.m.)	7 a.m. to 8 p.m. on Weekdays and Saturday
	Commercial	---	---	
	Industrial	---	---	
City of Westminster	Residential	55 (7 a.m. to 10 p.m.) 45 (10 p.m. to 7 a.m.)	55 (7 a.m. to 10 p.m.) 50 (10 p.m. to 7 a.m.)	7 a.m. to 8 p.m. Weekdays and Saturday
	Commercial	60 (7 a.m. to 10 p.m.) 50 (10 p.m. to 7 a.m.)	60 (7 a.m. to 10 p.m.) 55 (10 p.m. to 7 a.m.)	
City of Los Alamitos	Residential	55 (7 a.m. to 10 p.m.) 45 (10 p.m. to 7 a.m.)	55 (7 a.m. to 10 p.m.) 50 (10 p.m. to 7 a.m.)	7 a.m. to 5 p.m. on Weekdays; 8 a.m. to 5 p.m. on Saturday
	Commercial	55 (anytime)	60 (anytime)	
	Industrial	55 (anytime)	70 (anytime)	
City of Seal Beach	Residential	55 (7 a.m. to 10 p.m.) 45 (10 p.m. to 7 a.m.)	55 (7 a.m. to 10 p.m.) 50 (10 p.m. to 7 a.m.)	7 a.m. to 8 p.m. Weekdays and Saturday
	Commercial	---	65 (anytime)	
	Industrial	---	70 (anytime)	
City of Huntington Beach	Residential	55 (7 a.m. to 10 p.m.) 45 (10 p.m. to 7 a.m.)	55 (7 a.m. to 10 p.m.) 50 (10 p.m. to 7 a.m.)	7 a.m. to 8 p.m. Weekdays and Saturday
	Professional	55 (anytime)	55 (anytime)	
	Commercial	55 (anytime)	60 (anytime)	
	Industrial	55 (anytime)	70 (anytime)	

\* None of the agencies permit construction on Sunday or Federal Holidays.



## **C.2.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

Similar to Air Quality (see Section C.1.2), short-term construction impacts and long-term operational impacts usually result from a proposed project or action. According to the parameters of the Proposed Project, there will be only minor operational impacts associated with the implementation of the SCWC pipeline project (see Appendix 2). Therefore, the primary focus of this analysis was to identify the potential short-term impacts that result from construction of the subject pipeline, as described in Section B.

### **C.2.2.1 Significance Criteria**

There are two criteria for judging noise impact. First, noise levels projected for the planned facility must comply with the relevant federal, State, or local standards or regulations. Mitigation of noise impacts on worker safety and health is enforced by OSHA (by CAL OSHA in California), but effectiveness depends on the vigilance of supervisors in seeing that workers use protective gear in high noise environments. Noise impacts on the surrounding community are enforced through local noise ordinances, supported by nuisance complaints and subsequent investigation. There are no regulatory significance criteria applicable to the Proposed Project during construction or operation, but it is assumed that existing regulations would be enforced.

The second measure of impact recognized by noise analysts is the increase in noise levels above the existing ambient as a result of the introduction of a new source of noise. A change in noise level due to a new noise source can create an impact on people. The degree of impact is hard to assess because of the highly subjective character of individuals' reactions to changes in noise. Empirical studies have shown people begin to notice changes in environmental noise level around five dBA (USEPA, 1974). Thus, average changes in noise levels less than five dBA cannot be definitively considered as producing an adverse impact. For changes in level above five dBA, it is difficult to quantify the impact beyond the obvious: the greater the noise level change, the greater the impact. A judgment commonly used in community noise impact analyses associates long-term noise increases of 5 to 10 dBA with "some impact." Noise level increases of more than 10 dBA are generally considered severe. In the case of short-term noise increases, such as those from construction, the 10 dBA threshold between "some" and "severe" impact is often replaced with a criterion of 15 dBA. These noise-averaged thresholds are to be lowered when the noise level fluctuates, or the noise has an irritating character with considerable high frequency energy, or if it is accompanied by subsonic vibration. In these cases, the impact must be individually estimated.

Particularly relevant to this Environmental Impact Report (EIR) are the community guidelines, goals or ordinances that address construction noise. As shown in Table C.2-6, most of the communities specify more stringent standards during nighttime hours (typically after 10 p.m.) or provide special exemptions for some or all types of construction noise during standard weekday work hours.

For this analysis, impacts from noise would be considered significant if:

- Adopted local standards, noise element, or ordinance would be exceeded in noise level, timing, or duration
- The project would increase the ambient noise level above ordinance-specified limits for the land use zoning or by more than 3 dBA in areas already exceeding the limits
- An increase in noise levels of 15 dB or more would occur over a period of at least one-half day at a sensitive receptor at any ambient noise level; permanent increases of 10 dB would also be significant
- Long term noise would conflict with State or local guidelines, interior noise levels, and 24-hour averages, and specifically, noise levels exceeding a day-night average sound pressure level  $L_{dn}$  of 60 dBA at the nearest noise sensitive receptor (California Office of Noise Control)
- Noise increments to the ambient that are as low as 5 dB would be significant if they occur during quieter hours at night (between 10 p.m. and 7 a.m.). There is no precise threshold as the character of the noise is also important.

**C.2.2.2 Applicant’s Environmental Commitments**

In SCWC’s Proponent’s Environmental Assessment (PEA), there are numerous measures proposed that are intended to reduce the adverse impacts of the project. Outlined below are the measures (Project Design Features) that have been developed by the Applicant to reduce the project’s noise impacts (See Table C.2-7). The noise impact analysis is based on the assumption that these features and conditions would be implemented by SCWC.

**Table C.2-7 Applicant Proposed Measures for Noise**

<b>Project Design Features</b>
Residents within 500 feet of any pile driving activities shall be notified by mail as to the planned date and hours of such activities.
Construction hours shall be limited to between 7:00 a.m. and 6:00 p.m. Monday through Friday, or as regulated by each jurisdiction/agency within which construction is occurring.
All construction vehicles or equipment, fixed or mobile, operated within 1,000 feet of a dwelling unit, shall be equipped with properly operating and maintained mufflers.
During construction, best efforts shall be made to locate stockpiling and/or vehicle staging areas as far as practicable from existing residential dwellings.

Source: SCWC 1999c

**C.2.2.3 Construction Impacts**

Noise generated from the construction of a pipeline is a result of the operation of heavy construction equipment during pipeline spread activities, such as ditching, hauling, backfilling, and cleanup. Table C.2-8 provides a typical list of construction equipment used along a pipeline construction spread, as well as their associated noise levels (USEPA, 1974).

**Table C.2-8 Noise Emission Characteristics of Construction Equipment**

<b>Equipment</b>	<b>Typical Range (dBA)</b>
Jack hammers and drills	75-98
Trucks with lowboy	82-92
Truck leaving construction site	72-80
Backhoe	80-92
Air compressor	85-91
Ditching machine/Excavator	80-90
Front end loader	80-90
Pickup	70-85
Welding rigs	72-82

Note: Data are adapted from U.S. Environmental Protection Agency NTID 300.1, 1972, pg.2-108, and other sources (levels are in dBA at 50-foot reference distance). These values are based on a range of equipment and operating conditions.

The construction noise levels used in this impact analysis were developed in two previous noise impact studies. The first study was completed for the environmental analysis of a proposed 20-inch, 132-mile pipeline in southern California (Pacific Pipeline). It was found in the study that the noise from the combined construction operations resulted in a level of approximately 60 dBA at 1,300 feet from the ditch centerline, which equates to approximately 75 dBA at about 200 feet (Aspen, 1993 and 1996). In addition, another study was conducted to investigate potential noise effects arising from the installation of a pipeline for water conveyance. The study found that noise associated with pipeline construction did not exceed Leq of 75 dBA at a distance of 90 feet from the trench centerline (Aspen, 1996). Adjusted to a distance of 50 feet from the construction activity, the noise level would be 80 dBA Leq. The noise values for construction of the proposed 6.7-mile pipeline are expected to be similar to the results described above.

As described in Section B, the proposed 6.7-mile pipeline would be located almost entirely within the rights-of-way of various transportation corridors (see section C.3). Land uses along the proposed route are urbanized, and include residential, commercial, industrial, and a few open spaces. During construction, it is expected that land uses along the proposed route would be impacted from the numerous pieces of construction equipment operating within the streets of Cypress, Los Alamitos, Garden Grove, Seal Beach, Westminster, and Huntington Beach. Based on the information presented above, noise levels adjacent to the construction ROW could be 70 to 80 dBA, depending on the distance between the receptor and the source of noise.

As listed in Table C.2-3, there are two sensitive receptors along the proposed route, in addition to many areas of residential housing, which may be affected by the noise created during the construction of the proposed pipeline. It is anticipated that construction would progress at an average rate of 100 feet per day (SCWC 1999). Therefore, it is assumed that each of the sensitive receptors would be affected for a period of approximately two weeks. Noise levels at the receptors would be between 70 dBA and 80 dBA, depending on the distance the receptor is from the noise source (construction spread). In some cases this would result in an incremental increase in noise levels above the 15dBA for more than one half day.

SCWC has committed to restricting construction to the hours between 7 a.m. and 6 p.m. Monday through Friday (see Section b.7.1). This should help reduce construction noise impacts on sensitive receptors. Construction hours may be further restricted if so stipulated in the applicable noise ordinance or as approved by the local jurisdiction. Compliance during planning and construction is to be monitored by the city/county agency that enforces the noise ordinance, by the Public Works Department, or by a CPUC-approved construction monitor.

Mitigation Measures N-1 through N-3 would reduce overall noise levels somewhat and protect sensitive receptors and residences against noise effects. Upon their implementation, the noise impacts along the pipeline route would be reduced to a less-than-significant level (**Class II**). Although SCWC has committed to some or portions of these measures in general terms, they are further detailed, below, for additional clarity and to allow for monitoring of their implementation.

**Impact:** Noise from construction activities could disturb adjacent land uses (**Class II**).

**Mitigation Measures:** The following mitigation measures would reduce construction noise impacts at adjacent land uses.

- N-1** SCWC shall provide all businesses and residents adjacent to the pipeline alignment with seven days advance notice of the commencement of construction in the vicinity. Notification shall be provided by mail. In addition, SCWC shall notify other potential users of the public streets that make up the alignment by posting bulletins in neighborhoods that could be affected and by placing notices in local newspapers. These notices will state specifically where and when construction will occur in the area. Notices shall provide information on the types of potential disruption, such as noise, traffic and access problems, and will suggest how these inconveniences can be minimized (see Mitigation Measure T-2).
- N-2** SCWC shall establish a toll-free telephone number for community liaison for dealing with a range of public concerns/complaints, including noise and other construction-related issues. The construction notice issued (refer to Mitigation Measure N-1) shall advertise the community liaison telephone number.
- N-3** SCWC or its contractor shall maintain proper mufflers on all internal combustion and vehicles engines used in construction to reduce noise to the maximum feasible extent. SCWC or its contractor shall maintain written certification of muffler condition and make it available upon request to the CPUC-approved construction monitor.

#### **C.2.2.4 Operational Impacts**

An underground water storage reservoir, a pump station, a groundwater well and treatment plant, and a backbone distribution system would be maintained and operated on the Bolsa Chica Planned Community site.

These and other onsite facilities were previously subject to environmental review in the *1996 Recirculated Draft Environmental Impact Report for Bolsa Chica Local Coastal Program*. See Section E.2 for a summary of operational impacts associated with the Bolsa Chica Planned Community. Operational noise impacts associated with the Proposed Project would essentially be limited to maintenance and repair activities. It is anticipated that the Proposed Project would not generate an increase in long-term noise levels.

**Maintenance and Repair Activities.** The SCWC Los Alamitos Field Operations Warehouse would coordinate and oversee water services such as repairing main, hydrant and service leaks, new service installations, gate valve and maintenance programs, and 24-hour emergency response. Noise sources involving maintenance and repair operations could occasionally involve welding equipment and other heavy construction equipment. The increase in noise levels during maintenance and repair activities would be much less than that associated with the pipeline construction and would not result in a net increase of 15 dBA over local ambient levels for more than one day.

**Impact:** Noise from maintenance and repair operations could disturb adjacent land uses (**Class III**).

**Mitigation Measures:** None required.

**C.2.2.5 Impact and Mitigation Summary**

**Table C.2-9 Impact and Mitigation Summary -- Noise**

Impact	Class	Mitigation Measures
Noise from construction activities could disturb adjacent land uses	II	N-1, N-2, and N-3
Noise from maintenance and repair operations could disturb adjacent land uses.	III	NA

NA = Not Applicable, mitigation not required.

**C.2.3 REFERENCES**

Aspen (Aspen Environmental Group). 1993. *Final EIR on Pacific Pipeline Project*. Prepared for the California Public Utilities Commission. September.

\_\_\_\_\_. 1996. *Final EIS/EIR on Pacific Pipeline Project*. Prepared for the California Public Utilities Commission. January.

Beranek, L. 1971. *Criteria for Noise and Vibration in Communities, Buildings and Vehicles*, Ch. 18, Fig. 18.8, p. 579.

California Office of Noise Control. 1977. *Model Community Noise Ordinance*. California Department of Health. Berkeley, California. April.

Cities, General Plans of. See references for Land Use, Section C.9.3.

EPA (U.S. Environmental Protection Agency). 1980. *Effects of Noise on Wildlife and Other Animals: Review of Research Since 1971*. 550/9-80-100. June.

\_\_\_\_\_. 1978. *Protective Noise Levels*. Condensed version of EPA levels document (No. PB82-138827).

\_\_\_\_\_. 1972. *Noise From Construction Equipment and Operations, Building Equipment, and Home Appliance*. NTID 300.1.

\_\_\_\_\_. 1971. *Community Noise*. Washington, D.C. December 31.

\_\_\_\_\_. 1974. *Information of Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March (550/9-74-004).

FHWA (Federal Highway Administration). 1978. FHWA Highway Traffic Noise Prediction Model. PB81-194227, December.

HUD (U.S. Office of Housing and Urban Development). 1984. *Noise Assessment Guidelines*. Washington D.C.

Office of Planning and Research. 1990. *State of California General Plan Guidelines*. June.

SCWC (Southern California Water Company). 1999. *Revised Proponent's Environmental Assessment*. Prepared for the California Public Utilities Commission. January.