5.5 NOISE

The purpose of this Section is to analyze project-related noise source impacts on-site and to surrounding land uses. This Section evaluates short-term construction related impacts, as well as future buildout conditions. Mitigation measures are also recommended to avoid or lessen the project's noise impacts. Information in this Section was obtained from the *City of Long Beach General Plan* and the *City of Long Beach Municipal Code*. For the purposes of mobile source noise modeling and contour distribution, traffic information contained in the project Traffic Impact Analysis was utilized; refer to Section 5.3, *Traffic and Circulation*.

5.5.1 NOISE SCALES AND DEFINITIONS

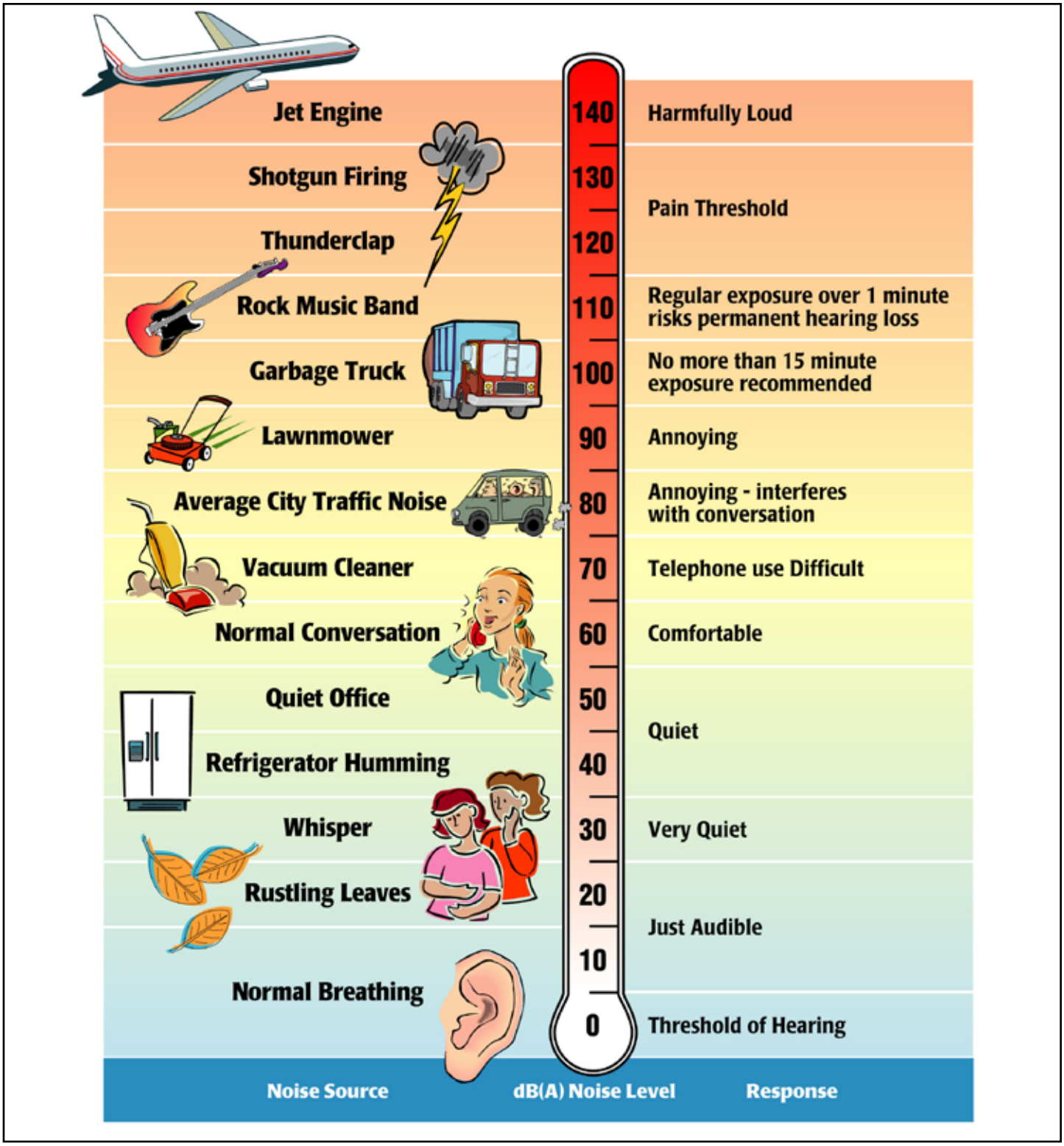
Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise will generally increase with the environmental sound level. However, many factors will also influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, will all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "not annoyed" to "highly annoyed."

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, and 20 dBA higher four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on Exhibit 5.5-1, *Sound Levels and Human Response*.

Many methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.



Source: Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970.
Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA/ONAC 550/9-74-004), March 1974.

NOT TO SCALE

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SHORELINE GATEWAY PROJECT
ENVIRONMENTAL IMPACT REPORT

Sound Levels and Human Response

Exhibit 5.5-1

Numerous methods have been developed to measure sound over a period of time. These methods include: 1) the Community Noise Equivalent Level (CNEL); 2) the Equivalent Sound Level (Leq); and 3) Day/Night Average Sound Level (L_{dn}). These methods are described below.

EQUIVALENT NOISE LEVEL (Leq)

The L_{eq} is the sound level containing the same total energy over a given sample time period. The L_{eq} can be thought of as the steady sound level, which in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)

The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24 hourly readings of equivalent levels, known as Leq's, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dBA for the evening, 7:00 PM to 10:00 PM, and +10 dBA for the night, 10:00 PM to 7:00 AM CNEL may be indicated by "dBA CNEL" or just "CNEL".

DAY NIGHT AVERAGE (Ldn)

Another commonly used method is the day/night average level or L_{dn}. The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the L_{eq}. The L_{dn} is calculated by averaging the Leq's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 PM to 7:00 AM), by 10 dBA to account for the increased sensitivity of people to noises that occur at night.

OTHER NOISE MEASURES

The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L_{90}, L_{50}, L_{10}, etc.). L_{50} equals the level exceeded 50 percent of the time, L_{10} ten percent of the time, etc.

GROUND-BORNE VIBRATION

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity or acceleration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak or vibration signal, while RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is typically used for evaluating potential

building damage, whereas RMS is typically more suitable for evaluating human response. Typically, ground-borne vibration, generated by man-made activities attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source.

Both construction and operation of development projects can generate ground-borne vibration. In general, demolition of structures preceding construction generates the highest vibrations. Construction equipment such as vibratory compactors or rollers, pile drivers and pavement breakers can generate perceptible vibration during construction activities. Heavy trucks can also generate ground-borne vibrations that vary depending on vehicle type, weight and pavement conditions.

5.5.2 REGULATORY SETTING

It is difficult to specify noise levels that are generally acceptable to everyone; what is annoying to one person may be unnoticed by another. Standards may be based on documented complaints in response to documented noise levels, or based on studies of the ability of people to sleep, talk or work under various noise conditions. All such studies, however, recognize that individual responses vary considerably. Standards usually address the needs of most of the general population.

This section summarizes the laws, ordinances, regulations and standards that are applicable to the project. Regulatory requirements related to environmental noise are typically promulgated at the local level. However, Federal and state agencies provide standards and guidelines to the local jurisdictions.

STATE OF CALIFORNIA GUIDELINES

California Environmental Quality Act

CEQA was enacted in 1970 and requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a potentially significant impact if the project exposes people to noise levels in excess of standards established in the local general plan or noise ordinance. Additionally, under CEQA, a project has a potentially significant impact if the project creates a substantial increase in the ambient noise levels in the project vicinity above levels existing without the project. If a project has a potentially significant impact, mitigation measures must be considered. If mitigation measures to reduce the impact to less than significant levels are not feasible due to economic, social, environmental, legal or other conditions, the most feasible mitigation measures must be considered.

California Government Code

California Government Code Section 65302 (f) mandates that the legislative body of each county and city adopt a noise element as part of their comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services, as shown in Table 5.5-1, *Land Use Compatibility for Community Noise Environments*.

Table 5.5-1
Land Use Compatibility For Community Noise Environments

Land Use Category	Community Noise Exposure (Ldn or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 – 65	60 - 70	70 – 75	70 - 85
Transient Lodging - Motel, Hotels	50 – 65	60 - 70	70 – 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 - 70	70 – 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 – 80	80 - 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 - 77.5	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 - 80	75 – 85	NA

NA = Not Applicable.

Notes:
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 included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable - New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable – New construction or development should generally not be undertaken.

Source: General Plan Guidelines, Office of Planning and Research, California, October 2003.

The guidelines rank noise land use compatibility in terms of “normally acceptable”, “conditionally acceptable”, “normally unacceptable” and “clearly unacceptable” noise levels for various land use types. Single-family homes are “normally acceptable” in exterior noise environments up to 60 CNEL and “conditionally acceptable” up to 70 CNEL. Multiple-family residential uses are “normally acceptable” up to 65 CNEL and “conditionally acceptable” up to 70 CNEL. Schools, libraries and churches are “normally acceptable” up to 70 CNEL, as are office buildings and business, commercial and professional uses.

CITY OF LONG BEACH

Title 8.0 of the *Long Beach Municipal Code* (*Municipal Code)* covers all City Health and Safety issues. Chapter 8.80 (Noise Ordinance) of the *Municipal Code* sets forth all noise regulations controlling unnecessary, excessive and annoying noise and vibration in the City of Long Beach. As outlined in Chapter 8.80 of the *Municipal Code* and as indicated in Table 5.5-2, *Exterior Noise Limits,* maximum exterior noise levels are based on land use districts. The following is taken from the *Municipal Code:*

Section 8.80.150 Exterior noise limits-Sound levels by receiving land use district.

A. The noise standards for the various land use districts identified by the noise control office as presented in Table A (refer to Table 5.5-2, *Exterior Noise Limits*) *in Section 8.80.160 shall, unless otherwise specifically indicated, apply to all such property within a designated district.*

B. No person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the city or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:

1. The noise standard for that land use district as specified in Table A in Section 8.80.160 for a cumulative period of more than thirty minutes in any hour; or

2. The noise standard plus five decibels for a cumulative period of more than fifteen minutes in any hour; or

3. The noise standard plus ten decibels for a cumulative period of more than five minutes in any hour; or

4. The noise standard plus fifteen decibels for a cumulative period of more than one minute in any hour; or

5. The noise standard plus twenty decibels or the maximum measured ambient, for any period of time.

C. If the measured ambient level exceeds that permissible within any of the first four noise limit categories in subsection B of this section, the allowable noise exposure standard shall be increased in five decibels increments in each category as appropriate to encompass or reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category in subsection B of this section, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

D. If the measurement location is on a boundary between two different districts, the noise level limit applicable shall be the arithmetic mean of the two districts.

E. If possible, the ambient noise shall be measured at the same location along the property line utilized in subsection B of this section, with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, then the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the offending noise from the source is inaudible. If the difference between the noise levels with noise source operating and not operating is six decibels or greater, then the noise measurement of the alleged source can be considered valid with a small correction applied to account for the contribution of the ambient noise. The correction is to be

applied in accordance with data shown in Table B in Section 8.80.160. (Ordinance C-5371 § 1 [part], 1977: prior code § 4430.6 [a]).

Table 5.5-2
Exterior Noise Limits

Land Use District[1]	Maximum Exterior Noise Levels (dBA)		
	Daytime[2]	Nighttime[3]	Anytime
1	50	45	--
2	60	55	--
3	--	--	65[(4)]
4	--	--	70[(4)]
5	Regulated by other agencies and laws.		

Notes:
1. Types of land uses associated with each district:
   1 – Predominantly residential
   2 – Predominantly commercial
   3 – Predominantly industrial
   4 – Predominantly industrial
   5 – Airports, freeways and waterways
2. 7:00 AM to 10:00 PM.
3. 10:00 PM to 7:00 AM.
4. Districts 3 and 4 are intended primarily for use at their boundaries rather than for noise control within those districts.

Although the project is predominantly residential, the project site is located in Land Use District 2, as shown in the Noise District Map in Section 8.80.160 of the Municipal Code. The maximum daytime exterior noise level for the project site would therefore be 60 dBA and the nighttime would be 55 dBA. The *Municipal Code* also includes regulations on interior noise standards. The interior noise standards are presented in Table 5.5-3, *Interior Noise Limits*.

Table 5.5-3
Interior Noise Limits

Land Use District	Maximum Interior Noise Levels (dBA)		
	Daytime[1]	Nighttime[2]	Anytime
Residential	45	35	--
Schools	45	--	--
Hospital, Designated quiet zone	--	--	40

Notes:
1. 7:00 AM to 10:00 PM.
2. 10:00 PM to 7:00 AM.

Additionally, the *Municipal Code* states the following regarding interior noise standards:

Section 8.80.170 Interior noise limits-Maximum sound levels.

B. No person shall operate, or cause to be operated, any source of sound indoors at any location within the incorporated limits of the city or allow the creation of any indoor noise which causes the noise level when measured inside the receiving dwelling unit to exceed:

1. The noise standard for that land use district as specified in table C (refer to Table 5.5-3) *for a cumulative period of more than five (5) minutes in any hour; or*

2. The noise standard plus five decibels (5 dB) for a cumulative period of more than one minute in any hour; or

3. The noise standard plus ten decibels (10 dB) or the maximum measured ambient, for any period of time.

C. If the measured indoor ambient level exceeds that permissible within any of the first two (2) noise limit categories in this section, the allowable noise exposure standard shall be increased in five decibel (5 dB) increments in each category as appropriate to reflect the indoor ambient noise level. In the event the indoor ambient noise level exceeds the third noise limit category, the maximum allowable indoor noise level under said category shall be increased to reflect the maximum allowable indoor noise level under said category shall be increased to reflect the maximum indoor ambient noise level. (Ordinance C-5371 § 1 [part], 1977: prior code § 4430.7 [a]).

In addition to interior and exterior noise standards, the City provides regulations for construction activities. According to Section 8.80.202 of the *Municipal Code* during the week (including Federal holidays), construction activities are limited between the hours of 7:00 AM and 7:00 PM. On weekends, construction activities are limited to between 9:00 AM and 6:00 PM on Saturdays and are prohibited on Sundays, unless a Work Permit is authorized. Section 8.80 of the *Municipal Code* requires a Noise Variance for all construction activity that falls outside the approved construction hours. The *Municipal Code* does not provide specific standards for the noise levels associated with construction activities. Although there is no upper threshold for construction noise, Section 8.80 of the *Municipal Code* gives the Noise Control Officer authority to address extremely loud or unusual noise (e.g., employee use of radios or other noises not associated with the construction activity).

5.5.3 ENVIRONMENTAL SETTING

SENSITIVE RECEPTORS

Human response to noise varies widely depending on the type of noise, time of day and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. Noise, or the lack

of it, is a factor in the aesthetic perception of some settings, particularly those with religious or cultural significance. Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours.

Existing sensitive receptors located in the project vicinity include multi-family residential uses. The Villa Riviera, the International Tower, the Long Beach Tower, Harbor Place and the Aqua buildings (west of Linden), are high-rise residential uses located to the south of the proposed project on the south side of Ocean Boulevard. Directly west of and adjacent to the project site is a residential use (Artaban). Lower density multi-family residential uses are located north of Medio Street and east of Lime Avenue and between Lime Avenue and the alley. Hotel uses are located west of the alley and east of Atlantic Avenue. Office and hotel uses are located west of Atlantic Avenue. There are also multi-family residential uses east of Alamitos and north of the Shell gas station on the corner of Alamitos Avenue and Ocean Boulevard.

In addition to the residential homes directly adjacent to the proposed project other sensitive receptors such as schools and hospitals are located within the vicinity. The Benjamin Franklin middle school and the Montessori School are located less than a mile away from the project. The St. Mary Medical Center is the closest hospital, approximately one mile from the project site.

AMBIENT NOISE MEASUREMENTS

In order to quantify existing ambient noise levels in the project area, RBF Consulting conducted noise measurements on January 19, 2006; refer to Table 5.5-4, *Noise Measurements*. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the project site. Fifteen-minute measurements were taken at each site, between 12:00 PM and 2:00 PM. Meteorological conditions were typical, with light wind speeds (0 to 5 miles per hour), low humidity and clear skies.

Table 5.5-4
Exterior Noise Measurements

Site No.	Location	Leq (dBA)	Time
1	Southwest corner of Ocean Boulevard and Alamitos Avenue in front of the International Tower	65.2	2:04 PM
2	Atlantic Avenue and driveway/alley	67.9	12:33 PM
3	Alley off Lime Avenue (between Lime Avenue and Broadway Court)	54.2	12:47 PM
4	Medio Street mid-block at Alamitos Avenue	59.8	1:14 PM
5	Ocean Boulevard at Alamitos Avenue (southeast corner)	67.8	1:35 PM

Source: Noise Monitoring Survey conducted by RBF Consulting, January 19, 2006.

Noise monitoring equipment used for the ambient noise survey consisted of a Larson Davis Laboratories Model LDL 820 sound level analyzer equipped with a Larson Davis Random Incidence Model 2561 microphone. The instrumentation was calibrated prior to use with a Larson Davis Model CAL250 acoustical calibrator to ensure the accuracy of the measurements, and complies with applicable requirements of the American National Standards Institute (ANSI) for Type I (precision) sound level meters. The results of the field measurements are indicated in Appendix 15.5, *Noise Data*. Existing measured noise levels range from approximately 54.2 dBA to 67.9 dBA.

MOBILE SOURCES

In order to assess the potential for mobile source noise impacts, it is necessary to determine the noise currently generated by vehicles traveling through the project area. The existing roadway noise levels in the vicinity of the project site were projected. Noise models were run using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters. These parameters determine the projected impact of vehicular traffic noise and include the roadway cross-section (e.g., number of lanes), roadway width, average daily traffic (ADT), vehicle travel speed, percentages of auto and truck traffic, roadway grade, angle-of-view and site conditions ("hard" or "soft"). The model does not account for ambient noise levels (i.e., noise from adjacent land uses) or topographical differences between the roadway and adjacent land uses. Noise projections are based on modeled vehicular traffic as derived from the project Traffic Impact Study.

A 30-mile per hour (mph) average vehicle speed was assumed for existing conditions based on empirical observations and posted maximum speeds along the adjacent roadways. ADT estimates were obtained from the project Traffic Impact Study; refer to Appendix 15.3, *Traffic Impact Analysis*. Existing modeled traffic noise levels can be found in Table 5.5-5, *Existing Traffic Noise Levels*.

STATIONARY NOISE SOURCES

The project area is highly urbanized, consisting of a mix of residential, commercial/retail, institutional, office and parking uses served by a grid system of arterial and collector streets. The primary sources of stationary noise in the project vicinity are urban related activities (i.e., mechanical equipment, parking areas, conversations and recreational areas). The noise associated with these sources may represent a single event noise occurrence, short-term or long-term/continuous noise.

5.5.4 SIGNIFICANCE THRESHOLD CRITERIA

Appendix G, of the *CEQA Guidelines* (as amended July 22, 2003) contains analysis guidelines related to the assessment of noise impacts. These guidelines have been utilized as thresholds of significance for this analysis. As stated in Appendix G, a project would create a significant environmental impact if it would:

Table 5.5-5
Existing Traffic Noise Levels

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Noise Contour (distance from centerline)		
			60 CNEL	65 CNEL	70 CNEL
Magnolia Avenue:					
North of 7th Street	7,120	59.1	88	28	9
Between 7th Street And 6th Street	7,890	59.5	97	31	10
South of 6th Street	7,500	59.3	93	29	9
North of 3rd Street	5,910	58.3	73	23	7
Between 3rd Street and Broadway	7,010	59.0	86	27	9
Between Broadway and Ocean Boulevard	9,720	60.4	120	38	12
South of Ocean Boulevard	3,860	56.4	48	15	5
Chestnut Avenue:					
North of 5th Street	1,060	50.9	13	4	1
South of 5th Street	980	50.6	12	4	1
Cedar Avenue:					
North of 5th Street	1,940	53.6	24	8	2
Between 5th Street and 4th Street	1,590	52.7	20	6	2
South of 4th Street	1,250	51.6	15	5	2
Pacific Avenue:					
North of 7th Street	8,080	59.4	100	32	10
Between 7th Street and 6th Street	8,050	59.4	99	31	10
Between 6th Street and 5th Street	4,370	56.8	54	17	5
Between 5th Street and 4th Street	4,020	56.4	50	16	5
Between 4th Street and 3rd Street	7,010	58.8	86	27	9
Between 3rd Street and Broadway	7,220	58.9	89	28	9
South of Broadway	9,020	59.9	111	35	11
North of Ocean Boulevard	6,400	58.4	79	25	8
Pine Street:					
North of 7th Street	3,360	55.9	41	13	4
Between 7th Street and 6th Street	3,415	56.0	42	13	4
Between 6th Street and 5th Street	4,150	56.9	51	16	5
Between 5th Street and 4th Street	3,870	56.6	48	15	5
Between 4th Street and 3rd Street	3,730	56.4	46	15	5
Between 3rd Street and Broadway	3,920	56.6	48	15	5
South of Broadway	5,220	57.9	65	20	6
North of Ocean Boulevard	5,120	57.8	63	20	6
South of Ocean Boulevard	4,320	57.0	53	17	5
Long Beach Boulevard:					
North of 7th Street	10,500	60.4	130	41	13
Between 7th Street and 6th Street	11,400	60.7	141	44	14
Between 6th Street and 5th Street	10,190	60.2	126	40	13

Table 5.5-5 [continued]
Existing Traffic Noise Levels

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Noise Contour (distance from centerline)		
			60 CNEL	65 CNEL	70 CNEL
Long Beach Boulevard [continued]:					
Between 5th Street and 4th Street	9,930	60.1	123	39	12
Between 4th Street and 3rd Street	8,090	59.2	100	32	10
Between 3rd Street and Broadway	7,610	59.0	94	30	9
Between Broadway and 1st Street	7,425	58.9	92	29	9
Between 1st Street and Ocean Boulevard	6,410	58.2	79	25	8
Elm Avenue:					
North of 7th Street	1,000	50.7	12	4	1
Between 7th Street and 6th Street	1,055	50.9	13	4	1
South of 6th Street	1,180	51.4	15	5	1
North of 3rd Street	2,240	54.2	28	9	3
Between 3rd Street and Broadway	2,370	54.4	29	9	3
Between Broadway and 1st Street	3,380	56.0	42	13	4
South of 1st Street	3,540	56.2	44	14	4
Atlantic Avenue:					
North of 7th Street	10,020	60.5	124	39	12
Between 7th Street and 6th Street	9,170	60.1	113	36	11
Between 6th Street and 5th Street	8,870	59.9	110	35	11
Between 5th Street and 4th Street	8,530	59.8	105	33	11
Between 4th Street and 3rd Street	6,570	58.6	81	26	8
Between 3rd Street and Broadway	5,585	57.9	69	22	7
Between Broadway and 1st Street	4,900	57.4	61	19	6
Between 1st Street and Ocean Boulevard	3,900	56.4	48	15	5
Lime Avenue:					
North of 7th Street	570	48.2	7	2	1
Between 7th Street and 6th Street	1,115	51.1	14	4	1
Between 6th Street and 5th Street	1,490	52.4	18	6	2
Between 5th Street and 4th Street	825	49.8	10	3	1
Between 4th Street and 3rd Street	585	48.3	7	2	1
Between 3rd Street and Broadway	510	47.7	6	2	1
Between Broadway and 1st Street	685	49.0	8	3	1
Between 1st Street and Ocean Boulevard	515	47.8	6	2	1
Martin Luther King Jr. Avenue:					
North of 7th Street	3,120	55.4	39	12	4
Between 7th Street and 6th Street	6,710	58.7	83	26	8
Alamitos Avenue:					
North of 7th Street	9,690	60.3	120	38	12
Between 7th Street and 6th Street	12,735	61.5	157	50	16

Table 5.5-5 [continued]
Existing Traffic Noise Levels

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Noise Contour (distance from centerline)		
			60 CNEL	65 CNEL	70 CNEL
Alamitos Avenue [continued]:					
South of 6th Street	13,440	61.7	166	52	17
North of 3rd Street	12,860	61.5	159	50	16
Between 3rd Street and Broadway	15,310	62.3	189	60	19
Between Broadway and 1st Street	12,170	61.3	150	48	15
Between 1st Street and East 1st Street	10,460	60.6	129	41	13
Between East 1st Street and Medio Street	10,220	60.5	126	40	13
Between Medio Street and Ocean Boulevard	9,885	60.4	122	39	12
Shoreline Avenue:					
South of Ocean Boulevard	11,560	60.7	143	45	14
North of Intersection 68	11,660	60.7	144	46	14
South of Intersection 68	11,590	60.7	143	45	14
Bonita Avenue:					
North of Broadway	410	46.8	5	2	0
South of Broadway	540	48.0	7	2	1
North of Ocean Boulevard	570	48.2	7	2	1
Orange Avenue:					
North of 4th Street	2,260	54.2	28	9	3
Between 4th Street and 3rd Street	2,260	54.2	28	9	3
Between 3rd Street and Broadway	2,280	54.3	28	9	3
South of Broadway	2,610	54.8	32	10	3
North of Ocean Boulevard	1,160	51.3	14	5	1
7th Street:					
West of Magnolia Avenue	10,900	60.8	135	43	13
East of Magnolia Avenue	11,720	61.1	145	46	14
West of Pacific Avenue	11,830	61.2	146	46	15
Between Pacific and Pine Street	12,895	61.6	159	50	16
Between Pine Street and Long Beach Boulevard	13,105	61.6	162	51	16
Between Long Beach Boulevard and Elm Avenue	13,120	61.6	162	51	16
East of Elm Avenue	13,200	61.7	163	51	16
West of Atlantic Avenue	14,230	62.0	176	56	18
Between Atlantic Avenue and Lime Avenue	16,170	62.5	199	63	20
Between Lime Avenue and MLK Jr. Avenue	14,525	62.1	179	57	18
Between MLK Jr. Avenue and Alamitos Avenue	17,355	62.8	214	68	21
East of Alamitos Avenue	23,860	64.2	294	93	29
6th Street:					
West of Magnolia Avenue	10,420	60.6	129	41	13
East of Magnolia Avenue	10,530	60.7	130	41	13

Table 5.5-5 [continued]
Existing Traffic Noise Levels

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Noise Contour (distance from centerline)		
			60 CNEL	65 CNEL	70 CNEL
6th Street [continued]:					
West of Pacific Avenue	9,210	60.1	114	36	11
Between Pacific Avenue and Pine Street	10,810	60.8	134	42	13
Between Pine Street and Long Beach Boulevard	11,660	61.1	144	45	14
Between Long Beach Boulevard and Elm Avenue	10,275	60.6	127	40	13
East of Elm Avenue	8,940	60.0	110	35	11
West of Atlantic Avenue	9,360	60.2	116	37	12
Between Atlantic Avenue and Lime Avenue	9,150	60.1	113	36	11
Between Lime Avenue and MLK Jr. Avenue/Alamitos Avenue	9,650	60.3	119	38	12
East of Alamitos Avenue	1,150	51.1	14	4	1
5th Street:					
West of Chestnut Avenue	1,100	51.1	14	4	1
Between Chestnut Avenue and Cedar Avenue	1,415	52.2	17	6	2
Between Cedar Avenue and Pacific Avenue	5,110	57.8	63	20	6
Between Pacific Avenue and Pine Street	4,350	57.1	54	17	5
Between Pine Street and Long Beach Boulevard	1,525	52.5	19	6	2
East of Long Beach Boulevard	1,200	51.5	15	5	1
West of Atlantic Avenue	1,870	53.4	23	7	2
Between Atlantic Avenue and Lime Avenue	1,870	53.4	23	7	2
East of Lime Avenue	1,840	53.3	23	7	2
4th Street:					
West of Cedar Avenue	2,100	53.9	26	8	3
Between Cedar Avenue and Pacific Avenue	2,280	54.3	28	9	3
Between Pacific Avenue and Pine Street	2,065	53.8	25	8	3
Between Pine Street and Long Beach Boulevard	3,110	55.6	38	12	4
East of Long Beach Boulevard	5,080	57.7	63	20	6
West of Atlantic Avenue	6,280	58.7	78	25	8
Between Atlantic Avenue and Lime Avenue	7,070	59.2	87	28	9
East of Lime Avenue	7,460	59.4	92	29	9
West of Orange Avenue	10,620	60.9	131	41	13
East of Orange Avenue	10,770	61.0	133	42	13
3rd Street:					
West of Magnolia Avenue	9,620	60.3	119	38	12
East of Magnolia Avenue	10,450	60.6	129	41	13
West of Pacific Avenue	11,530	61.1	142	45	14
Between Pacific Avenue and Pine Street	10,955	60.8	135	43	14
Between Pine Street and Long Beach Boulevard	11,415	61.0	141	45	14

Table 5.5-5 [continued]
Existing Traffic Noise Levels

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Noise Contour (distance from centerline)		
			60 CNEL	65 CNEL	70 CNEL
3rd Street [continued]:					
Between Long Beach Boulevard and Elm Avenue	11,325	61.0	140	44	14
East of Elm Avenue	10,380	60.6	128	41	13
West of Atlantic Avenue	10,100	60.5	125	39	12
Between Atlantic Avenue and Lime Avenue	10,345	60.6	128	40	13
Between Lime Avenue and Alamitos Avenue	9,720	60.3	120	38	12
East of Alamitos Avenue	7,300	59.1	90	28	9
West of Orange Avenue	7,440	59.2	92	29	9
East of Orange Avenue	7,320	59.1	90	29	9
Broadway:					
West of Magnolia Avenue	12,620	61.5	156	49	16
East of Magnolia Avenue	11,040	60.9	136	43	14
West of Pacific Avenue	12,020	61.3	148	47	15
Between Pacific Avenue and Pine Street	12,410	61.4	153	48	15
Between Pine Street and Long Beach Boulevard	12,195	61.3	151	48	15
Between Long Beach Boulevard and Elm Avenue	11,330	61.0	140	44	14
East of Elm Avenue	11,040	60.9	136	43	14
West of Atlantic Avenue	11,100	60.9	137	43	14
Between Atlantic Avenue and Lime Avenue	11,110	60.9	137	43	14
Between Lime Avenue and Alamitos Avenue	10,750	60.8	133	42	13
Between Alamitos Avenue and Bonita Avenue	13,540	61.8	167	53	17
Between Bonita Avenue and Orange Avenue	13,610	61.8	168	53	17
East of Orange Avenue	14,170	62.0	175	55	17
1st Steet:					
West of Long Beach Boulevard	980	50.4	12	4	1
Between Long Beach Boulevard and Elm Avenue	3,510	55.9	43	14	4
East of Elm Avenue	3,940	65.4	49	15	5
West of Atlantic Avenue	3,380	55.7	42	13	4
Between Atlantic Avenue and Lime Avenue	2,835	55.0	35	11	4
Between Lime Avenue and Alamitos Avenue	2,675	54.7	33	10	3
East 1st Street:					
East of Alamitos Avenue	640	48.5	8	2	1
Medio Street:					
West of Alamitos Avenue	260	44.8	3	1	0
Ocean Boulevard:					
West of Magnolia Avenue	28,640	64.4	353	112	35
East of Magnolia Avenue	29,160	64.7	360	114	36
West of Pacific Avenue	30,140	64.9	373	118	37

Table 5.5-5 [continued]
Existing Traffic Noise Levels

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Noise Contour (distance from centerline)		
			60 CNEL	65 CNEL	70 CNEL
Ocean Boulevard [continued]:					
Between Pacific Avenue and Pine Street	28,770	64.7	355	112	36
Between Pine Street and Long Beach Boulevard	29,130	64.7	360	114	36
East of Long Beach Boulevard	27,930	64.5	344	109	34
West of Atlantic Avenue	26,340	64.3	325	103	33
Between Atlantic Avenue and Lime Avenue	26,165	64.2	323	102	32
Between Lime Avenue and Alamitos Avenue	25,725	64.2	318	100	32
Between Alamitos Avenue and Bonita Avenue	27,790	64.5	343	108	34
Between Bonita Avenue and Orange Avenue	27,685	64.5	342	108	34
East of Orange Avenue	28,390	64.6	351	111	35
Source: Meyer, Mohaddes and Associates, April 2006.					

- Expose persons to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

- Expose persons to or generate excessive ground borne vibration or ground borne noise levels;

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; refer to Section 10.0, *Effects Found Not To Be Significant*.

- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels; refer to Section 10.0, *Effects Found Not To Be Significant*.

SIGNIFICANCE OF CHANGES IN AMBIENT NOISE LEVELS

Changes from over 5.0 dBA may be noticed by some individuals and, therefore may be considered an environmental impact, since under these conditions sporadic complaints may occur. Changes in community noise levels of less than 3.0 dBA are

normally not noticeable and are therefore considered less than significant.[1] Based on this information, the following thresholds have been utilized for this analysis:

- For the project site, exterior noise levels that exceed 60 dBA and interior noise levels that exceed 45 dBA would be considered significant, if no feasible control measures exist.

- On the adjacent network street system, an increase of 5.0 dBA or greater in mobile noise levels occurring from project-related traffic would be significant when the "No project" noise level is below 60 dBA CNEL. Additionally, an increase of 3.0 dBA or greater in noise levels occurring from project-related activities would be significant when the "No Project" noise level is above 60 dBA CNEL. Where the "No Project" noise levels is above 65 dBA, an increase of 1.0 dBA or greater would be significant.

- Stationary noise associated with the operation of any facility within the project area is considered significant if it would create, maintain, cause or allow the sound level, when measured on any other property, to exceed the allowable sound levels within Section 17.26.040(F) of the Municipal Code or Table 5.5-1, *Land Use Compatibility For Community Noise Environments*.

TRAFFIC NOISE

Roadway noise impacts were evaluated using the FHWA RD-77-108 traffic noise model and the Traffic Noise Model 2.5 (TNM 2.5). TNM is an entirely new, state-of-the-art computer program used for predicting noise impacts in the vicinity of highways. It uses advances in personal computer hardware and software to improve upon the accuracy and ease of modeling highway noise, including the design of effective, cost-efficient noise barriers.

TNM contains the following components:

- Modeling of five standard vehicle types, including automobiles, medium trucks, heavy trucks, buses and motorcycles, as well as user-defined vehicles;

- Modeling of both constant-flow and interrupted-flow traffic using a 1994/1995 field-measured database;

- Modeling of the effects of different pavement types, as well as the effects of graded roadways;

- Sound level computations based on a one-third octave-band database and algorithms;

- Graphically-interactive noise barrier design and optimization;

- Attenuation over/through rows of buildings and dense vegetation;

[1] U.S. Environmental Protection Agency, *Public Health and Welfare Criteria for Noise*, July 27, 1973.

- Multiple diffraction analysis;
- Parallel barrier analysis; and
- Contour analysis, including sound level contours, barrier insertion loss contours and sound-level difference contours.

TNM was utilized to determine the noise impacts to proposed buildings within the project site, while the FHWA RD-77-108 model was utilized to determine noise on off-site roadways throughout the area.

5.5.5 IMPACTS AND MITIGATION MEASURES

SHORT-TERM CONSTRUCTION NOISE IMPACTS

- **GRADING AND CONSTRUCTION WITHIN THE AREA WOULD RESULT IN TEMPORARY NOISE AND/OR VIBRATION IMPACTS TO NEARBY NOISE SENSITIVE RECEIVERS.**

Level of Significance Prior to Mitigation: Potentially Significant Impact.

Impact Analysis: Construction activities would potentially include demolition, grading, construction of buildings and paving. The proposed project is anticipated to begin construction in 2006 and would last approximately 34 months, ending in 2009. There are currently five structures on-site with approximately 50,000 square feet of commercial and residential land uses, which would be demolished. The proposed project includes the construction of a mixed-use development involving a 22-story residential tower, a 15- to 19-story building and a 10-story building. The proposed buildings would be situated over a two-story podium of residential, retail and live/work units, resulting in a maximum height of 24-, 21- and 12- stories. The project would result in 358 residential units including live/work spaces, townhomes, apartments and associated amenities. Grading activities would include the excavation and transport of approximately 140,000 cubic yards of soil and aggregate materials to the Puente Landfill in Whittier, California.

Construction activities generally have a short and temporary duration, lasting from a few days to a period of several months. Groundborne noise and other types of construction-related noise impacts would typically occur during the initial site preparation, which can create the highest levels of noise. High groundborne noise levels and other miscellaneous noise levels can be created by the operation of heavy-duty trucks, backhoes, bulldozers, excavators, front-end loaders, compactors, scrapers and other heavy-duty construction equipment. Table 5.5-6, *Typical Construction Equipment Noise Levels,* indicates the anticipated equipment noise levels during the construction period. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Table 5.5-6
Typical Construction Equipment Noise Levels

Type of Equipment	Maximum Level (dBA at 50 feet)
Scrapers	88
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

dBA = A-weighted decibel.
Source: Cyril M. Harris, *Handbook of Noise Control*, 1979.

A reasonable worst-case assumption is that the three loudest pieces of equipment would operate simultaneously and continuously over at least one hour within a focused area of 15 yards of each other. The combined sound level of three of the loudest pieces of equipment (scraper, bulldozer and heavy truck) is 92 dBA, measured at 50 feet from the noise source. Table 5.5-7, *Estimated Construction Noise Area*, assumes this combined source level and summarizes predicted noise levels at various distances from an active construction site. These estimations of noise levels take into account the distance to the receptor, attenuation from molecular absorption and anomalous excess attenuation.

Table 5.5-7
Estimated Construction Noise in the Area

Distance to Receptor (feet)	Sound Level at Receptor (dBA)[1]
50	92
100	86
200	80
400	73
600	69
800	67
1,000	64
1,500	60
2,000	57
2,500	54
3,000	51
4,000	47

dBA = A-weighted decibel.
1. The following assumptions were utilized:
   - Basic sound level drop-off rate: 6.0 dB per doubling distance
   - Molecular absorption coefficient: 0.7 dB per 1,000 feet
   - Analogous excess attenuation: 1.0 dB per 1,000 feet
   - Reference sound level: 92 dBA
   - Distance for reference sound level: 50 feet
   - Assumes simultaneous operation of 1 grader, 1 heavy truck and 1 bulldozer

As mentioned in the *Sensitive Receptors* section above, the project site is surrounded by residential and commercial land uses. The nearest residential development is the Artaban Building, located to the west, which is approximately 100 feet away. According to Table 5.5-7, at 100 feet noise levels would be at approximately 86 dBA. This would exceed the City's noise standards of 60 dBA at any period of time. Construction activity would also cause increased noise along access routes to and from the site due to movement of equipment and workers. Daily transportation of construction workers is not expected to cause a significant effect, as this traffic is a minor percentage of the overall traffic volumes in the area.

As stated above, noise sensitive receptors near the construction site would experience periodic excessive noise levels from construction activities; however, these construction-related noise levels would only occur during daytime hours. According to Section 8.80.202 of the *Municipal Code,* during the week (including Federal holidays) construction activities are limited between the hours of 7:00 AM and 7:00 PM. On weekends, construction activities are limited to 9:00 AM and 6:00 PM on Saturdays and are prohibited on Sundays, unless a City issued Work Permit is authorized. Implementation of the recommended mitigation (i.e., engine muffling, placement of construction equipment and strategic stockpiling and staging of construction vehicles) and compliance with the *Municipal Code* requirements, would serve to reduce exposure to significant noise levels.

Adherence to the *Municipal Code* requirements and compliance with the recommended mitigation measures would reduce short-term construction noise impacts. However, periodic noise impacts would remain significant and unavoidable based on the projected noise levels at residential uses surrounding the project.

Mitigation Measures:

N-1 Prior to Grading Permit issuance, the project shall demonstrate, to the satisfaction of the City of Long Beach Planning and Building Department, that the project complies with the following:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers;
- Construction noise reduction methods such as shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible;
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers;
- During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors;

- Operate earthmoving equipment on the construction site, as far away from vibration sensitive sites as possible; and

- Construction hours, allowable workdays and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action and report the action taken to the reporting party.

Level of Significance After Mitigation: Significant and Unavoidable Impact.

LONG-TERM (MOBILE) NOISE IMPACTS

- **TRAFFIC GENERATED BY THE PROPOSED PROJECT MAY CONTRIBUTE TO EXISTING TRAFFIC NOISE IN THE AREA AND EXCEED THE CITY'S ESTABLISHED STANDARDS.**

Level of Significance Prior to Mitigation: Potentially Significant Impact.

Impact Analysis: Future development within the project would result in additional traffic on adjacent roadways, thereby increasing vehicular noise in the vicinity of existing and proposed land uses. The "2015 Without Project" and "2015 With Project" were compared for long-term conditions. As previously discussed, an increase of five dBA or greater in noise levels occurring from project-related activities would be significant when the "No Project" noise level is below 60 dBA CNEL. An increase of three dBA or greater in noise levels occurring from project-related activities would be significant when the "No Project" noise level is between 60 to 65 dBA CNEL. Finally, an increase of one dBA or greater would be significant if the "No Project" noise level is above 65 dBA CNEL. Due to the area's urbanized nature, all acoustical modeling assumes a "hard site" which includes parameters for assessing traffic noise conditions in concert with the hardscape and tall buildings that compose much of the surrounding land uses.

YEAR 2015 CONDITIONS

In Table 5.5-8, *Future (2015) Buildout Noise Scenarios*, the noise level (dBA at 100 feet from centerline) depicts what would typically be heard 100 feet perpendicular to the roadway centerline.

As indicated in Table 5.5.8, under the "Future Without Project" scenario, noise levels at a distance of 100 feet from centerline would range from approximately 45.1 dBA to 66.0 dBA. The highest noise levels under "Future Without Project" conditions would occur along Ocean Boulevard west of Pacific and between Pine Street and Long Beach Boulevard. Similar to the "Future Without Project" scenario, under the "Future With Project" scenario noise levels at a distance of 100 feet from the centerline would range from approximately 47.2 dBA to 66.0 dBA. The highest noise levels under future with project conditions would occur along the same roadway segments as the "Future Without Project" scenario.

Table 5.5-8
Future (2015) Buildout Noise Scenarios

Roadway Segment	Future Without Project		Future Plus Project		Difference in dBA @100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 feet from Roadway Centerline	
Magnolia Avenue:					
North of 7th Street	8,160	59.7	8,140	59.7	0.0
Between 7th Street And 6th Street	9,640	60.4	9,535	60.4	0.0
South of 6th Street	9,370	60.3	9,250	60.2	- 0.1
North of 3rd Street	7,680	59.4	7,580	59.4	0.0
Between 3rd Street and Broadway	8,515	59.9	8,515	59.9	0.0
Between Broadway and Ocean Boulevard	12,570	61.6	12,560	61.6	0.0
South of Ocean Boulevard	4,520	57.1	4,520	57.1	0.0
Chestnut Avenue:					
North of 5th Street	1,1160	51.3	1,160	51.3	0.0
South of 5th Street	1,080	51.0	1,080	51.0	0.0
Cedar Avenue:					
North of 5th Street	2,900	55.3	2,900	55.3	0.2
Between 5th Street and 4th Street	2,425	54.5	2,425	54.5	0.0
South of 4th Street	2,060	53.8	2,060	53.8	0.0
Pacific Avenue:					
North of 7th Street	10,420	60.5	10,420	60.5	0.0
Between 7th Street and 6th Street	10,750	60.7	10,750	60.7	0.0
Between 6th Street and 5th Street	6,660	58.6	6,760	58.6	00
Between 5th Street and 4th Street	6,225	58.3	6,360	58.4	0.1
Between 4th Street and 3rd Street	9,515	60.1	9,510	60.1	0.0
Between 3rd Street and Broadway	9,820	60.3	9,830	60.3	0.0
South of Broadway	11,150	60.8	11,150	60.8	0.0
North of Ocean Boulevard	8,250	59.5	8,250	59.5	0.0
Pine Street:					
North of 7th Street	4,180	56.9	4,180	56.9	0.0
Between 7th Street and 6th Street	4,165	56.9	4,160	56.9	0.0
Between 6th Street and 5th Street	5,105	57.8	5,000	57.7	- 0.1
Between 5th Street and 4th Street	4,825	57.5	4,685	57.4	- 0.1
Between 4th Street and 3rd Street	4,540	57.2	4,540	57.2	0.0
Between 3rd Street and Broadway	5,810	58.3	5,810	58.3	0.0
South of Broadway	6,610	58.9	6,610	58.9	0.0
North of Ocean Boulevard	6,500	58.8	6,500	58.8	0.0
South of Ocean Boulevard	6,770	59.0	6,770	59.0	0.0
Long Beach Boulevard:					
North of 7th Street	16,380	62.3	16,410	62.3	0.0
Between 7th Street and 6th Street	17,640	62.6	17,615	62.6	0.0
Between 6th Street and 5th Street	16,130	62.2	16,095	62.2	0.0
Between 5th Street and 4th Street	15,790	62.1	15,750	62.1	0.0
Between 4th Street and 3rd Street	13,180	61.4	13,145	61.3	-0.1
Between 3rd Street and Broadway	13,165	61.4	13,125	61.3	-0.1

Table 5.5-8 [continued]
Future (2015) Buildout Noise Scenarios

Roadway Segment	Future Without Project		Future Plus Project		Difference in dBA @100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 feet from Roadway Centerline	
Long Beach Boulevard [continued]:					
Between Broadway and 1st Street	11,650	60.8	11,665	60.8	0.0
Between 1st Street and Ocean Boulevard	9,835	60.1	9,805	60.1	0.0
Elm Avenue:					
North of 7th Street	1,100	51.1	1,100	51.1	0.0
Between 7th Street and 6th Street	1,300	51.8	1,275	51.7	-0.1
South of 6th Street	1,480	56.4	1,450	52.3	-0.1
North of 3rd Street	2,770	55.1	2,730	55.0	-0.1
Between 3rd Street and Broadway	3,260	55.8	3,145	55.7	-0.1
Between Broadway and 1st Street	4,680	57.4	4,615	57.3	-0.1
South of 1st Street	4,800	57.5	4,740	57.4	-0.1
Atlantic Avenue:					
North of 7th Street	12,450	61.4	12,580	61.4	0.0
Between 7th Street and 6th Street	11,430	61.0	11,635	61.1	0.1
Between 6th Street and 5th Street	11,030	60.9	11,245	61.0	0.1
Between 5th Street and 4th Street	10,645	60.7	10,860	60.8	0.1
Between 4th Street and 3rd Street	8,435	59.7	8,650	59.8	0.1
Between 3rd Street and Broadway	7,270	59.1	7,510	59.2	0.1
Between Broadway and 1st Street	6,640	58.7	7,000	58.9	0.2
Between 1st Street and Ocean Boulevard	5,160	57.6	5,900	58.2	0.6
Lime Avenue:					
North of 7th Street	630	48.7	630	48.7	0.0
Between 7th Street and 6th Street	1,230	51.6	1,230	51.6	0.0
Between 6th Street and 5th Street	1,640	52.8	1,640	52.8	0.0
Between 5th Street and 4th Street	905	50.2	950	50.2	0.0
Between 4th Street and 3rd Street	850	50.0	850	50.0	0.0
Between 3rd Street and Broadway	920	50.3	920	50.3	0.0
Between Broadway and 1st Street	1,190	51.4	1,190	51.4	0.0
Between 1st Street and Ocean Boulevard	570	48.2	645	48.8	0.6
Martin Luther King Jr. Avenue:					
North of 7th Street	3,430	55.8	3,430	55.8	0.0
Between 7th Street and 6th Street	7,940	59.5	7,930	59.4	-0.1
Alamitos Avenue:					
North of 7th Street	17,270	62.8	17,440	62.9	0.1
Between 7th Street and 6th Street	23,450	64.2	23,865	64.2	0.0
South of 6th Street	24,220	64.3	24,640	64.4	0.1
North of 3rd Street	23,300	64.1	23,720	64.2	0.1
Between 3rd Street and Broadway	23,760	64.2	24,235	64.3	0.2
Between Broadway and 1st Street	17,570	62.9	18,155	63.0	0.1
Between 1st Street and East 1st Street	15,160	62.3	15,430	62.3	0.0
Between East 1st Street and Medio Street	14,900	62.2	15,160	62.3	0.1
Between Medio Street and Ocean Boulevard	14,535	62.1	14,735	62.1	0.0

Table 5.5-8 [continued]
Future (2015) Buildout Noise Scenarios

Roadway Segment	Future Without Project		Future Plus Project		Difference in dBA @100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 feet from Roadway Centerline	
Shoreline Avenue:					
South of Ocean Boulevard	13,920	61.5	14,640	61.7	0.2
North of Intersection 68	14,040	61.5	14,750	61.8	0.3
South of Intersection 68	13,960	61.5	14,670	61.7	0.2
Bonita Avenue:					
North of Broadway	420	46.9	450	47.2	0.3
South of Broadway	600	48.5	600	48.5	0.0
North of Ocean Boulevard	620	48.6	620	48.6	0.0
Orange Avenue:					
North of 4th Street	2,480	54.6	2,480	54.6	0.0
Between 4th Street and 3rd Street	2,485	54.6	2,485	54.6	0.0
Between 3rd Street and Broadway	2,510	54.7	2,510	54.7	0.0
South of Broadway	2,880	55.3	2,880	55.3	0.0
North of Ocean Boulevard	1,300	51.8	1,300	51.8	0.0
7th Avenue:					
West of Magnolia Avenue	13,240	61.7	13,240	61.7	0.1
East of Magnolia Avenue	14,870	62.2	14,760	62.1	0.0
West of Pacific Avenue	14,950	62.2	14,850	62.2	0.1
Between Pacific and Pine Street	16,165	62.5	16,080	62.5	0.0
Between Pine Street and Long Beach Boulevard	16,260	62.6	16,165	62.5	0.0
Between Long Beach Boulevard and Elm Avenue	16,115	62.5	16,070	62.5	0.0
East of Elm Avenue	16,360	62.6	16,280	62.6	0.1
West of Atlantic Avenue	17,400	62.9	17,320	62.8	0.0
Between Atlantic Avenue and Lime Avenue	19,370	63.3	19,245	63.3	0.1
Between Lime Avenue and MLK Jr. Avenue	17,560	62.9	17,430	62.9	0.1
Between MLK Jr. Avenue and Alamitos Avenue	21,220	63.7	21,090	63.7	0.0
East of Alamitos Avenue	31,210	65.4	31,320	65.4	0.1
6th Street:					
West of Magnolia Avenue	13,140	61.6	13,140	61.6	0.0
East of Magnolia Avenue	13,280	61.7	13,290	61.7	0.1
West of Pacific Avenue	11,860	61.2	11,860	61.2	0.0
Between Pacific Avenue and Pine Street	13,645	61.8	13,550	61.8	0.0
Between Pine Street and Long Beach Boulevard	14,450	62.1	14,450	62.1	0.1
Between Long Beach Boulevard and Elm Avenue	12,240	61.3	12,245	61.3	0.0
East of Elm Avenue	10,840	60.8	10,840	60.8	0.0
West of Atlantic Avenue	11,040	60.9	11,040	60.9	0.0
Between Atlantic Avenue and Lime Avenue	10,620	60.7	10,620	60.7	0.0
Between Lime Avenue and MLK Jr. Avenue/Alamitos Avenue	11,165	60.9	11,165	60.9	0.0
East of Alamitos Avenue	1,270	51.5	1,270	51.5	0.0

Table 5.5-8 [continued]
Future (2015) Buildout Noise Scenarios

Roadway Segment	Future Without Project		Future Plus Project		Difference in dBA @100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 feet from Roadway Centerline	
5th Street:					
West of Chestnut Avenue	1,280	51.7	1,270	51.7	0.0
Between Chestnut Avenue and Cedar Avenue	1,640	52.8	1,620	52.8	0.0
Between Cedar Avenue and Pacific Avenue	5,800	58.3	5,790	58.3	0.1
Between Pacific Avenue and Pine Street	4,875	57.6	4,825	57.5	0.0
Between Pine Street and Long Beach Boulevard	1,810	53.3	1,810	53.3	0.1
East of Long Beach Boulevard	1,400	52.1	1,400	52.1	0.0
West of Atlantic Avenue	2,140	54.0	2,140	54.0	0.0
Between Atlantic Avenue and Lime Avenue	2,130	54.0	2,130	54.0	0.0
East of Lime Avenue	2,100	53.9	2,100	53.9	0.0
4th Street:					
West of Cedar Avenue	2,630	54.6	2,610	54.8	0.0
Between Cedar Avenue and Pacific Avenue	2,890	55.3	2,870	55.3	0.0
Between Pacific Avenue and Pine Street	3,220	55.8	3,200	55.7	-0.1
Between Pine Street and Long Beach Boulevard	4,345	57.1	4,340	57.0	-0.1
East of Long Beach Boulevard	7,080	59.2	7,070	59.2	0.2
West of Atlantic Avenue	8,080	59.7	8,060	59.7	0.1
Between Atlantic Avenue and Lime Avenue	8,880	60.2	8,870	60.2	0.2
East of Lime Avenue	9,510	60.5	9,500	60.5	0.3
West of Orange Avenue	12,730	61.7	12,710	61.7	0.1
East of Orange Avenue	12,890	61.8	12,870	61.8	0.1
3rd Street:					
West of Magnolia Avenue	14,580	62.1	14,320	62.0	-0.1
East of Magnolia Avenue	14,860	62.2	14,680	62.1	-0.1
West of Pacific Avenue	16,280	62.6	16,110	62.5	0.2
Between Pacific Avenue and Pine Street	15,345	62.3	15,185	62.3	0.3
Between Pine Street and Long Beach Boulevard	16,945	62.7	16,785	62.7	0.3
Between Long Beach Boulevard and Elm Avenue	15,350	62.3	15,330	62.3	0.1
East of Elm Avenue	14,440	62.0	14,360	62.0	0.2
West of Atlantic Avenue	14,200	62.0	14,110	61.9	0.1
Between Atlantic Avenue and Lime Avenue	14,005	61.9	13,950	61.9	0.1
Between Lime Avenue and Alamitos Avenue	13,480	61.7	13,425	61.7	0.1
East of Alamitos Avenue	8,740	59.9	8,740	59.9	0.1
West of Orange Avenue	8,600	59.8	8,600	59.8	0.1
East of Orange Avenue	8,570	59.8	8,570	59.8	0.1
Broadway:					
West of Magnolia Avenue	20,730	63.6	20,680	63.6	0.0
East of Magnolia Avenue	18,160	63.0	18,120	63.0	0.0
West of Pacific Avenue	19,340	63.3	19,300	63.3	0.0
Between Pacific Avenue and Pine Street	19,970	63.5	19,945	63.5	0.0
Between Pine Street and Long Beach Boulevard	20,130	63.5	20,100	63.5	0.0

Table 5.5-8 [continued]
Future (2015) Buildout Noise Scenarios

Roadway Segment	Future Without Project		Future Plus Project		Difference in dBA @100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 feet from Roadway Centerline	
Broadway [continued]:					
Between Long Beach Boulevard and Elm Avenue	16,160	62.5	16,180	62.5	0.0
East of Elm Avenue	15,380	62.3	15,400	62.3	0.0
West of Atlantic Avenue	15,440	62.3	15,450	62.3	0.0
Between Atlantic Avenue and Lime Avenue	15,30	62.2	14,945	62.0	-0.2
Between Lime Avenue and Alamitos Avenue	15,145	62.3	15,060	62.2	-0.1
Between Alamitos Avenue and Bonita Avenue	15,450	62.3	15,485	62.4	0.1
Between Bonita Avenue and Orange Avenue	15,545	62.4	15,575	62.4	0.0
East of Orange Avenue	16,180	62.5	16,200	62.5	0.0
1st Steet:					
West of Long Beach Boulevard	1,080	50.8	1,080	50.8	0.0
Between Long Beach Boulevard and Elm Avenue	4,080	56.6	4,130	56.6	0.1
East of Elm Avenue	4,500	57.0	4,540	57.0	0.0
West of Atlantic Avenue	4,110	56.6	4,150	56.6	0.0
Between Atlantic Avenue and Lime Avenue	3,645	56.1	3,850	56.3	0.2
Between Lime Avenue and Alamitos Avenue	3,470	55.9	3,785	56.2	0.3
East 1st Street :					
East of Alamitos Avenue	700	48.9	700	48.9	0.0
Medio Street:					
West of Alamitos Avenue	280	45.1	750	49.4	4.3
Ocean Boulevard:					
West of Magnolia Avenue	35,860	65.6	35,900	65.6	0.0
East of Magnolia Avenue	37,040	65.8	37,080	65.8	0.0
West of Pacific Avenue	38,860	66.0	38,900	66.0	0.1
Between Pacific Avenue and Pine Street	37,550	65.8	37,590	65.8	0.0
Between Pine Street and Long Beach Boulevard	39,420	66.0	39,460	66.0	0.0
East of Long Beach Boulevard	37,920	65.9	37,960	65.9	0.0
West of Atlantic Avenue	36,340	65.7	36,360	65.7	0.0
Between Atlantic Avenue and Lime Avenue	36,200	65.7	36,890	65.7	0.0
Between Lime Avenue and Alamitos Avenue	35,720	65.6	36,475	65.7	0.1
Between Alamitos Avenue and Bonita Avenue	35,540	65.6	35,705	65.6	0.0
Between Bonita Avenue and Orange Avenue	35,430	65.6	35,590	65.6	0.0
East of Orange Avenue	36,180	65.7	36,340	65.7	0.0

Source: Meyer, Mohaddes, and Associates, April 2006.

Table 5.5-8 also compares the "Future Without Project" scenario to the "Future With Project" scenario. The proposed project would increase noise levels on the surrounding roadways by a maximum of 4.3 dBA along roadways with noise levels below 60 dBA. It should be noted that even with the 4.3 dBA increase, the overall noise level would still be below 50 dBA. Thus, as stated under the *Significance Criteria*, when the baseline noise level is less than 60 dBA, an increase in noise levels of less than 5.0 dBA is considered less than significant.

Mitigation Measures: No Mitigation Measures are recommended.

Level of Significance After Mitigation: Less Than Significant Impact.

ON-SITE LONG-TERM (MOBILE) NOISE IMPACTS

- **NOISE GENERATED BY TRAFFIC ALONG THE SURROUNDING ROADWAYS MAY RESULT IN NOISE LEVELS AT THE PROJECT SITE THAT EXCEED THE CITY'S ESTABLISHED STANDARDS FOR RESIDENTIAL LAND USES.**

Level of Significance Prior to Mitigation: Potentially Significant Impact.

Impact Analysis:

On-Site Noise Conditions

The project is proposed to include residential uses, which are sensitive to traffic related noise. Due to the unique urbanized nature of the project site, on-site noise levels were determined by using the FHWA TNM 2.5 model. This particular noise model simulates the acoustically reflective contours that result from the surrounding building, roadways, sidewalks, and hardscape surfaces. The on-site noise levels have been calculated for the residential uses in the Courtyard Tower, Terrace Tower and Gateway Tower.

Courtyard Tower

Noise levels were calculated at the following locations: 1) units directly facing Ocean Boulevard; 2) units facing the alley; and 3) residential units that would be located behind the parking structure, but facing Ocean Boulevard. As indicated in Table 5.5-9, *On-site Noise Levels at the Courtyard Tower*, units located on the ground floor would be exposed to the highest exterior noise levels. Residential units located towards the back of the Courtyard Tower would have exterior noise levels well below the City's standard and therefore would not require mitigation.

The first two levels (Ground Floor and Mezzanine Level) of the Courtyard Building, facing Ocean Boulevard, would be live/work areas, which are not considered to be sensitive areas. Levels 1 and 2 of the Courtyard Building facing Ocean Boulevard are residential units. According to project site design plans, these units would include balconies. As shown in Table 5.5-9, the exterior noise levels at the proposed balconies would exceed the City's Standards of 60 dBA for a Land Use District 2

area as shown in the City's Noise District Map; refer to Table 5.5-2, *Exterior Noise Limits*. Therefore, exterior noise levels at the proposed residential units facing Ocean Boulevard would be significant and unavoidable. However, interior noise levels within the units facing Ocean Boulevard would comply with the City's 45 dBA noise regulations. Standard building construction practices typically result in 20 dBA of noise attenuation with windows closed.

Table 5.5-9
On-Site Noise Levels at the Courtyard Tower

Floor Level	Exterior Noise Levels (dBA CNEL)[1]		
	Units Fronting Ocean Boulevard	Units Fronting Parking Structure	Units Fronting the Alley
Ground Level	63.1	53.6	51.6
Mezzanine	63.0	53.5	51.5
1	62.9	53.4	51.4
2	62.8	53.3	51.3
3	NA	53.2	51.2
4	NA	53.1	51.1
5	NA	53.0	51.0
6	NA	52.9	50.9
7	NA	52.8	50.8
8	NA	52.7	50.7
9	NA	52.6	50.6
10	NA	52.5	50.5

NA = Not applicable

1 Using site plans provided by the project Applicant, noise levels were calculated at locations within the proposed structures directly facing the surrounding roadways.

Terrace Tower

The Terrace Tower is anticipated to be 15 to 19 levels, with the first two levels serving as a retail use and facing Ocean Boulevard. Similar to the Courtyard Tower, units directly facing Ocean Boulevard would be exposed to exterior noise levels exceeding the City's 60 dBA noise standard; refer to Table 5.5-10, *On-Site Noise Levels at the Terrace Tower*. Exterior noise levels at the proposed Terrace Tower would therefore be significant and unavoidable. However, the interior noise standards would be at or below the City's 45 dBA noise standard with standard building practices.

Table 5.5-10
On-Site Noise Levels at the Terrace Tower

Floor Level	Exterior Noise Levels (dBA CNEL)[1]	
	Units Fronting Ocean Boulevard	Units Fronting the Alley
Ground Level	61.7	51.6
Mezzanine	61.6	51.5
1	61.5	51.4
2	61.4	51.3
3	61.3	51.2
4	61.2	51.1
5	61.1	51.0
6	61.0	50.9
7	60.9	50.8
8	60.8	50.7
9	60.7	50.6
10	60.6	50.5
11	60.5	50.4
12	60.4	50.3
13	60.3	50.2
14	60.2	50.1
15	60.1	50.0
16	60.0	49.9
17	59.9	49.8
18	59.8	49.7
19	59.7	49.6

1 Using site plans provided by the project Applicant, noise levels were calculated at locations within the proposed structures directly facing the surrounding roadways.

Gateway Tower

The Gateway Tower is the tallest building of the three structures on the project site. The Gateway Tower would also include retail on the first two levels of the structure. Similar to the Courtyard and Terrace Towers, residential units facing Ocean Boulevard would be exposed to the exterior noise levels exceeding 60 dBA; refer to Table 5.5-11, *On-Site Noise Levels at the Gateway Tower*. As discussed with the other towers, the Gateway Tower would result in balconies having noise levels above the City's standards of 60 dBA and would be significant and unavoidable. However, the interior noise standards would be at or below the City's 45 dBA noise standard with standard building practices.

Table 5.5-11
On-Site Noise Levels at the Gateway Tower

Floor Level	Exterior Noise Levels (dBA CNEL)[1]			
	Units Fronting the Courtyard	Units Fronting Ocean Boulevard	Units Fronting Alamitos Avenue	Units Fronting Medio Street
Ground Level	54.3	62.9	58.2	56.0
Mezzanine	54.2	62.8	58.1	55.9
1	54.1	62.7	58.0	55.8
2	54.0	62.6	57.9	55.7
3	53.9	62.5	57.8	55.6
4	53.8	62.4	57.7	55.5
5	53.7	62.3	57.6	55.4
6	53.6	62.2	57.5	55.3
7	53.5	62.1	57.4	55.2
8	53.4	62.0	57.3	55.1
9	53.3	61.9	57.2	55.0
10	53.2	61.8	57.1	54.9
11	53.1	61.7	57.0	54.8
12	53.0	61.6	56.9	54.7
13	52.9	61.5	56.8	54.6
14	52.8	61.4	56.7	54.5
15	52.7	61.3	56.6	54.4
16	52.6	61.2	56.5	54.3
17	52.5	61.1	56.4	54.2
18	52.4	61.0	56.3	54.1
19	52.3	60.9	56.2	54.0
20	52.2	60.8	56.1	53.9
21	52.1	60.7	56.0	53.8
22	52.0	60.6	55.9	53.7

1 Using site plans provided by the project Applicant, noise levels were calculated at locations within the proposed structures directly facing the surrounding roadways.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Significant and Unavoidable Impact.

LONG-TERM (STATIONARY) NOISE IMPACTS

- **THE PROPOSED PROJECT HAS THE POTENTIAL TO RESULT IN AN INCREASE IN AMBIENT NOISE LEVEL DUE TO THE GENERATION OF ON-SITE NOISE.**

Level of Significance Prior to Mitigation: Less Than Significant Impact.

Impact Analysis: According to the *Long Beach General Plan* Land Use Map, the project area is designated as Mixed Use (LUD No. 7). Land uses intended for the area include employment centers, such as retail, offices and medical facilities; higher density residences; visitor-serving facilities; personal and professional services; and

recreational facilities. Noise associated with operational activities of mixed uses is typically generated by the following sources:

- Trucks traveling on the site, to and from loading docks;
- Mechanical equipment (air conditioners, trash compactors, emergency generators, etc.);
- Typical parking lot activities (i.e., parking lot traffic and car door slamming); and
- Landscape maintenance.

Typically, noise from high rise buildings does not significantly impact adjacent residential uses. Although several noise sources would be introduced, many of them would operate for only very brief time periods. It should be noted that the project is adjacent to District 1 (located east of Alamitos Avenue), which identifies noise limits as 50 dBA (as opposed to 60 dBA for District 2). However, land uses within District 1 are not anticipated to be impacted by the project due to the various project design features and noise attenuation due to distance. Stationary mechanical noise, landscaping, social gatherings and parking lot noise usually do not operate concurrently. Further, it should be noted that the projected noise levels presented below do not account for any noise attenuation due to existing walls, berms, intervening structures or topography. The location of the refuse disposal areas, loading docks and air conditioning units/compressors can be sources of excessive noise. However, this potential impact is for a short time and these areas can be protected from unauthorized use or access.

Residential Uses

Development of the proposed residential units would create new stationary noise typical of any new residential development. Noise that is typical of residential areas includes children playing, pet noise, amplified music, pool and spa equipment and home repair. Noise from residential stationary sources would primarily occur during the "daytime" activity hours of 7:00 AM to 10:00 PM.[2]

Slow-Moving Trucks (Deliveries) and Loading Areas

Noise sources at loading areas may include maneuvering and idling trucks, truck refrigeration units, fork lifts, banging and clanging of equipment (i.e., hand carts and roll-up doors), noise from public address systems and voices of truck drivers and employees. The maximum noise level associated with loading docks is typically 73 dBA at 75 feet. According to project site plans, one loading area is located off Medio Street at the Gateway Towers. The proposed loading area would be sealed to prevent loading activities from impacting sensitive receptors. Furthermore, deliveries and loading and unloading activities shall take place only during daytime hours as specified in Section 8.80.200 of the City's *Municipal Code.* Impacts resulting from loading area activities would be less than significant.

[2] In terms of noise, the City of Long Beach defines daytime hours as 7:00 AM to 10:00 PM.

Mechanical Equipment

The proposed project would require mechanical equipment such as a cooling tower, boiler, pumps and fans for heating, ventilation and air conditioning (HVAC). Currently, there are two possible locations for mechanical equipment. According to site design plans, cooling towers and other equipment would be located on the rooftops of each structure. The buildings range in height from 150 feet at the Courtyard Tower, 230 feet at the Terrace Tower, and approximately 280 feet at the Gateway Tower. The equipment would be oriented away from surrounding high-rise residential developments and would be screened to ensure that noise levels would be below the City's 60 dBA standard for Land Use District 2. Mechanical equipment may also be placed within the subterranean levels of the buildings. The mechanical equipment would then be shielded and would not pose significant impacts to surrounding sensitive receptors. Additionally, compliance with the *2001 California Mechanical Code* and City of Long Beach mechanical code requirements would ensure stationary mechanical noise is less than significant.

Parking Areas

Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. However, the instantaneous maximum sound levels generated by a car door slamming, engine starting up and car pass-bys may be an annoyance to adjacent noise-sensitive receptors. Typical noise levels generated by parking areas are an estimated 70 dBA at 50 feet from the source during peak events (this is an "instantaneous" or peak noise level). Parking lot noise would also be partially masked by background noise from adjacent roads and typical community noise sources. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 48 feet for normal speech to 50 dBA at 50 feet for very loud speech. The proposed parking facility is primarily a subterranean parking facility, and therefore would not be in direct line of site of any of the proposed retail or residential units. Therefore parking lot noise impacts are anticipated to be less than significant.

Mitigation Measures:

N-2 The proposed project shall be required to adhere to Chapter 8.80.200 of the *Municipal Code,* which prohibits loading dock activities and the use of refuse disposal areas between the hours of 10:00 PM and 7:00 AM.

Level of Significance After Mitigation: Less Than Significant Impact.

5.5.6 CUMULATIVE IMPACTS

- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE NOISE IMPACTS.**

Level of Significance Prior to Mitigation: Less Than Significant Impact.

Impact Analysis:

Cumulative Construction Noise

Of the 38 related projects that have been identified within the project study area, the Applicant has no control over the timing or sequencing of related projects, and as such, any quantitative analysis to ascertain the daily construction emissions that assumes multiple, concurrent construction would be speculative. Construction-related noise for the proposed project and each related project would be localized. In addition, it is likely that each of the related projects would have to comply with the local noise ordinance, as well as mitigation measures that may be prescribed pursuant to CEQA provisions that require significant impacts to be reduced to the extent feasible. Thus, as construction noise is localized in nature and drops off rapidly from the source, a significant cumulative construction related noise impact would not result.

Cumulative Operational Noise

Forecast year 2015 without project traffic volumes were derived by applying an annual growth rate of 1.0 percent per year to existing traffic volumes to account for 9 years of cumulative traffic growth in the City of Long Beach. Additionally, the City provided a list of pending and approved developments within the influenced area; refer to Section 5.3, *Traffic and Circulation*. The list also provided key information concerning the location, number of units or square footage and percent complete for each project. For this analysis, all related projects were assumed to be completed by the Year 2015. As noted previously, the noise analysis utilized these traffic volumes to determine potential impacts during buildout conditions.

Based upon the results of the traffic analysis, noise levels at a distance of 100 feet from centerline would range from approximately 47.2 to 66.0 dBA under the "2015 With Project" scenario; refer to Table 5.6-8. Table 5.6-8 also compares the "2015 Without Project" scenario to the "2015 With Project" scenario. The maximum noise increase as a result of the proposed project is 4.3 dBA (for an overall resultant noise level of 49.4 dBA). Since the "Without Project" noise level would be below 65 dBA CNEL, a noise level increase of less than 5.0 dBA is considered a less than significant impact to noise levels along this local roadway. As the traffic volumes assessed in Table 5.6-8 included cumulative conditions, a less than significant mobile source noise impact would occur.

Additionally, the proposed project would not result in stationary long-term equipment that would significantly effect surrounding sensitive receptors. Furthermore, future development proposals within the City of Long Beach would require separate discretionary approval and CEQA assessment, which would address potential noise impacts and identify necessary attenuation measures, where appropriate. Thus, cumulative noise exposure would be considered a less than significant impact.

Mitigation Measures: No mitigation measures are recommended.

Level of Significance After Mitigation: Not applicable.

5.5.7 SIGNIFICANT UNAVOIDABLE IMPACTS

Despite compliance with mitigation measures, the proposed project would result in significant and unavoidable impacts regarding exposure to construction noise, due to the proximity of sensitive receptors to the project site. Construction activity could exceed the City's noise standards of 60 dBA at any period of time. Additionally, due to forecast traffic levels, on-site noise at the outdoor balconies would exceed the allowable limits established by the City and would result in a significant impact.

If the City Long Beach approves the project, the City shall be required to cite their findings in accordance with Section 15091 of CEQA and prepare a Statement of Overriding Considerations in accordance with Section 15093 of CEQA.