# NOISE STUDY

## Ocean Beach Community Plan Update
## City of San Diego California

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## GLOSSARY OF TERMS

**Sound Pressure Level (SPL):** a ratio of one sound pressure to a reference pressure ($L_{ref}$) of 20 µPa. Because of the dynamic range of the human ear, the ratio is calculated logarithmically by 20 log ($L/L_{ref}$).

**A-weighted Sound Pressure Level (dBA):** Some frequencies of noise are more noticeable than others. To compensate for this fact, different sound frequencies are weighted more.

**Minimum Sound Level ($L_{min}$):** Minimum SPL or the lowest SPL measured over the time interval using the A-weighted network and slow time weighting.

**Maximum Sound Level ($L_{max}$):** Maximum SPL or the highest SPL measured over the time interval the A-weighted network and slow time weighting.

**Equivalent sound level ($L_{eq}$):** the true equivalent sound level measured over the run time. Leq is the A-weighted steady sound level that contains the same total acoustical energy as the actual fluctuating sound level.

**Day Night Sound Level (LDN)**: Representing the Day/Night sound level, this measurement is a 24 –hour average sound level where 10 dB is added to all the readings that occur between 10 pm and 7 am. This is primarily used in community noise regulations where there is a 10 dB "Penalty" for night time noise. Typically LDN's are measured using A weighting.

**Community Noise Exposure Level (CNEL)**: The accumulated exposure to sound measured in a 24-hour sampling interval and artificially boosted during certain hours. For CNEL, samples taken between 7 pm and 10 pm are boosted by 5 dB; samples taken between 10 pm and 7 am are boosted by 10 dB.

**Octave Band**: An octave band is defined as a frequency band whose upper band-edge frequency is twice the lower band frequency.

**Third-Octave Band**: A third-octave band is defined as a frequency band whose upper band-edge frequency is 1.26 times the lower band frequency.

**Response Time (F,S,I)**: The response time is a standardized exponential time weighting of the input signal according to fast (F), slow (S) or impulse (I) time response relationships. Time response can be described with a time constant. The time constants for fast, slow and impulse responses are 1.0 seconds, 0.125 seconds and 0.35 milliseconds, respectively.

## 1.0 PROJECT INTRODUCTION

The Ocean Beach Precise Plan (Proposed Plan) includes 742 acres, the majority of which are developed with low and medium density residential uses. Three primary commercial areas exist along Newport Avenue, Voltaire Street, and Point Loma Avenue, which contain a diverse mix of small businesses. There is no industrial development in Ocean Beach. The Ocean Beach Precise Plan was adopted by the City of San Diego in 1975 and is currently the oldest community planning document for the City of San Diego and with the exception of three minor amendments has remained essentially unchanged for over a quarter of a century.

The Proposed Plan is intended to guide future public and private development within the Plan area. The Proposed Plan land use plan designates the majority of Ocean Beach for low and medium density residential development with remaining areas for higher density residential development, public facilities, commercial use, and parks. A companion document to the Ocean Beach Precise Plan, the Ocean Beach Action Plan, was designed to implement Precise Plan goals and recommendations. The Ocean Beach Precise Plan is currently undergoing an update with a goal of combining existing Precise Plan policies and sections of the Action Plan into one community area planning document.

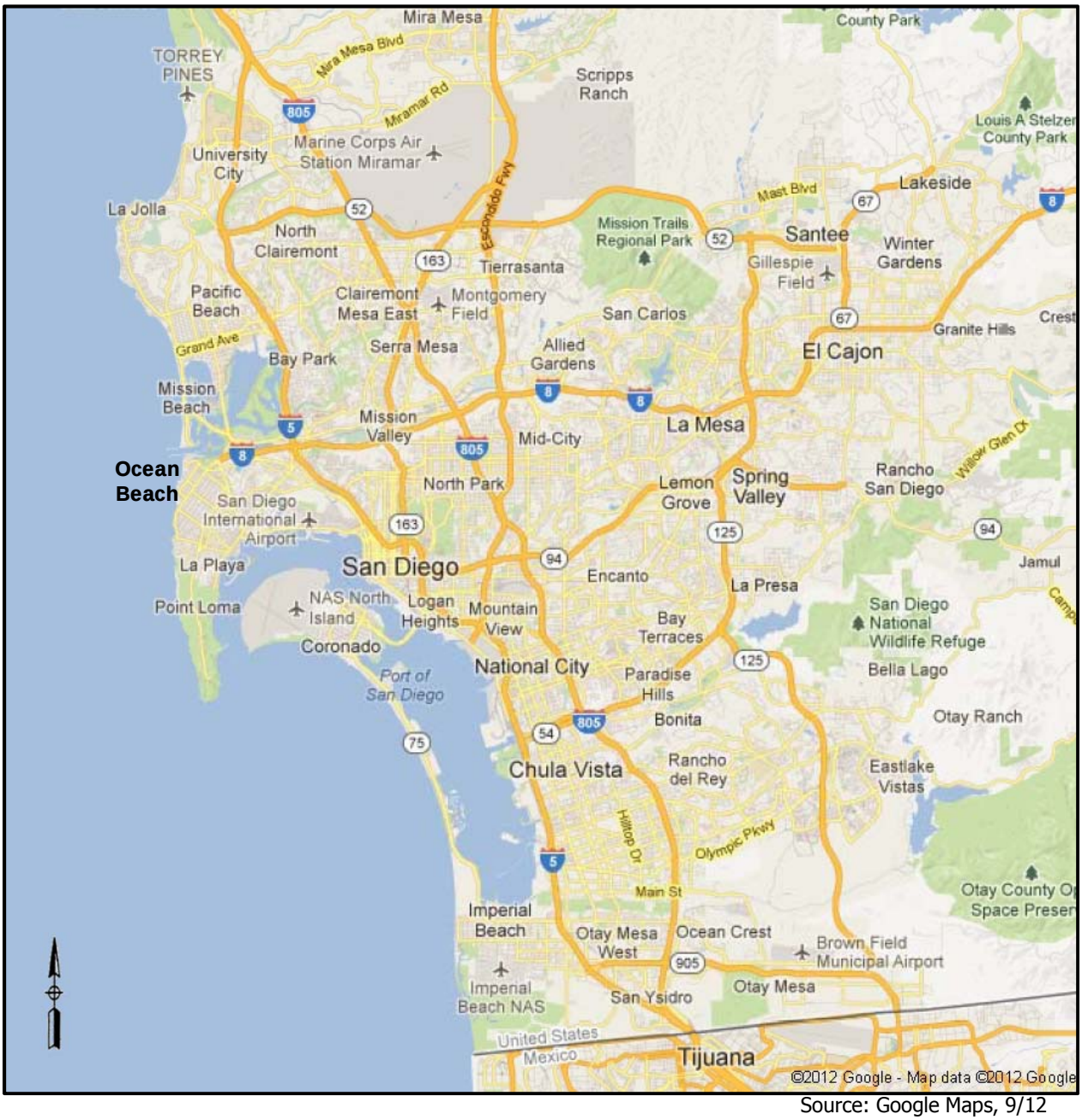
Figure 1 shows the regional location of the Community Plan area. Figure 2 shows the Community Plan boundary and the existing condition land uses. Figure 3 shows the proposed Community Plan land uses. The following main noise sources exist within the Plan area:

- Traffic on circulation element roads and freeways
- Aircraft Activities from San Diego International Airport (SDIA)
- Various commercial operations in the planning area

Impacts are assessed in accordance with the guidelines, policies, and standards established by the City of San Diego. Measures are recommended, as required, to avoid adverse impacts to noise-sensitive areas.

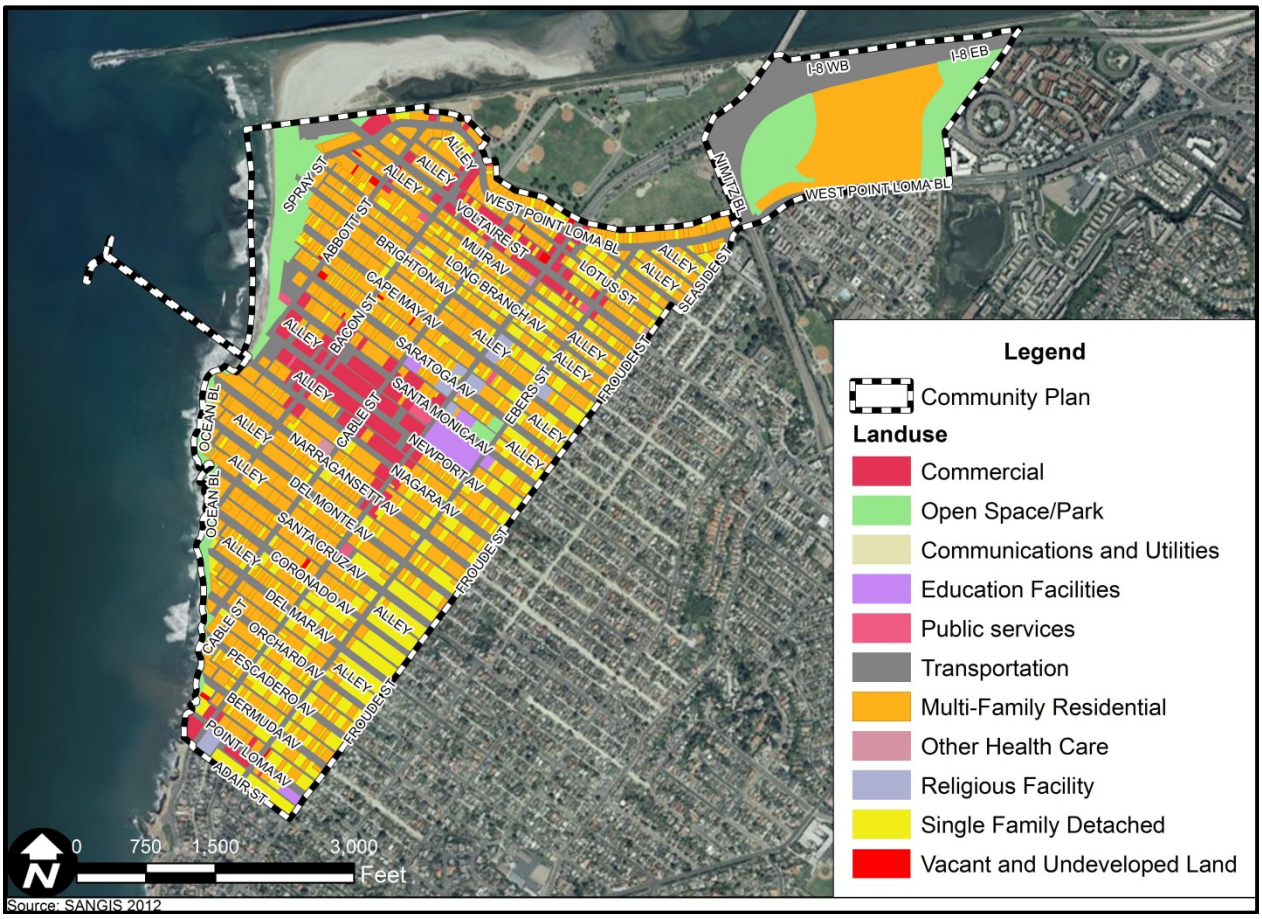
This noise analysis provides a brief discussion of noise terminology, the existing noise environment, and regulatory setting, and evaluates the potential for noise impacts from the overall changes in land use in the plan area through Buildout. This analysis does not assume detailed plans for specific development areas.

## Figure 1: Vicinity Map

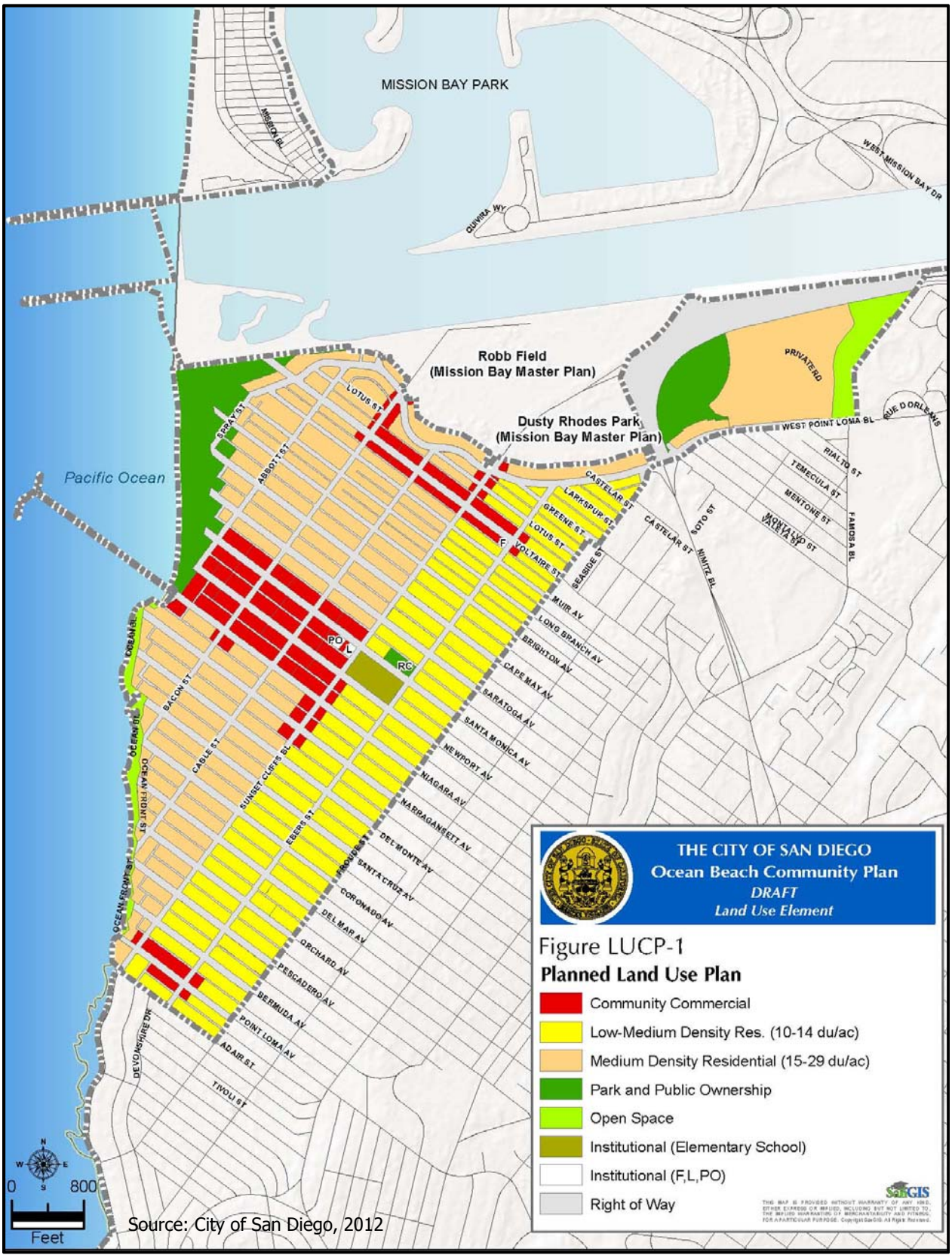



Source: Google Maps, 9/12

## Figure 2: Community Plan Boundary and Existing Condition Land Uses



## Figure 3: Proposed Community Plan Land Uses



# 2.0 PROJECT DESCRIPTION

## 2.1 PLAN LOCATION

The Ocean Beach Community is bounded on the north by the San Diego River, on the west by the Pacific Ocean, on the east by Froude Street and West Point Loma Boulevard, and on the south by Adair Street. Ocean Beach contains three residential sub-areas: North Ocean Beach, north of the mid-block between Santa Monica Avenue and Saratoga Avenue, South Ocean Beach, south of Niagara Avenue and The Hill, east of Sunset Cliffs.

The community of Ocean Beach includes 742 acres, the majority of which are developed with low and medium density residential uses. Three primary commercial areas exist along Newport Avenue, Voltaire Street, and Point Loma Avenue, which contain a diverse mix of small businesses. There is no industrial development in Ocean Beach. The Ocean Beach Community Plan (Plan) was adopted by the City of San Diego in 1975 and is currently the oldest community planning document for the City of San Diego and with the exception of three minor amendments has remained essentially unchanged for over a quarter of a century.

## 2.2 PLAN DESCRIPTION

The proposed project is an update to the Ocean Beach Community Plan (Plan). The project is designed to revise the Plan with respect to organization and content for consistency with the General Plan, to amend the Plan Land Use Map with related zone changes to reflect amendments and correct inconsistencies between existing land uses and the Community Plan, and to amend the Ocean Beach Public Facilities Financing Plan. The proposed project would rezone 99 parcels (approximately 21 acres) from RS-1-7 to RM -1-1. The existing zone allows for single dwelling unit (du) density of 9/du per acre for a maximum build out of approximately 189 units. The proposed Community Plan Update (CPU) would change the zoning to allow up to 15/du per acre and would result in the maximum build out of approximately 315 units, or a net increase of 62 dwelling units.

The draft Plan sets out a long-range vision and comprehensive policy framework for how the community of Ocean Beach could develop and maintain the qualities that define Ocean Beach over the next 20 to 30 years. The draft Plan provides policy direction for future development and been guided by the City of Villages growth strategy and citywide policy direction contained within the City of San Diego's General Plan (City of San Diego 2008).

The draft Plan reflects these principles through new policy direction in its nine Elements, which are summarized as follows:

Land Use and Community Planning Element

Patterned after the General Plan land use categories, the Plan provides for a balanced mix of residential and commercial land uses. Mixed use "village" areas have evolved organically over time through the proximity and interrelationships between commercial districts and adjacent residential neighborhoods. This component emphasizes the importance of maintaining low-medium density residential character in Ocean Beach. It encourages sensitive development and small-scale character for mixed-use residential/commercial development within commercial districts. The element would also protect, enhance and expand park and open space areas.

Mobility

Ocean Beach is an urbanized coastal community and will accommodate a small percentage of new population and associated traffic. Consequently, the focus has shifted from developing new transportation systems, to sustainable policies supporting current densities and alternative transportation modes. The shift toward additional and improved alternative transportation modes, such as transit, bikeways, and pedestrian paths linking the community with open spaces, supports an enhanced infrastructure, thereby reducing dependence on non-renewable resources, and forming a more sustainable and integrated approach to mobility and land use. The policies are intended to mitigate impacts associated with automobiles while enhancing desirable outcomes associated with the City of Villages growth strategy in terms of walkability and pedestrian orientation.

Urban Design & Community Identity

Ocean Beach is a small-scale coastal community with stable neighborhoods, active commercial centers, historic resources, a diverse and actively engaged population, and an enviable natural environment. The policies of the Urban Design and Community Identity Element are intended to protect, preserve, and enhance the traditional development pattern in order to ensure future generations of residents and visitors will be able to enjoy the community's unique ambience.

Economic Prosperity

Ocean Beach is well suited for providing a wide range of commercial goods and services serving local residents as well as catering to the needs of visitors. Despite its regional attraction as a beach area, the small pedestrian-oriented community would like to preserve, protect, and encourage the diversity of locally-owned and operated businesses. The policies of the Economic Prosperity Element are intended to address this.

Public Facilities, Services & Safety

Ocean Beach is an urbanized community with little capacity for new development, and limited

opportunities for generating revenue to pay for new or expanded facilities. The community plan update anticipates that most new development will occur as in-fill projects in the three commercial districts. Residents have not limited their expectations regarding an acceptable level of public facilities, services, and safety. Therefore, the emphasis of the element is to identify community priorities for public facility improvements, and to create specific criteria for defining and describing the desired character and location of needed facilities.

Recreation

The purpose of this element is to preserve, protect, acquire, develop, operate, maintain, and enhance public recreation opportunities and facilities throughout the City of San Diego. The community's park and open space systems supports the City's ability to attract and retain visitor serving businesses, as well as providing for the recreational needs of local residents. Ocean Beach's recreational opportunities are enhanced by its proximity to neighboring regional facilities.

Conservation

The community of Ocean Beach recognizes the importance of natural resources and the need for conservation. Preservation of natural resources will depend on the enhancement, maintenance and promotion of Ocean Beach's resources, as well as the integration of sustainable development practices. The policy recommendations embodied in the community plan update will serve to guide future development in the community.

Noise

Ocean Beach is an active urban beach community and has a higher ambient noise level than more suburban communities. Ambient noise level is the composite of noise from all normal background noise sources at a given location. Single event noises, such as aircraft flyover, also affect the background noise level in the community. The goal of the Noise Element is to reduce excessive noise affecting sensitive land uses and receptors.

Historic Preservation

The Ocean Beach Cottage Emerging Historical District was established in 2000, and is a significant resource as an example of a turn of the 19th to 20th century seashore resort and beach cottage area developed between 1887 and 1931. The goal of the Historic Preservation Element is to preserve, enhance, and celebrate the rich history of Ocean Beach, and to encourage heritage tourism opportunities.

# 3.0 METHODOLOGY

## 3.1 NOISE TERMINOLOGY AND CONCEPTS

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired, and may, therefore, be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2009).

Decibels and Frequency

In its most basic form, a continuous sound can be described by its frequency or wavelength (pitch) and its amplitude (loudness). Frequency is expressed in cycles per second, or hertz. Frequencies are heard as the pitch or tone of sound. High-pitched sounds produce high frequencies; low-pitched sounds produce low frequencies. Sound-pressure amplitude is measured in micro-Pascals (mPa). Sound-pressure amplitudes for different kinds of noise environments can range from 20 to 100,000,000 mPa. Because this huge range of values is cumbersome and difficult to use, a logarithmic scale is used to describe sound-pressure level in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 mPa (Caltrans 2009).

As dB are measured on a logarithmic scale that quantifies sound intensity, similar to the Richter scale used for earthquake magnitudes, dB cannot be added or subtracted through ordinary arithmetic. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3-dB decrease. In way of example, if an air conditioner produces a sound pressure level of 65 dB at 50 feet, two air conditioners at the same distance would produce 68 dB—not 130 dB.

Perception of Noise at the Receiver and A-Weighting

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale for sound levels. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise. Noise levels using A weighted measurements are written dB(A) or dBA. Table 1 shows the relationship of various noise levels to commonly experienced noise events.

**Table 1: Typical Noise Levels**

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| | --110-- | Rock Band |
| Jet Fly-over at 300 meters (1,000 feet) | --100-- | |
| Gas Lawn Mower at 1 meter (3 feet) | --90-- | |
| Diesel Truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour) | --80-- | Food Blender at 1 meter (3 feet); Garbage Disposal at 1 meter (3 feet) |
| Noisy Urban Area, Daytime<br>Gas Lawn Mower at 30 meters (100 feet) | --70-- | Vacuum Cleaner at 3 meters (10 feet) |
| Commercial Area Heavy Traffic at 90 meters (300 feet) | --60-- | Normal Speech at 1 meter (3 feet) |
| Quiet Urban Daytime | --50-- | Large Business Office Dishwasher in Next Room |
| Quiet Urban Nighttime | --40-- | Theater, Large Conference Room (Background) |
| Quiet Suburban Nighttime | --30-- | Library |
| Quiet Rural Nighttime | --20-- | Bedroom at Night, Concert Hall (Background) |
| | --10-- | Broadcast/Recording Studio |
| Lowest Threshold of Human Hearing | --0-- | Lowest Threshold of Human Hearing |

Source: Caltrans 2009

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dBA or in terms of acoustical energy. Two noise sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease; that a change of 5 dBA is readily perceptible; and that an increase (decrease) of 10 dBA sounds twice (half) as loud (Caltrans 2009).

Noise Propagation

From the source to the receiver, noise changes both in level and frequency. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on the important factors described in the following discussion.

Geometric spreading from point and line sources: Sound from a small localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates, or drops off, at a rate of 6 dBA for each doubling of

the distance. Movement makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The sound level attenuates at a rate of 3 dBA per doubling of distance for line sources (Crocker 2007).

Ground absorption: Hard sites (i.e., sites with a reflective surface between the source and the receiver, such as parking lots or smooth bodies of water) receive no excess ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. Soft sites are sites that have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees and receive an excess ground attenuation value of 1.5 dBA per doubling of distance (Crocker 2007).

Atmospheric effects: Wind speed will bend the path of sound to "focus" it on the downwind side and make a "shadow" on the upwind side of the source. At short distances, up to 164 feet, the wind has minor influence on the measured sound level. For longer distances, the wind effect becomes appreciably greater. Temperature gradients create effects similar to those of wind gradients, except that they are uniform in all directions from the source. On a sunny day with no wind, temperature decreases with altitude, giving a shadow effect for sound. On a clear night, temperature may increase with altitude, focusing sound on the ground surface (Caltrans 2009).

Shielding by natural and human-made features, noise barriers, diffraction, and reflection: A large object in the path between a noise source and a receiver can significantly attenuate noise levels at that receiver location. The amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, as well as fabricated features such as buildings and walls, can significantly alter noise levels.

Noise Descriptors

The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors used in this report to describe environmental noise are defined below:

- Lmax (Maximum Noise Level): The highest A-weighted integrated noise level occurring during a specific period of time.
- Lmin (Minimum Noise Level): The lowest A-weighted integrated noise level during a specific period of time.
- Peak: The highest weighted or unweighted instantaneous peak-to-peak value occurring during a measurement period.

- Ln (Statistical Descriptor): The noise level exceeded "n%" of a specific period of time, generally accepted as an hourly statistic. An L10 would be the noise level exceeded 10% of the measurement period.
- Leq (Equivalent Noise Level): The energy mean (average) noise level. The steady-state sound level that, in a specified period of time, contains the same acoustical energy as a varying sound level over the same time period.
- CNEL (Day-Night Noise Level): The 24-hour Leq with a 10-dBA "penalty" applied during nighttime noise-sensitive hours, 10:00 p.m. through 7:00 a.m. The CNEL attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

## 3.2 VIBRATION TERMINOLOGY AND CONCEPTS

Groundborne vibration consists of oscillatory waves that propagate from the source through the ground to adjacent structures. The frequency of a vibrating object describes how rapidly it is oscillating. The number of cycles per second of oscillation is the vibration frequency, which is described in terms of hertz (Hz). The normal frequency range of most groundborne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz (Crocker 2007).

Perception of Vibration at the Receiver

While people have varying sensitivities to vibrations at different frequencies, in general, they are most sensitive to low-frequency vibration. Vibration in buildings caused by construction activities may be perceived as motion of building surfaces or rattling of windows, items on shelves, and pictures hanging on walls. Vibration of building components can also take the form of an audible low-frequency rumbling noise, which is referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, connect the structure and the construction activity (FTA 2006).

Although groundborne vibration is sometimes noticeable in outdoor environments, groundborne vibration is almost never annoying to people who are outdoors (FTA 2006). The primary concern from vibration is the ability to be intrusive and annoying to local residents and other vibration-sensitive land uses.

Vibration Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations reduce much more rapidly than low frequencies, so that low frequencies tend to dominate the spectrum at large distances

from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances. When vibration encounters a building, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under certain circumstances, the ground-to-foundation coupling may also amplify the vibration level due to structural resonances of the floors and walls.

Vibration Descriptors

Vibration levels are usually expressed as a single-number measure of vibration magnitude in terms of velocity or acceleration, which describes the severity of the vibration without the frequency variable. The peak particle velocity (ppv) is defined as the maximum instantaneous positive or negative peak of the vibration signal, usually measured in inches per second. Since it is related to the stresses that are experienced by buildings, ppv is often used in monitoring vibration.

# 4.0 EXISTING CONDITIONS

## 4.1 PLAN AREA

Existing land uses within the Ocean Beach community include retail commercial; restaurant; personal service; lodging, real estate and financial office; community services, and mostly residential units. The Ocean Beach community can generally be described as a community with residential uses interspersed within commercial areas which can create noise conflicts.

## 4.2 SENSITIVE NOISE RECEPTORS

Noise-sensitive receptors are generally considered humans engaged in activities or utilizing land uses that may be subject to the stress of significant interference from noise. Activities usually associated with sensitive receptors include, but are not limited to, talking, reading, and sleeping. Land uses often associated with sensitive receptors include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries. Existing noise-sensitive human receptors in the community includes all residential land uses, schools and community parks.

## 4.3 EXISTING NOISE LEVELS

Community with Respect to Roadway Noise

A community noise survey was conducted to document noise exposure at various areas within the Ocean Beach community. To determine the existing noise conditions and assess the potential impacts, noise measurements were taken Tuesday, October 16, 2012 and Wednesday, October 17, 2012. Noise measurements were taken with a Larson-Davis Model LxT Type 1 Integrating Sound Level Meter, serial number 2412. The noise meter was programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

The ambient measurements were taken at sixteen locations within the Ocean Beach Community. The weather was partially cloudy to clear and dry with moderate breezes from the west averaging 1 to 3 miles per hour (mph) with occasional gusts of up to 8 mph. The results of the short-term noise measurements are summarized in Table 2. Detailed measurement data are provided in Attachment A. Traffic counts were conducted during the measurements, which were used to develop a vehicle classification mix for use traffic-noise modeling. Table 3 summarizes the traffic counts and observed community noise sources (i.e., aircraft). The noise measurement locations are shown in Figure 4.

## Table 2: Short-term Noise Measurement Summary

| Location* | Description | Date | Start Time of Measurement | $L_{eq}$ dBA |
|---|---|---|---|---|
| 1 | Mariners Cove – 100 feet from I-8 | 10/16/2012 | 1:30 PM | 61.3 |
| 2 | Mariners Cove Entrance – 10 Feet from curb | 10/16/2012 | 1:54 PM | 63.0 |
| 3 | Point Loma at Sunset Cliffs – 10 Feet from curb | 10/16/2012 | 2:25 PM | 64.6 |
| 4 | Froude at Voltaire – 5 Feet from curb | 10/16/2012 | 2:54 PM | 66.4 |
| 5 | Sunset Cliffs at Cape May – 5 Feet from curb | 10/16/2012 | 3:17 PM | 67.9 |
| 6 | Newport at the OB Elementary – 10 Feet from curb | 10/16/2012 | 3:39 PM | 61.4 |
| 7 | Sunset Cliffs at Narraganset – 5 Feet from curb | 10/16/2012 | 4:02 PM | 68.8 |
| 8 | Froude and Coronado – 10 Feet from curb | 10/16/2012 | 4:27 PM | 57.9 |
| 9 | Sunset Cliffs at Orchard – 5 Feet from curb | 10/17/2012 | 12:59 PM | 59.7 |
| 10 | Point Loma at Sunset Cliffs – 5 Feet from curb | 10/17/2012 | 1:20 PM | 68.2 |
| 11 | Bacon at Coronado – 5 Feet from curb | 10/17/2012 | 1:45 PM | 59.7 |
| 12 | Niagara near the OB Pier – 5 Feet from curb | 10/17/2012 | 2:06 PM | 61.8 |
| 13 | Cable at Newport – 5 Feet from curb | 10/17/2012 | 2:28 PM | 63.6 |
| 14 | Ocean Beach Park | 10/17/2012 | 2:51 PM | 63.0 |
| 15 | Brighton at Bacon – 5 Feet from curb | 10/17/2012 | 3:12 PM | 63.5 |
| 16 | Point Loma at Abbott – 5 Feet from curb | 10/17/2012 | 3:34 PM | 62.7 |

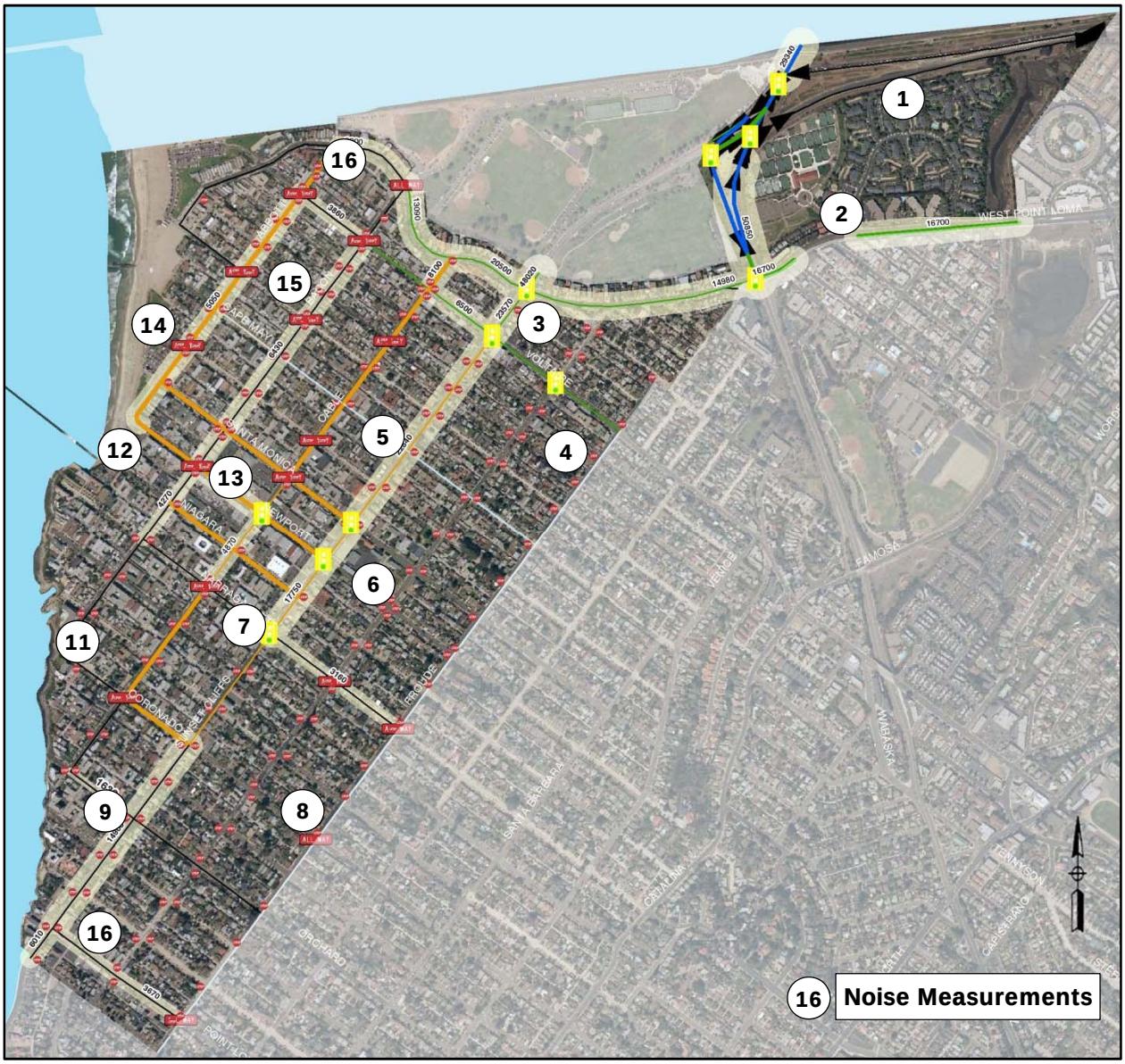
*The Location or Site ID number corresponds to locations shown in Figure 4.

## Table 3: Noise Measurement Traffic Counts

| Location* | Autos | Medium Trucks | Heavy Trucks | Aircraft |
|---|---|---|---|---|
| 1 | 10 | 0 | 0 | 9 |
| 2 | 20 | 0 | 0 | 5 |
| 3 | 112 | 1 | 1 | 2 |
| 4 | 160 | 2 | 1 | 5 |
| 5 | 339 | 3 | 2 | 4 |
| 6 | 50 | 1 | 0 | 1 |
| 7 | 295 | 6 | 2 | 2 |
| 8 | 14 | 0 | 0 | 4 |
| 9 | 109 | 2 | 0 | 3 |
| 10 | 53 | 0 | 0 | 6 |
| 11 | 36 | 0 | 0 | 5 |
| 12 | 20 | 1 | 0 | 5 |
| 13 | 110 | 1 | 0 | 2 |
| 14 | 6 | 0 | 0 | 6 |
| 15 | 118 | 0 | 0 | 3 |
| 16 | 112 | 0 | 0 | 2 |

*The Location or Site ID number corresponds to locations shown in Figure 4.

## Figure 4: Noise Measurement Locations




Source: Ldn Consulting, 2012

Community with Respect to Airport Noise

Ocean Beach is within the Airport Influence Area (AIA) for the San Diego International Airport (SDIA) at Lindbergh Field. The AIA serves as the boundary for the Airport Land Use Compatibility Plan (ALUCP). The ALUCP contains policies and criteria that address land use compatibilities concerning noise and safety aspects of airport operations and land uses, heights of buildings, residential densities and residential intensities. Noise and the over flight of aircraft are the two major compatibility factors affecting Ocean Beach. The state requires that the City submit any General Plan/community plan amendment in the AIA to the Airport Land Use Commission (ALUC) for a consistency determination with the adopted ALUCP.

As the ALUC, the San Diego County Regional Airport Authority is in the process of updating the ALUCP for SDIA that will establish new land use policies and criteria for the communities surrounding SDIA, including Ocean Beach. Current policies addressing airport land use compatibility are contained in the ALUCP as amended in 2004 and are implemented by the Airport Approach and Airport Environs overlay zones of the San Diego Municipal Code.

# 5.0 SIGNIFICANCE THRESHOLDS AND STANDARDS

## 5.1 City of San Diego Threshold for Determining Significance under CEQA

The City developed and published Significance Determination Thresholds for use in California Environmental Quality Act (CEQA) determinations. The CEQA significance standards are shown in Table 4. Based on the City's 2011 Significance Determination Thresholds, a significant noise impact would occur if implementation of the proposed CPU would:

1. Result in the exposure of noise-sensitive land uses to future noise levels which exceed those established in the adopted General Plan, noise ordinance, ALUCPs, or applicable standards of other agencies.
2. Result in a substantial increase in the existing ambient noise levels.
3. Result in increased land use incompatibilities associated with noise.
4. Result in construction or operation noise levels during the breeding season that would exceed 60dBA Leq or existing ambient noise level, if above 60dBA Leq.

**Table 4: Traffic Noise Significance Thresholds (dBA CNEL)**

| Structure of Proposed Use that would be Impacted by Traffic Noise | Interior Space | Exterior Useable Space[1] | General Indication of Potential Significance |
|---|---|---|---|
| Single-family detached | 45 dB | 65 dB | Structure or outdoor useable area[2] is <50 feet from the center of the closest (outside) lane on a street with existing or future ADTs >7,500 |
| Multi-family, school, library, hospital, day care center, hotel, motel, park, convalescent home | Development Services Department (DSD) ensures 45 dB pursuant to Title 24 | 65 dB | |
| Office, church, business, professional uses | n/a | 70 dB | Structure or outdoor useable area is <50 feet from the center of the closest lane on a street with existing or future ADTs >20,000 |
| Commercial, retail, industrial, outdoor spectator sports uses | n/a | 75 dB | Structure or outdoor useable area is <50 feet from the center of the closest lane on a street with existing or future ADTs >40,000 |

[1] If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.

## 5.2 CONSTRUCTION NOISE

Division 4 of Article 9.5 of the City of San Diego Municipal Code addresses the limits of disturbing or offensive construction noise. The Municipal Code states that with the exception of an emergency, it should be unlawful to conduct any construction activity so as to cause, at or

beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12–hour period from 7:00 a.m. to 7:00 p.m.

## 5.3 OPERATIONAL NOISE

The generation of noise from certain types of land uses could cause potential land use incompatibility. A project which would generate noise levels at the property line which exceed Section 59.5.0401 of the City's Municipal Code is considered potentially significant, as identified in Table 5 below.

**Table 5: Sound Level Limits in Decibels (dBA)**

| Land Use | Time of Day | One-Hour Average Sound Level (decibels) |
|---|---|---|
| 1. Single Family Residential | 7 a.m. to 7 p.m.<br>7 p.m. to 10 p.m.<br>10 p.m. to 7 a.m. | 50<br>45<br>40 |
| 2. Multi-Family Residential (Up to a maximum density of 1/2000) | 7 a.m. to 7 p.m.<br>7 p.m. to 10 p.m.<br>10 p.m. to 7 a.m. | 55<br>50<br>45 |
| 3. All other Residential | 7 a.m. to 7 p.m.<br>7 p.m. to 10 p.m.<br>10 p.m. to 7 a.m. | 60<br>55<br>50 |
| 4. Commercial | 7 a.m. to 7 p.m.<br>7 p.m. to 10 p.m.<br>10 p.m. to 7 a.m. | 65<br>60<br>60 |
| 5. Industrial or Agricultural | any time | 75 |

Source: City of San Diego Noise Ordinance Section 59.5.0401

Section 59.5.0401 of the Noise Ordinance sets a more restrictive operational exterior noise limit for the commercial uses of 65 dBA Leq for daytime hours of 7 a.m. to 7 p.m. and 60 dBA Leq during the noise sensitive nighttime hours of 7 p.m. to 7 a.m. Most of the Project components will only operate during the daytime hours but a few may operate during nighttime or early morning hours and therefore the most restrictive and conservative approach is to apply the 60

dBA Leq nighttime standard at the property lines.

## 5.4 TRANSPORTATION NOISE (LAND USE COMPATIBILITY)

The City uses the Land Use - Noise Compatibility Guidelines as shown on Table NE-3 in the Noise Element of the General Plan (provided as Table 6 below) for evaluating land use noise compatibility when reviewing proposed land use development projects. A "compatible" land use indicates that standard construction methods will attenuate exterior noise to an acceptable indoor noise level and people can carry out outdoor activities with minimal noise interference. Evaluation of land use that falls into the "conditionally compatible" noise environment should have an acoustical study prepared. The acoustical study should include, with consideration of the type of noise source, the sensitivity of the noise receptor, and the degree to which the noise source may interfere with speech, sleep, or other activities characteristic of the land use. For land uses indicated as "conditionally compatible", structures must be capable of attenuating exterior noise to the indoor noise level as shown in Table 5. For land uses indicated as "incompatible", new construction should generally not be undertaken.

Additionally, if the project is proposed within the Airport Environs Overlay Zone (AEOZ) as defined in Chapter 13, Article 2, Division 3 of the San Diego Municipal Code, the potential exterior noise impacts from aircraft noise would not constitute a significant environmental impact. However, the City recommends that structures within an AEOZ must also follow the requirements as shown in Table 6.

## 5.5 OFFSITE TRANSPORTATION NOISE

In accordance with the CEQA Guidelines, a project should not result in a substantial permanent increase in ambient noise levels. The definition of a substantial increase is not defined by CEQA and is left to each lead agency to determine an appropriate threshold. Noise level changes greater than 3 dBA, or a doubling of the acoustic energy, are often identified as an audible change in the ambient noise levels and an increase of this magnitude may be considered potentially significant in locations with existing high ambient noise levels. Therefore, for the purposes for this analysis, a direct and cumulative roadway noise impact would be considered significant if the project increases noise levels at a noise sensitive land use +3 dBA CNEL and the future noise level at the same noise sensitive land use is in excess of the "compatible" noise level per the City's General Plan (Table 6).

## Table 6: Land Use - Noise Compatibility Guidelines

| Land Use Category | Exterior Noise Exposure ( dBA CNEL) | | | | |
|---|---|---|---|---|---|
| | 60 | 65 | 70 | 75 | |
| *Open Space and Parks and Recreational* | | | | | |
| Community & Neighborhood Parks; Passive Recreation | | | | | |
| Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Outdoor Spectator Sports, Water Recreational Facilities; Horse Stables; Park Maint. Facilities | | | | | |
| *Agricultural* | | | | | |
| Animal Raising, Maintain & Keeping; Commercial Stables | | | | | |
| *Residential* | | | | | |
| Single Units; Mobile Homes; Senior Housing | | 45 | | | |
| Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations **For uses affected by aircraft noise, refer to Policies NE-D.2. & NE-D.3.* | | 45 | 45* | | |
| *Institutional* | | | | | |
| Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities | | 45 | | | |
| Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities) | | 45 | 45 | | |
| Cemeteries | | | | | |
| *Sales* | | | | | |
| Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories | | | 50 | 50 | |
| *Commercial Services* | | | | | |
| Building Services; Business Support; Eating & Drinking; Financial Institutions; Assembly & Entertainment; Radio & Television Studios; Golf Course Support | | | 50 | 50 | |
| Visitor Accommodations | | 45 | 45 | 45 | |
| *Offices* | | | | | |
| Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters | | | 50 | 50 | |
| *Vehicle and Vehicular Equipment Sales and Services Use* | | | | | |
| Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking | | | | | |
| *Wholesale, Distribution, Storage Use Category* | | | | | |
| Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution | | | | | |
| *Industrial* | | | | | |
| Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries | | | | | |
| Research & Development | | | | 50 | |

| | | | |
|---|---|---|---|
| | Compatible | Indoor Uses | Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. Refer to Section I. |
| | | Outdoor Uses | Activities associated with the land use may be carried out. |
| | Conditionally Compatible | Indoor Uses | Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas. Refer to Section I. |
| | | Outdoor Uses | Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable. Refer to Section I. |
| | Incompatible | Indoor Uses | New construction should not be undertaken. |
| | | Outdoor Uses | Severe noise interference makes outdoor activities unacceptable. |

Source: City of San Diego Noise Element (2008)

# 6.0 POTENTIAL IMPACTS

## 6.1 CONSTRUCTION

Noise impacts from construction are dependent on the noise generated by the construction equipment, the location and sensitivity of affected land uses, as well as the timing and duration of the activities. Noise levels adjacent to the active construction sites would increase during construction. Construction would not result in long-term impacts, since it would be temporary and daily construction activities would be limited by the City's Noise Ordinance (Section 59.5.0404) to hours of less noise sensitivity.

In general, construction activities are carried out in stages, and each stage has its own noise characteristics based on the construction equipment in use. Typical maximum noise levels at a distance of 50 feet from various pieces of construction equipment are shown in Table 7.

Typical construction projects, with equipment moving from one point to another, work breaks, and idle time, have hourly noise level that are lower than loud short-term, or instantaneous, peak noise events. For purposes of analysis of this project, a maximum 1-hour average noise level of 80 dBA $L_{eq}$ at a distance of 50 feet from the center of the construction area is assumed to occur. Noise levels of other activities, such as framing or paving, would be less. Maximum noise levels of 90 dBA $L_{max}$ may occur during grading and excavation, when there may be a combination of noise from several pieces of equipment in close proximity, including the noise of backup alarms, and these activities are near the construction site periphery.

Noise levels from construction activities are considered as point sources and would drop off at a rate of 6 dBA per doubling of distance over hard sites, such as streets and parking lots; the drop-off rate would increase slightly to 7.5 dBA over soft sites such as grass fields and open terrain with vegetation (FTA 2006). For purposes of this analysis the project area is considered acoustically hard, and all potential exterior receptors were assumed to be 5 feet above grade. All construction equipment is assumed to have an exhaust outlet height (source height) of 10 to 14 feet.

The majority of the plan area is multiple-family residential with single-family residential scattered throughout the Proposed Plan. Ocean Beach Elementary School is located along Sunset Cliffs Boulevard between Newport and Santa Monica Avenues. Commercial land uses are predominately located along Newport Avenue, Voltaire Street, Sunset Cliffs Boulevard, and Bacon Street, and to a lesser extent Niagara Avenue, Santa Monica Avenue, and Cable Street. Residences and businesses within, and in the vicinity of, the plan area would be affected by construction noise. No industrial uses are located within the Proposed Plan area.

**Table 7: Typical Maximum Construction Equipment Noise Levels**

| Equipment | Noise Level at 50 feet (dBA $L_{max}$) | Typical Duty Cycle |
|---|---|---|
| Auger Drill Rig | 85 | 20% |
| Backhoe | 80 | 40% |
| Blasting | 94 | 1% |
| Chain Saw | 85 | 20% |
| Clam Shovel | 93 | 20% |
| Compactor (ground) | 80 | 20% |
| Compressor (air) | 80 | 40% |
| Concrete Mixer Truck | 85 | 40% |
| Concrete Pump | 82 | 20% |
| Concrete Saw | 90 | 20% |
| Crane (mobile or stationary) | 85 | 20% |
| Dozer | 85 | 40% |
| Dump Truck | 84 | 40% |
| Excavator | 85 | 40% |
| Front End Loader | 80 | 40% |
| Generator (25 KVA or less) | 70 | 50% |
| Generator (more than 25 KVA) | 82 | 50% |
| Grader | 85 | 40% |
| Hydra Break Ram | 90 | 10% |
| Impact Pile Driver (diesel or drop) | 95 | 20% |
| Insitu Soil Sampling Rig | 84 | 20% |
| Jackhammer | 85 | 20% |
| Mounted Impact Hammer (hoe ram) | 90 | 20% |
| Paver | 85 | 50% |
| Pneumatic Tools | 85 | 50% |
| Pumps | 77 | 50% |
| Rock Drill | 85 | 20% |
| Roller | 74 | 40% |
| Scraper | 85 | 40% |
| Tractor | 84 | 40% |
| Vacuum Excavator (vac-truck) | 85 | 40% |
| Vibratory Concrete Mixer | 80 | 20% |
| Vibratory Pile Driver | 95 | 20% |

Source: FTA 2006; Thalheimer 2000
KVA = kilovolt amps

Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction durations last

over extended periods of time. Major noise-generating construction activities would include removal of existing pavement and structures, site grading and excavation, building framing, paving, and landscaping. The distance from these activities to the nearest noise-sensitive receptors would be approximately 50 feet.

The highest construction noise levels during typical construction activities would be generated during grading, excavation, road base construction, and foundation work, with lower noise levels occurring during building construction and paving. As shown in Table 7, large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA $L_{max}$ at a distance of 50 feet. However, typical construction-generated hourly noise levels are about 75 to 80 dBA $L_{eq}$ measured at a distance of 50 feet from the site during busy construction periods.

As discussed, noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor. However, intervening structures would result in lower noise levels at greater distances. Sound levels may be attenuated 3.0 to 5.0 dBA by a first row of houses/buildings and 1.5 dBA for each additional row of houses in built-up environments (FHWA 1978). These factors generally limit the distance construction noise travels and ensure noise impacts from construction are localized.

Although construction noise would be localized to the individual sites during construction, businesses and residences throughout the Plan area could be intermittently exposed to temporary elevated levels of noise throughout the years of construction. This is a potentially ***significant impact***. Due to the potential for high short-term and instantaneous noise levels during peak construction activity at nearby residential properties, measures have been identified that would reduce noise levels associated with construction.

## 6.2 TRAFFIC NOISE

The Proposed Plan could allow additional sensitive land uses in areas where noise levels could exceed acceptable standards. The Plan would potentially facilitate an increase in traffic, which could permanently increase existing traffic noise levels.

Existing Traffic Noise Levels

Noise levels projected for various roadway segments in this report were calculated using the methods in the *Highway Noise Prediction Model* published by the Federal Highway Administration (FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December, 1978). The FHWA Model uses the traffic volume, vehicle mix, speed, and roadway geometry to compute the equivalent noise level.

A spreadsheet calculation was used which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these equivalent noise levels and summing them gives the CNEL for the traffic projections. The noise contours are then established by iterating the equivalent noise level over many distances until the distance to the desired noise contour(s) are found.

Traffic volumes were taken from the project traffic report (Wilson 2012). Traffic volumes were taken from the project traffic report. The traffic classification mix used in the modeling was developed from traffic counts taken during the noise measurements. Traffic speeds were taken from the project traffic report and observed speed limits. All roadways were modeled on acoustically hard ground type. The model outputs are noise levels at 50 feet from the centerline of affected streets in the plan area with distances to various noise level contours (see Table 8). These noise contours do not account for intervening structures, differences in ground absorption or other shielding. Graphically, the existing noise contours are provided in Figure 5 following Table 8. The existing, unshielded, roadway noise contour input and out files are provided in Attachment B.

Future Traffic Noise Levels

As the Proposed Plan contains strategies to increase development densities within the plan area, traffic increases could result in related traffic-noise levels increases, which could adversely affect existing and future land uses. Thus, noise levels are predicted along project roadways to determine future noise levels and potential increases.

Future noise levels along Plan area roadways are shown in Table 9. The increase in traffic noise levels between existing and future traffic volumes are shown in Table 10. As shown in Table 10, noise levels along these affected roadways would range between -1 and +4 dBA. Therefore, based on the results shown in Table 9, with the exception of segments of Abbott Avenue, Bacon Street, and Narragansett Avenue, direct project traffic-noise level increases along area roadways would be less than 3 dBA, which is considered a less than significant increase in noise levels. While noise level along Abbott Avenue, between Newport Avenue and Santa Monica Avenue, are estimated to increase by +4 dBA, noise levels 50 feet from the centerline of the roadway would be 60 dBA CNEL, which would be considered a compatible noise level for the most sensitive uses listed in Table 6. Similarly, while increases along Bacon Street, between Narragansett Avenue and Santa Monica Avenue, and Narragansett Avenue, between Sunset Cliffs Boulevard and Froude Street, would be +3 dBA, the noise levels at 50 feet would be 59 and 60 dBA CNEL, respectively. These noise levels would not exceed City compatibility thresholds, thus the increase in ambient noise levels are considered a ***less than significant impact*** on ambient noise levels. The future anticipated noise contours are provided graphically in Figure 6 following Table 10. The future, unshielded, roadway noise contour input and out files is also provided in Attachment B.

## Table 8: Existing Modeled Noise Levels

| Roadway | Segment | CNEL @ 50 Feet | Distance in feet to Noise Level Contour (CNEL) | | |
|---|---|---|---|---|---|
| | | | 70 dB | 65 dB | 60 dB |
| Abbott St | Newport St to Santa Monica Ave | 56 | 2 | 6 | 19 |
| | Santa Monica Ave to W Point Loma Blvd | 56 | 2 | 6 | 19 |
| Bacon St | Santa Cruz Ave to Narragansett Ave | 56 | 2 | 7 | 21 |
| | Narragansett Ave to Santa Monica Ave | 56 | 2 | 7 | 21 |
| | Santa Monica Ave to W Point Loma Blvd | 59 | 4 | 14 | 44 |
| Cable St | Orchard Ave to Narragansett Ave | 57 | 2 | 8 | 24 |
| | Narragansett Ave to Newport Ave | 57 | 2 | 8 | 24 |
| | Newport Ave to W Point Loma Blvd | 74 | 133 | 419 | 1,326 |
| Sunset Cliffs Blvd | Adair St to Narragansett Ave | 64 | 13 | 40 | 128 |
| | Narragansett Ave to Voltaire St | 64 | 12 | 39 | 123 |
| | Voltaire St to W Point Loma Blvd | 65 | 16 | 50 | 157 |
| | W Point Loma Blvd to Nimitz Blvd | 67 | 25 | 79 | 250 |
| | Nimitz Blvd to I-8 WB off-ramp | 74 | 115 | 364 | 1,151 |
| | I-8 WB off-ramp to Sea World Dr | 74 | 115 | 364 | 1,151 |
| Ebers St | Coronado Ave to Narragansett Ave | 57 | 2 | 7 | 23 |
| | Narragansett Ave to Newport Ave | 57 | 2 | 7 | 23 |
| | Newport Ave to Voltaire St | 59 | 4 | 12 | 39 |
| | Voltaire St to W point Loma Blvd | 61 | 6 | 18 | 56 |
| Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 74 | 133 | 419 | 1,326 |
| W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 64 | 13 | 40 | 128 |
| | Sunset Cliffs Blvd to Nimitz Blvd | 65 | 15 | 47 | 147 |
| | Nimitz Blvd to Famosa Blvd | 65 | 17 | 54 | 170 |
| Voltaire St | Abbott St to Bacon St | 56 | 2 | 6 | 20 |
| | Bacon St to Cable St | 58 | 3 | 10 | 31 |
| | Cable St to Sunset Cliffs Blvd | 58 | 3 | 10 | 31 |
| | Sunset Cliffs Blvd to Froude St | 62 | 8 | 24 | 76 |
| Santa Monica Ave | Abbott St to Sunset Cliffs Blvd | 61 | 6 | 18 | 58 |
| Newport Ave | Abbott St to Cable St | 64 | 12 | 36 | 115 |
| | Cable St to Sunset Cliffs Blvd | 62 | 8 | 26 | 82 |
| | Sunset Cliffs Blvd to Froude St | 62 | 8 | 26 | 82 |
| Narragansett Ave | Bacon St to Sunset Cliffs Blvd | 57 | 3 | 8 | 25 |
| | Sunset Cliffs Blvd to Froude St | 57 | 2 | 7 | 23 |
| Orchard Ave | Cable St to Sunset Cliffs Blvd | 55 | 1 | 5 | 14 |
| Point Loma Ave | Sunset Cliffs Blvd to Froude St | 58 | 3 | 10 | 31 |
| I-8 | Sunset Cliffs Blvd to W Mission Bay Dr* | 71 | 58 | 184 | 582 |

## Figure 5: Existing Modeled Transportation Noise Contours

## Table 9: Future Modeled Noise Levels

| Roadway | Segment | CNEL @ 50 Feet | Distance in feet to Noise Level Contour (CNEL) | | |
|---|---|---|---|---|---|
| | | | 70 dB | 65 dB | 60 dB |
| Abbott St | Newport St to Santa Monica Ave | 60 | 2 | 5 | 17 |
| | Santa Monica Ave to W Point Loma Blvd | 58 | 1 | 3 | 10 |
| Bacon St | Santa Cruz Ave to Narragansett Ave | 57 | 1 | 2 | 8 |
| | Narragansett Ave to Santa Monica Ave | 59 | 1 | 4 | 11 |
| | Santa Monica Ave to W Point Loma Blvd | 59 | 1 | 4 | 13 |
| Cable St | Orchard Ave to Narragansett Ave | 57 | 1 | 2 | 8 |
| | Narragansett Ave to Newport Ave | 59 | 1 | 4 | 13 |
| | Newport Ave to W Point Loma Blvd | 76 | 70 | 221 | 699 |
| Sunset Cliffs Blvd | Adair St to Narragansett Ave | 66 | 7 | 22 | 69 |
| | Narragansett Ave to Voltaire St | 65 | 6 | 18 | 56 |
| | Voltaire St to W Point Loma Blvd | 65 | 5 | 17 | 52 |
| | W Point Loma Blvd to Nimitz Blvd | 69 | 11 | 36 | 115 |
| | Nimitz Blvd to I-8 WB off-ramp | 76 | 57 | 181 | 573 |
| | I-8 WB off-ramp to Sea World Dr | 75 | 54 | 170 | 538 |
| Ebers St | Coronado Ave to Narragansett Ave | 58 | 1 | 3 | 10 |
| | Narragansett Ave to Newport Ave | 59 | 1 | 4 | 12 |
| | Newport Ave to Voltaire St | 60 | 2 | 5 | 15 |
| | Voltaire St to W point Loma Blvd | 62 | 3 | 9 | 27 |
| Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 76 | 70 | 221 | 699 |
| W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 66 | 7 | 22 | 69 |
| | Sunset Cliffs Blvd to Nimitz Blvd | 66 | 7 | 21 | 66 |
| | Nimitz Blvd to Famosa Blvd | 65 | 5 | 17 | 54 |
| Voltaire St | Abbott St to Bacon St | 57 | 1 | 3 | 9 |
| | Bacon St to Cable St | 59 | 1 | 4 | 12 |
| | Cable St to Sunset Cliffs Blvd | 60 | 2 | 5 | 15 |
| | Sunset Cliffs Blvd to Froude St | 63 | 3 | 10 | 31 |
| Santa Monica Ave | Abbott St to Sunset Cliffs Blvd | 62 | 2 | 8 | 24 |
| Newport Ave | Abbott St to Cable St | 64 | 4 | 12 | 36 |
| | Cable St to Sunset Cliffs Blvd | 61 | 2 | 7 | 22 |
| | Sunset Cliffs Blvd to Froude St | 61 | 2 | 6 | 19 |
| Narragansett Ave | Bacon St to Sunset Cliffs Blvd | 59 | 1 | 4 | 12 |
| | Sunset Cliffs Blvd to Froude St | 60 | 2 | 5 | 16 |
| Orchard Ave | Cable St to Sunset Cliffs Blvd | 57 | 1 | 3 | 8 |
| Point Loma Ave | Sunset Cliffs Blvd to Froude St | 59 | 1 | 4 | 13 |
| I-8 | Sunset Cliffs Blvd to W Mission Bay Dr* | 73 | 29 | 91 | 288 |

## Table 10: Change in Existing and Future Modeled Noise Levels (dBA at 50 feet)

| Roadway | Segment | Existing CNEL | Future CNEL | Change |
|---|---|---|---|---|
| Abbott St | Newport St to Santa Monica Ave | 56 | 60 | 4 |
| | Santa Monica Ave to W Point Loma Blvd | 56 | 58 | 2 |
| Bacon St | Santa Cruz Ave to Narragansett Ave | 56 | 57 | 1 |
| | Narragansett Ave to Santa Monica Ave | 56 | 59 | 3 |
| | Santa Monica Ave to W Point Loma Blvd | 59 | 59 | 0 |
| Cable St | Orchard Ave to Narragansett Ave | 57 | 57 | 0 |
| | Narragansett Ave to Newport Ave | 57 | 59 | 2 |
| | Newport Ave to W Point Loma Blvd | 74 | 76 | 2 |
| Sunset Cliffs Blvd | Adair St to Narragansett Ave | 64 | 66 | 2 |
| | Narragansett Ave to Voltaire St | 64 | 65 | 1 |
| | Voltaire St to W Point Loma Blvd | 65 | 65 | 0 |
| | W Point Loma Blvd to Nimitz Blvd | 67 | 69 | 2 |
| | Nimitz Blvd to I-8 WB off-ramp | 74 | 76 | 2 |
| | I-8 WB off-ramp to Sea World Dr | 74 | 75 | 1 |
| Ebers St | Coronado Ave to Narragansett Ave | 57 | 58 | 1 |
| | Narragansett Ave to Newport Ave | 57 | 59 | 2 |
| | Newport Ave to Voltaire St | 59 | 60 | 1 |
| | Voltaire St to W point Loma Blvd | 61 | 62 | 1 |
| Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 74 | 76 | 2 |
| W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 64 | 66 | 2 |
| | Sunset Cliffs Blvd to Nimitz Blvd | 65 | 66 | 1 |
| | Nimitz Blvd to Famosa Blvd | 65 | 65 | 0 |
| Voltaire St | Abbott St to Bacon St | 56 | 57 | 1 |
| | Bacon St to Cable St | 58 | 59 | 1 |
| | Cable St to Sunset Cliffs Blvd | 58 | 60 | 2 |
| | Sunset Cliffs Blvd to Froude St | 62 | 63 | 1 |
| Santa Monica Ave | Abbott St to Sunset Cliffs Blvd | 61 | 62 | 1 |
| Newport Ave | Abbott St to Cable St | 64 | 64 | 0 |
| | Cable St to Sunset Cliffs Blvd | 62 | 61 | -1 |
| | Sunset Cliffs Blvd to Froude St | 62 | 61 | -1 |
| Narragansett Ave | Bacon St to Sunset Cliffs Blvd | 57 | 59 | 2 |
| | Sunset Cliffs Blvd to Froude St | 57 | 60 | 3 |
| Orchard Ave | Cable St to Sunset Cliffs Blvd | 55 | 57 | 2 |
| Point Loma Ave | Sunset Cliffs Blvd to Froude St | 58 | 59 | 1 |
| I-8 | Sunset Cliffs Blvd to W Mission Bay Dr* | 71 | 73 | 2 |

## Figure 6: Year 2030 Future Transportation Noise Contours

While traffic noise level increases are anticipated to be less than significant, the Proposed Plan could allow development of new residential uses in areas where noise levels would exceed the City's noise level compatibility standards. Typical residential construction in California provides approximately 10 to 15 dBA of noise reduction from exterior noise sources with windows partially open, and approximately 20 to 25 dBA of noise reduction with windows kept closed. Thus, as a rule of thumb, where exterior noise levels are below 65-dBA CNEL, interior noise levels for new construction would typically meet the interior 45-dBA CNEL standard established in the California Code of Regulations, Title 24.

Additionally, where exterior noise levels are 65 to 70 dBA CNEL, interior noise can be mitigated with standard wall and window construction, and the inclusion of mechanical forced-air ventilation to allow occupants the option of maintaining windows closed to control noise. Where exterior noise levels exceed 70 dBA CNEL, residential units would not normally be able to meet the 45-dBA CNEL interior standard through typical construction methods. Thus, noise-sensitive uses located within the 70 dBA CNEL may require additional noise-reduction measures, such as windows and doors with high Sound Transition Class (STC) ratings to meet the 45-dBA CNEL criteria. The areas within the 65-dBA CNEL contour would be a potentially impacted and mitigation measures have been identified that would reduce this ***potentially significant impact***.

Commercial uses developed under the Project along most of the Plan area roadways would meet the 1-hour exterior commercial land use compatibility guidelines. The interior criterion for commercial sales and offices is 50 dBA CNEL. As indicated, the majority of commercial land uses are located along Newport Avenue, Santa Monica, Voltaire Street, Bacon Street, and Sunset Cliffs Boulevard. As shown in Table 9, noise levels along these roadways would be 65 dBA CNEL or less at 50 feet, with the exception of portions of Sunset Cliffs Boulevard north of the West Point Loma Boulevard. However, the 65 dBA CNEL contour would fall approximately 36 feet from the centerline of the roadway and would fall near the edge of the roadway at this location. Thus, neither of these locations would be exposed to noise levels in excess of the City compatibility standards from Plan related traffic noise. This would be a ***less-than-significant impact***.

## 6.3 OPERATIONAL NOISE

Development projects implemented under the Proposed Plan often include residential uses located in proximity to commercial uses and along major roadways. New residential and mixed-use development that could occur with implementation of the Proposed Plan would potentially be constructed within the same building or adjacent to commercial land uses.

Noise sources associated with commercial land uses include mechanical equipment operations,

public address systems, parking lot noise (e.g., opening and closing of vehicle doors, people talking, car alarms), delivery activities (e.g., use of forklifts, hydraulic lifts), trash compactors, and air compressors. Noise from such equipment can reach intermittent levels of approximately 90 dBA, 50 feet from the source (EPA 1974). These elevated noise levels that have the potential to be generated by commercial uses within mixed-use land use designations would expose nearby noise-sensitive land uses (e.g., residential units) to excessive noise levels that may violate the City Noise Ordinance.

The juxtaposition of potential future land uses could result in significant noise impacts. While the applicable regulations and policies would reduce direct and indirect impacts associated with the generation of noise levels in excess of standards established in the General Plan or Noise Ordinance, no project level site plans have been proposed as part of the Proposed Plan. Without detailed operational data and plans it cannot be verified that future projects would be capable of reducing noise levels to comply with City standards. As the degree of success of regulations cannot be adequately known for specific projects at a program level of analysis mitigation would be required to provide verification City standards have been met. As a result, this impact is ***potentially significant***. Mitigation measures have been identified that would reduce this impact to less than significant.

## 6.4 VIBRATION

Commercial operations have, on occasion, been known to utilize equipment or processes that have a potential to generate groundborne vibration. However, vibrations found to be excessive for human exposure that are the result of commercial machinery are generally addressed from an occupational health and safety perspective. The residual vibrations are typically of such low amplitude that they quickly dissipate into the surrounding soil and are rarely perceivable at the surrounding land uses.

Distribution of materials to and from commercial land uses can have the potential to generate higher levels of groundborne vibration than that of the mechanical equipment. Heavy trucks used for delivery and distribution of materials to commercial sites generally operate at very low speeds. Therefore, the groundborne vibration induced by heavy truck traffic at commercial land uses is not anticipated to be perceptible at distances greater than 25 feet (typical distance from roadway centerline to edge of roadway right-of-way for a single-lane road).

Based on the operational characteristics of mechanical equipment used for commercial land uses, it is not anticipated that the operations would result in groundborne vibration levels that approach or exceed applicable vibration-level limits. This would be a ***less-than-significant*** impact.

Construction of projects implemented under the Project would likely be located adjacent to existing structures. Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. Demolition for an individual site may last several weeks to months and may produce substantial vibration. Excavation for underground levels could also occur on some project sites and vibratory pile driving could be used to stabilize the walls of excavated areas. Piles or drilled caissons may also be used to support building foundations.

Pile driving has the potential to generate the highest groundborne vibration levels and is the primary concern for structural damage when it occurs within 100 feet of structures. Vibration levels generated by pile driving activities would vary depending on project conditions, such as soil conditions, construction methods, and equipment used. Pile driving activities generate vibrations at various frequencies. The dominant frequency of propagating waves from impact sources ranges mostly between 3 Hz and 60 Hz (Svinkin 1992). Using the middle range for illustration purposes, equipment operating at a frequency range of 30 Hz would exceed the perceptible range at approximately 100 feet. Depending on the proximity of existing structures to each construction site, the structural soundness of the existing buildings, and the methods of construction used, vibration levels caused by pile driving or other foundation work with a substantial impact component such as rock or caisson drilling, and site excavation or compaction may be high enough to be perceptible within 150 feet and may be high enough to damage existing structures within 50 feet. This would represent a ***potentially significant impact*** at sensitive receptors.

Other project construction activities, such as site preparation work, excavation of parking and subfloors, foundation work, and building construction, and the use of jackhammers, other high-power or vibratory tools, compactors, and tracked equipment, may also potentially generate substantial vibration in the immediate vicinity, typically within 25 feet of the equipment. Thus, typical building construction is not anticipated to be a source of substantial vibration. By use of administrative controls, such as scheduling, typical construction activities would be restricted to hours with least potential to affect nearby properties. Thus, perceptible vibration can be kept to a minimum and, as such, typical construction activities would result in a ***less than significant*** impact with respect to perception.

## 6.5 CUMULATIVE NOISE

The cumulative study area for noise was determined to include those roadway segments throughout the plan area and the immediate community that would have an increase in traffic as a result of the Proposed Plan and, thus, a potential increase in noise. Other noise sources, such as construction and operation of mechanical equipment, are temporary and more localized and controlled at the source such that they do not typically combine with other sources to

create cumulative noise impacts. Additionally, identified mitigation measures would reduce project-level impacts to less than significant, thus, these sources are not considered in the cumulative noise assessment. Cumulative traffic noise levels (i.e., existing plus future with Proposed Plan), were estimated using future traffic volumes from the traffic report and are presented in Tables 8 and 9.

As shown in Tables 8 and 9, while traffic noise would increase by 3 dBA or more along three project roadways, the increases would be considered less than significant as the future ultimate noise levels at the subject properties would comply with the City noise and land use compatibility guidelines as presented in Table 6. Thus, operation associated the Project would not contribute to a cumulatively significant increase to ambient traffic noise levels along these roadways.

## 7.0 NOISE ABATEMENT AND MITIGATION MEASURES

Implementation of the policies in the Community Plan and General Plan would preclude or reduce traffic noise impacts. In addition, the City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA as well as an analysis of those projects for consistency with the goals, policies and recommendations of the General Plan. Compliance with the standards is required of all projects and is not considered to be mitigation. However, it is possible that for certain projects, adherence to the regulations may not adequately reduce noise levels, and such projects would require additional measures to comply with applicable standards. Thus, to reduce potential noise-related impacts, the City will verify that the following mitigation measures are incorporated into each project, as applicable.

### 7.1 CONSTRUCTION

N-1 The following measures are required of all construction projects implemented under the Proposed Plan to reduce noise associated with construction:

- All internal combustion-engine-driven equipment will be equipped with mufflers that are in good operating condition and appropriate for the equipment.
- "Quiet" models of air compressors and other stationary construction equipment will be employed where such technology exists.
- Stationary noise-generating equipment will be located as far as reasonable from sensitive receptors when sensitive receptors adjoin or are within 150 feet of a construction site.
- Unnecessary idling of internal combustion engines (i.e., in excess of 5 minutes) will be prohibited.
- Foundation pile holes will be predrilled, as feasible based on geologic conditions, to minimize the number of impacts required to seat the pile.
- Construction-related traffic will be routed along major roadways and away from noise-sensitive receptors.
- Construction activities, including the loading and unloading of materials and truck movements, will be limited to the hours specified in the City Noise Ordinance (Section 8.80.202).
- Businesses, residences, and noise-sensitive land uses within 150 feet of construction sites will be notified of the construction in writing. The notification will describe the activities anticipated, provide dates and hours, and provide contact information with a description of the complaint and response procedure.
- Each project implemented as part of the Project will designate a "construction liaison" that will be responsible for responding to any local complaints about construction noise. The liaison will determine the cause of the noise complaints (starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. A telephone number for the liaison will be conspicuously posted at the construction site.

- If a noise complaint(s) is registered, the liaison or project representative will retain a City-approved noise consultant to conduct noise measurements at the location where the complaint was registered. The noise measurements will be conducted for a minimum of 1 hour and will include 1-minute intervals. The consultant will prepare a letter report summarizing the measurements and potential measures to reduce noise levels to the maximum extent feasible. The letter report will include all measurement and calculation data used in determining impacts and resolutions, and will provide code enforcement for determining if the recommendations are adequate.

N-2 The following measures are required of all construction projects within 150 feet of residential uses implemented under the Proposed Plan to reduce noise impacts associated with construction:

- Temporary noise barriers will be constructed around construction sites adjacent to, or within 150 feet of, operational business, residences, or other noise-sensitive land uses. Temporary noise barriers must be constructed of material with a minimum weight of 3 pounds per square foot with no gaps or perforations. Noise barriers may be constructed of, but are not limited to, 5/8-inch plywood, 5/8-inch oriented strand board, or hay bales.
- A temporary sound-control blanket barrier will be erected, if necessary, along building façades facing construction sites. This mitigation would only be necessary if conflicts occurred that were irresolvable by proper scheduling, and other means of noise control were unavailable. The sound blankets are required to have a minimum breaking and tear strength of 120 pounds and 30 pounds, respectively. The sound blankets will have a minimum sound transmission classification of 27 and noise-reduction coefficient of 0.70. The sound blankets will be of sufficient length to extend from the top of the building and drape onto the ground or be sealed at the ground. The sound blankets will have a minimum overlap of 2 inches.

Significance after mitigation: Less than significant.

## 7.2 NOISE COMPATIBILITY

N-3 In areas where new residential development would be exposed to a CNEL of greater than 60 dBA, site-specific noise studies will be conducted to determine the area of impact and to present appropriate mitigation measures, which may include the following:

- Use site planning to minimize noise in shared residential outdoor activity areas by locating the areas behind the buildings or in courtyards, or orienting the terraces to alleyways rather than streets whenever possible.
- Provide mechanical ventilation in all residential units proposed along roadways or in areas where noise levels could exceed interior noise standards such that windows can

remain closed at the choice of the occupants to maintain interior noise levels below 45 dBA CNEL.

- Install sound-rated windows and construction methods to provide the requisite noise control for residential units proposed along roadways or in areas where noise levels could exceed 70 dBA CNEL.
- Work with the Airport Land Use Commission to implement the adopted Airport Land Use Compatibility Plan policies and criteria affecting the Ocean Beach community.
- Submit all Ocean Beach Community Plan amendments within the Airport Influence Area to the Airport Land Use Commission for a consistency determination with the adopted Airport Land Use Compatibility Plan.

Significance after mitigation: Less than significant.

N-4 In areas where new commercial development would be exposed to a CNEL of greater than 65 dBA, site-specific noise studies will be conducted to determine the area of impact and to present appropriate mitigation measures, which may include the following:

- Use site planning to minimize noise within exterior use areas intended for public gathering or as employee break areas by locating these areas behind the buildings or in courtyards, or orienting the terraces to alleyways rather than streets whenever possible.
- Install sound-rated windows and construction methods to provide the requisite noise control for developments proposed along roadways or in areas where noise levels could exceed 70 dBA CNEL.

Significance after mitigation: Less than significant.

## 7.3 OPERATION

N-5 Limit exterior noise levels in noise-sensitive outdoor use areas resulting from nontransportation noise sources to those contained in Section 9.20.040 of the City Municipal Code. Meeting these noise performance standards would be the responsibility of the developer of the proposed use and not the responsibility of the existing use. In areas where new residential development would be located adjacent to noise-generating uses, site-specific noise studies should be conducted to determine the area of impact and to present appropriate mitigation measures, which could include, but are not limited to the following:

- Require the placement of loading and unloading areas so that commercial buildings shield nearby residential land uses from noise generated by loading dock and delivery activities. If necessary, additional sound barriers shall be constructed on the commercial sites to protect nearby noise-sensitive uses.

- Require the placement of all commercial heating, ventilation, and air conditioning (HVAC) machinery to be placed within mechanical equipment rooms wherever possible.

- Require the provision of localized noise barriers or rooftop parapets around HVAC, cooling towers, and mechanical equipment so that line-of-sight to the noise source from the property line of the noise-sensitive receptors is blocked.

Significance after mitigation: Less than significant.

## 7.4 VIBRATION

N-6 The following measures are required of all construction projects implemented under the Proposed Plan to reduce vibration from construction activities:

- Avoid impact pile driving where possible.
- Drill piles where geological conditions permit their use.
- Avoid using vibratory rollers and tampers near sensitive areas.

N-7 For projects where construction will include vibration-generating activities, such as pile driving, within 500 feet of existing structures, site-specific vibration studies shall be conducted to determine the area of impact and to present appropriate mitigation measures that may include the following:

- Identify sites that would include vibration compaction activities such as pile driving and have the potential to generate groundborne vibration, and the sensitivity of nearby structures to groundborne vibration. This task should be conducted by a qualified structural engineer.
- Develop a vibration monitoring and construction contingency plan to identify structures where monitoring would be conducted; set up a vibration monitoring schedule; define structure-specific vibration limits; and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions. Construction contingencies would be identified for when vibration levels approached the limits.
- At a minimum, monitor vibration during initial demolition activities and during pile driving activities. Monitoring results may indicate the need for more or less intensive measurements.
- When vibration levels approach limits, suspend construction and implement contingencies to either lower vibration levels or secure the affected structures.
- Conduct post-surveys on structures where either monitoring has indicated high levels of vibration or complaints of damage have been made. Make appropriate repairs or compensation where damage has occurred as a result of construction activities.

Significance after mitigation: Potentially Significant.

## 8.0 REFERENCES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1974 Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March.

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2012 Ocean Beach Buildout Conditions, Traffic Impact Study, Final Report, July.

# ATTACHMENT A

DETAILED AMBIENT NOISE MEASUREMENT
DATA

## General Information

| | | |
|---|---|---|
| Serial Number | 02412 | |
| Model | LxT1 | |
| Firmware Version | 1.512 | |
| Filename | LxT_Data.058 | |
| User | | |
| Job Description | | |
| Location | | |
| | | |
| Measurement Description | DIX | |
| Start Time | Tuesday, 2012 October 16 13:30:02 | |
| Stop Time | Tuesday, 2012 October 16 13:46:23 | |
| Duration | 00:16:21.0 | |
| Run Time | 00:14:22.5 | |
| Pause | 00:01:58.5 | |
| Pre Calibration | Tuesday, 2012 October 16 13:28:05 | |
| Post Calibration | None | |
| Calibration Deviation | --- | |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 61.3 | dB |
| LASmax | 2012 Oct 16 13:45:19 | 72.1 | dB |
| LApeak (max) | 2012 Oct 16 13:45:19 | 85.5 | dB |
| LASmin | 2012 Oct 16 13:41:59 | 51.2 | dB |
| LCeq | | 72.0 | dB |
| LAeq | | 61.3 | dB |
| LCeq - LAeq | | 10.7 | dB |
| LAIeq | | 62.8 | dB |
| LAeq | | 61.3 | dB |
| LAIeq - LAeq | | 1.5 | dB |
| Ldn | | 61.3 | dB |
| LDay 07:00-22:00 | | 61.3 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 61.3 | dB |
| LDay 07:00-19:00 | | 61.3 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 90.7 | dB |
| EA | | 129.7 | µPa²h |
| EA8 | | 4.330 | mPa²h |
| EA40 | | 21.65 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | |
|---|---|---|
| LAS5.00 | 67.4 | dBA |
| LAS10.00 | 65.9 | dBA |
| LAS33.30 | 59.8 | dBA |
| LAS50.00 | 56.0 | dBA |
| LAS66.60 | 54.5 | dBA |
| LAS90.00 | 52.8 | dBA |
| | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |

## Dose

| | | |
|---|---|---|
| Name | OSHA-1 | |
| Dose | 0.00 | % |
| Projected Dose | 0.14 | % |
| TWA (Projected) | 61.3 | dBA |
| TWA (t) | 46.1 | dBA |
| Lep (t) | 46.1 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.059 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Tuesday, 2012 October 16 13:54:05 |
| Stop Time | Tuesday, 2012 October 16 14:10:22 |
| Duration | 00:16:17.2 |
| Run Time | 00:16:17.2 |
| Pause | 00:00:00.0 |
| Pre Calibration | Tuesday, 2012 October 16 13:28:02 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 63.0 | dB |
| LASmax | 2012 Oct 16 14:02:41 | 80.5 | dB |
| LApeak (max) | 2012 Oct 16 13:59:20 | 97.3 | dB |
| LASmin | 2012 Oct 16 14:04:48 | 49.9 | dB |
| LCeq | | 72.6 | dB |
| LAeq | | 63.0 | dB |
| LCeq - LAeq | | 9.6 | dB |
| LAIeq | | 64.7 | dB |
| LAeq | | 63.0 | dB |
| LAIeq - LAeq | | 1.8 | dB |
| Ldn | | 63.0 | dB |
| LDay 07:00-22:00 | | 63.0 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 63.0 | dB |
| LDay 07:00-19:00 | | 63.0 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 92.9 | dB |
| EA | | 215.5 | µPa²h |
| EA8 | | 6.351 | mPa²h |
| EA40 | | 31.75 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 68.4 | dBA |
| LAS10.00 | | 64.6 | dBA |
| LAS33.30 | | 57.3 | dBA |
| LAS50.00 | | 54.9 | dBA |
| LAS66.60 | | 53.6 | dBA |
| LAS90.00 | | 52.1 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.05 | % |
| Projected Dose | 0.20 | 1.55 | % |
| TWA (Projected) | 63.0 | 59.9 | dBA |
| TWA (t) | 48.3 | 35.5 | dBA |
| Lep (t) | 48.3 | 48.3 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.060 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Tuesday, 2012 October 16 14:25:35 |
| Stop Time | Tuesday, 2012 October 16 14:47:07 |
| Duration | 00:21:30.8 |
| Run Time | 00:14:23.0 |
| Pause | 00:07:07.8 |
| Pre Calibration | Tuesday, 2012 October 16 13:28:02 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 64.6 | dB |
| LASmax | 2012 Oct 16 14:34:01 | 77.9 | dB |
| LApeak (max) | 2012 Oct 16 14:39:59 | 99.4 | dB |
| LASmin | 2012 Oct 16 14:27:13 | 53.0 | dB |
| LCeq | | 74.3 | dB |
| LAeq | | 64.6 | dB |
| LCeq - LAeq | | 9.6 | dB |
| LAIeq | | 66.4 | dB |
| LAeq | | 64.6 | dB |
| LAIeq - LAeq | | 1.8 | dB |
| Ldn | | 64.6 | dB |
| LDay 07:00-22:00 | | 64.6 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 64.6 | dB |
| LDay 07:00-19:00 | | 64.6 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 94.0 | dB |
| EA | | 278.2 | µPa²h |
| EA8 | | 9.285 | mPa²h |
| EA40 | | 46.43 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 69.8 | dBA |
| LAS10.00 | | 67.5 | dBA |
| LAS33.30 | | 63.0 | dBA |
| LAS50.00 | | 60.4 | dBA |
| LAS66.60 | | 58.6 | dBA |
| LAS90.00 | | 55.8 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.07 | % |
| Projected Dose | 0.29 | 2.42 | % |
| TWA (Projected) | 64.6 | 63.1 | dBA |
| TWA (t) | 49.4 | 37.8 | dBA |
| Lep (t) | 49.4 | 49.4 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.061 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Tuesday, 2012 October 16 14:54:47 |
| Stop Time | Tuesday, 2012 October 16 15:09:59 |
| Duration | 00:15:11.5 |
| Run Time | 00:15:11.5 |
| Pause | 00:00:00.0 |
| Pre Calibration | Tuesday, 2012 October 16 13:28:02 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 66.4 | dB |
| LASmax | 2012 Oct 16 15:05:10 | 82.2 | dB |
| LApeak (max) | 2012 Oct 16 15:05:09 | 94.9 | dB |
| LASmin | 2012 Oct 16 14:55:01 | 45.9 | dB |
| LCeq | | 77.6 | dB |
| LAeq | | 66.4 | dB |
| LCeq - LAeq | | 11.2 | dB |
| LAIeq | | 67.6 | dB |
| LAeq | | 66.4 | dB |
| LAIeq - LAeq | | 1.2 | dB |
| Ldn | | 66.4 | dB |
| LDay 07:00-22:00 | | 66.4 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 66.4 | dB |
| LDay 07:00-19:00 | | 66.4 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 96.0 | dB |
| EA | | 440.6 | µPa²h |
| EA8 | | 13.92 | mPa²h |
| EA40 | | 69.61 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 74.2 | dBA |
| LAS10.00 | | 69.2 | dBA |
| LAS33.30 | | 61.6 | dBA |
| LAS50.00 | | 59.2 | dBA |
| LAS66.60 | | 56.6 | dBA |
| LAS90.00 | | 50.3 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.08 | % |
| Projected Dose | 0.44 | 2.57 | % |
| TWA (Projected) | 66.4 | 63.6 | dBA |
| TWA (t) | 51.4 | 38.7 | dBA |
| Lep (t) | 51.4 | 51.4 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.062 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Tuesday, 2012 October 16 15:17:39 |
| Stop Time | Tuesday, 2012 October 16 15:33:27 |
| Duration | 00:15:48.8 |
| Run Time | 00:15:48.8 |
| Pause | 00:00:00.0 |
| Pre Calibration | Tuesday, 2012 October 16 13:28:02 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 67.9 | dB |
| LASmax | 2012 Oct 16 15:32:02 | 85.3 | dB |
| LApeak (max) | 2012 Oct 16 15:32:04 | 102.1 | dB |
| LASmin | 2012 Oct 16 15:24:57 | 45.2 | dB |
| LCeq | | 78.6 | dB |
| LAeq | | 67.9 | dB |
| LCeq - LAeq | | 10.7 | dB |
| LAIeq | | 70.2 | dB |
| LAeq | | 67.9 | dB |
| LAIeq - LAeq | | 2.3 | dB |
| Ldn | | 67.9 | dB |
| LDay 07:00-22:00 | | 67.9 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 67.9 | dB |
| LDay 07:00-19:00 | | 67.9 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 97.7 | dB |
| EA | | 650.2 | µPa²h |
| EA8 | | 19.74 | mPa²h |
| EA40 | | 98.69 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | |
|---|---|---|
| LAS5.00 | 73.0 | dBA |
| LAS10.00 | 70.8 | dBA |
| LAS33.30 | 67.2 | dBA |
| LAS50.00 | 65.5 | dBA |
| LAS66.60 | 63.4 | dBA |
| LAS90.00 | 55.4 | dBA |
| | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | 1 / 1.1 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.02 | 0.13 | % |
| Projected Dose | 0.62 | 3.90 | % |
| TWA (Projected) | 67.9 | 66.6 | dBA |
| TWA (t) | 53.1 | 42.0 | dBA |
| Lep (t) | 53.1 | 53.1 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.063 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Tuesday, 2012 October 16 15:39:28 |
| Stop Time | Tuesday, 2012 October 16 15:54:48 |
| Duration | 00:15:19.1 |
| Run Time | 00:15:19.1 |
| Pause | 00:00:00.0 |
| Pre Calibration | Tuesday, 2012 October 16 13:28:02 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 61.4 | dB |
| LASmax | 2012 Oct 16 15:52:53 | 86.0 | dB |
| LApeak (max) | 2012 Oct 16 15:52:53 | 109.6 | dB |
| LASmin | 2012 Oct 16 15:44:58 | 44.9 | dB |
| LCeq | | 70.1 | dB |
| LAeq | | 61.4 | dB |
| LCeq - LAeq | | 8.7 | dB |
| LAIeq | | 67.4 | dB |
| LAeq | | 61.4 | dB |
| LAIeq - LAeq | | 6.0 | dB |
| Ldn | | 61.4 | dB |
| LDay 07:00-22:00 | | 61.4 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 61.4 | dB |
| LDay 07:00-19:00 | | 61.4 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 91.0 | dB |
| EA | | 141.0 | µPa²h |
| EA8 | | 4.418 | mPa²h |
| EA40 | | 22.09 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 66.2 | dBA |
| LAS10.00 | | 63.7 | dBA |
| LAS33.30 | | 55.8 | dBA |
| LAS50.00 | | 51.5 | dBA |
| LAS66.60 | | 49.1 | dBA |
| LAS90.00 | | 47.0 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 1 / 0.9 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.00 | 0.04 | % |
| Projected Dose | 0.14 | 1.14 | % |
| TWA (Projected) | 61.4 | 57.7 | dBA |
| TWA (t) | 46.4 | 32.9 | dBA |
| Lep (t) | 46.4 | 46.4 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.064 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Tuesday, 2012 October 16 16:02:30 |
| Stop Time | Tuesday, 2012 October 16 16:18:23 |
| Duration | 00:15:52.5 |
| Run Time | 00:15:52.5 |
| Pause | 00:00:00.0 |
| Pre Calibration | Tuesday, 2012 October 16 13:28:02 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 68.8 | dB |
| LASmax | 2012 Oct 16 16:12:54 | 84.2 | dB |
| LApeak (max) | 2012 Oct 16 16:12:54 | 98.1 | dB |
| LASmin | 2012 Oct 16 16:12:04 | 53.2 | dB |
| LCeq | | 79.9 | dB |
| LAeq | | 68.8 | dB |
| LCeq - LAeq | | 11.1 | dB |
| LAIeq | | 70.9 | dB |
| LAeq | | 68.8 | dB |
| LAIeq - LAeq | | 2.1 | dB |
| Ldn | | 68.8 | dB |
| LDay 07:00-22:00 | | 68.8 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 68.8 | dB |
| LDay 07:00-19:00 | | 68.8 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 98.6 | dB |
| EA | | 798.8 | µPa²h |
| EA8 | | 24.15 | mPa²h |
| EA40 | | 120.8 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 73.6 | dBA |
| LAS10.00 | | 71.7 | dBA |
| LAS33.30 | | 68.3 | dBA |
| LAS50.00 | | 66.2 | dBA |
| LAS66.60 | | 63.6 | dBA |
| LAS90.00 | | 58.9 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.02 | 0.15 | % |
| Projected Dose | 0.75 | 4.44 | % |
| TWA (Projected) | 68.8 | 67.5 | dBA |
| TWA (t) | 54.0 | 42.9 | dBA |
| Lep (t) | 54.0 | 54.0 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.065 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Tuesday, 2012 October 16 16:27:27 |
| Stop Time | Tuesday, 2012 October 16 16:42:49 |
| Duration | 00:15:21.9 |
| Run Time | 00:15:21.9 |
| Pause | 00:00:00.0 |
| Pre Calibration | Tuesday, 2012 October 16 13:28:02 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 57.9 | dB |
| LASmax | 2012 Oct 16 16:38:49 | 68.7 | dB |
| LApeak (max) | 2012 Oct 16 16:37:11 | 89.7 | dB |
| LASmin | 2012 Oct 16 16:31:47 | 43.9 | dB |
| LCeq | | 69.6 | dB |
| LAeq | | 57.9 | dB |
| LCeq - LAeq | | 11.7 | dB |
| LAIeq | | 59.8 | dB |
| LAeq | | 57.9 | dB |
| LAIeq - LAeq | | 1.9 | dB |
| Ldn | | 57.9 | dB |
| LDay 07:00-22:00 | | 57.9 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 57.9 | dB |
| LDay 07:00-19:00 | | 57.9 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 87.6 | dB |
| EA | | 63.36 | µPa²h |
| EA8 | | 1.979 | mPa²h |
| EA40 | | 9.897 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | |
|---|---|---|
| LAS5.00 | 65.6 | dBA |
| LAS10.00 | 62.5 | dBA |
| LAS33.30 | 54.5 | dBA |
| LAS50.00 | 50.1 | dBA |
| LAS66.60 | 47.4 | dBA |
| LAS90.00 | 45.7 | dBA |
| | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.00 | 0.03 | % |
| Projected Dose | 0.06 | 0.87 | % |
| TWA (Projected) | 57.9 | 55.8 | dBA |
| TWA (t) | 43.0 | 30.9 | dBA |
| Lep (t) | 43.0 | 43.0 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.066 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 12:59:49 |
| Stop Time | Wednesday, 2012 October 17 13:15:10 |
| Duration | 00:15:21.6 |
| Run Time | 00:15:21.6 |
| Pause | 00:00:00.0 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 59.7 | dB |
| LASmax | 2012 Oct 17 13:11:14 | 74.7 | dB |
| LApeak (max) | 2012 Oct 17 13:11:13 | 89.6 | dB |
| LASmin | 2012 Oct 17 13:05:10 | 47.8 | dB |
| LCeq | | 72.2 | dB |
| LAeq | | 59.7 | dB |
| LCeq - LAeq | | 12.5 | dB |
| LAIeq | | 61.4 | dB |
| LAeq | | 59.7 | dB |
| LAIeq - LAeq | | 1.7 | dB |
| Ldn | | 59.7 | dB |
| LDay 07:00-22:00 | | 59.7 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 59.7 | dB |
| LDay 07:00-19:00 | | 59.7 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 89.3 | dB |
| EA | | 95.55 | µPa²h |
| EA8 | | 2.986 | mPa²h |
| EA40 | | 14.93 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 65.3 | dBA |
| LAS10.00 | | 63.4 | dBA |
| LAS33.30 | | 58.0 | dBA |
| LAS50.00 | | 55.7 | dBA |
| LAS66.60 | | 53.5 | dBA |
| LAS90.00 | | 50.2 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.00 | 0.04 | % |
| Projected Dose | 0.09 | 1.22 | % |
| TWA (Projected) | 59.7 | 58.2 | dBA |
| TWA (t) | 44.7 | 33.4 | dBA |
| Lep (t) | 44.8 | 44.8 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.067 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 13:20:36 |
| Stop Time | Wednesday, 2012 October 17 13:40:20 |
| Duration | 00:19:44.3 |
| Run Time | 00:08:47.4 |
| Pause | 00:10:56.9 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 68.2 | dB |
| LASmax | 2012 Oct 17 13:39:03 | 79.8 | dB |
| LApeak (max) | 2012 Oct 17 13:38:07 | 98.3 | dB |
| LASmin | 2012 Oct 17 13:20:44 | 46.8 | dB |
| LCeq | | 76.6 | dB |
| LAeq | | 68.2 | dB |
| LCeq - LAeq | | 8.3 | dB |
| LAIeq | | 70.5 | dB |
| LAeq | | 68.2 | dB |
| LAIeq - LAeq | | 2.2 | dB |
| Ldn | | 68.2 | dB |
| LDay 07:00-22:00 | | 68.2 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 68.2 | dB |
| LDay 07:00-19:00 | | 68.2 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 95.5 | dB |
| EA | | 390.8 | µPa²h |
| EA8 | | 21.34 | mPa²h |
| EA40 | | 106.7 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 73.4 | dBA |
| LAS10.00 | | 71.2 | dBA |
| LAS33.30 | | 67.7 | dBA |
| LAS50.00 | | 65.3 | dBA |
| LAS66.60 | | 62.6 | dBA |
| LAS90.00 | | 55.3 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.07 | % |
| Projected Dose | 0.66 | 4.02 | % |
| TWA (Projected) | 68.2 | 66.8 | dBA |
| TWA (t) | 50.8 | 38.0 | dBA |
| Lep (t) | 50.9 | 50.9 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.068 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 13:45:32 |
| Stop Time | Wednesday, 2012 October 17 14:00:46 |
| Duration | 00:15:13.7 |
| Run Time | 00:15:13.7 |
| Pause | 00:00:00.0 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 59.7 | dB |
| LASmax | 2012 Oct 17 13:53:09 | 73.5 | dB |
| LApeak (max) | 2012 Oct 17 13:49:54 | 89.9 | dB |
| LASmin | 2012 Oct 17 13:54:27 | 44.5 | dB |
| LCeq | | 68.7 | dB |
| LAeq | | 59.7 | dB |
| LCeq - LAeq | | 9.0 | dB |
| LAIeq | | 61.6 | dB |
| LAeq | | 59.7 | dB |
| LAIeq - LAeq | | 1.9 | dB |
| Ldn | | 59.7 | dB |
| LDay 07:00-22:00 | | 59.7 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 59.7 | dB |
| LDay 07:00-19:00 | | 59.7 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 89.3 | dB |
| EA | | 95.28 | µPa²h |
| EA8 | | 3.003 | mPa²h |
| EA40 | | 15.02 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 65.6 | dBA |
| LAS10.00 | | 63.0 | dBA |
| LAS33.30 | | 56.1 | dBA |
| LAS50.00 | | 51.7 | dBA |
| LAS66.60 | | 50.0 | dBA |
| LAS90.00 | | 47.7 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.00 | 0.03 | % |
| Projected Dose | 0.09 | 1.07 | % |
| TWA (Projected) | 59.7 | 57.3 | dBA |
| TWA (t) | 44.7 | 32.4 | dBA |
| Lep (t) | 44.7 | 44.7 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.069 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 14:06:29 |
| Stop Time | Wednesday, 2012 October 17 14:22:01 |
| Duration | 00:15:32.1 |
| Run Time | 00:15:32.1 |
| Pause | 00:00:00.0 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 61.8 | dB |
| LASmax | 2012 Oct 17 14:14:43 | 76.3 | dB |
| LApeak (max) | 2012 Oct 17 14:14:43 | 89.0 | dB |
| LASmin | 2012 Oct 17 14:11:14 | 54.0 | dB |
| LCeq | | 71.5 | dB |
| LAeq | | 61.8 | dB |
| LCeq - LAeq | | 9.7 | dB |
| LAIeq | | 63.6 | dB |
| LAeq | | 61.8 | dB |
| LAIeq - LAeq | | 1.7 | dB |
| Ldn | | 61.8 | dB |
| LDay 07:00-22:00 | | 61.8 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 61.8 | dB |
| LDay 07:00-19:00 | | 61.8 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 91.5 | dB |
| EA | | 157.9 | µPa²h |
| EA8 | | 4.878 | mPa²h |
| EA40 | | 24.39 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 66.1 | dBA |
| LAS10.00 | | 62.3 | dBA |
| LAS33.30 | | 58.5 | dBA |
| LAS50.00 | | 57.8 | dBA |
| LAS66.60 | | 57.0 | dBA |
| LAS90.00 | | 55.7 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.00 | 0.05 | % |
| Projected Dose | 0.15 | 1.58 | % |
| TWA (Projected) | 61.8 | 60.1 | dBA |
| TWA (t) | 46.9 | 35.3 | dBA |
| Lep (t) | 46.9 | 46.9 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.070 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 14:28:33 |
| Stop Time | Wednesday, 2012 October 17 14:43:49 |
| Duration | 00:15:16.6 |
| Run Time | 00:15:16.6 |
| Pause | 00:00:00.0 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 63.6 | dB |
| LASmax | 2012 Oct 17 14:32:25 | 77.3 | dB |
| LApeak (max) | 2012 Oct 17 14:42:08 | 99.1 | dB |
| LASmin | 2012 Oct 17 14:30:30 | 53.0 | dB |
| LCeq | | 75.3 | dB |
| LAeq | | 63.6 | dB |
| LCeq - LAeq | | 11.7 | dB |
| LAIeq | | 66.1 | dB |
| LAeq | | 63.6 | dB |
| LAIeq - LAeq | | 2.5 | dB |
| Ldn | | 63.6 | dB |
| LDay 07:00-22:00 | | 63.6 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 63.6 | dB |
| LDay 07:00-19:00 | | 63.6 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 93.3 | dB |
| EA | | 236.0 | µPa²h |
| EA8 | | 7.414 | mPa²h |
| EA40 | | 37.07 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 68.1 | dBA |
| LAS10.00 | | 66.4 | dBA |
| LAS33.30 | | 61.7 | dBA |
| LAS50.00 | | 59.9 | dBA |
| LAS66.60 | | 58.0 | dBA |
| LAS90.00 | | 55.1 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.07 | % |
| Projected Dose | 0.23 | 2.09 | % |
| TWA (Projected) | 63.6 | 62.1 | dBA |
| TWA (t) | 48.7 | 37.2 | dBA |
| Lep (t) | 48.7 | 48.7 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.071 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 14:51:04 |
| Stop Time | Wednesday, 2012 October 17 15:06:19 |
| Duration | 00:15:14.3 |
| Run Time | 00:15:14.3 |
| Pause | 00:00:00.0 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 63.0 | dB |
| LASmax | 2012 Oct 17 14:52:30 | 77.1 | dB |
| LApeak (max) | 2012 Oct 17 14:56:49 | 89.2 | dB |
| LASmin | 2012 Oct 17 14:56:02 | 55.8 | dB |
| LCeq | | 74.3 | dB |
| LAeq | | 63.0 | dB |
| LCeq - LAeq | | 11.3 | dB |
| LAIeq | | 64.4 | dB |
| LAeq | | 63.0 | dB |
| LAIeq - LAeq | | 1.4 | dB |
| Ldn | | 63.0 | dB |
| LDay 07:00-22:00 | | 63.0 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 63.0 | dB |
| LDay 07:00-19:00 | | 63.0 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 92.6 | dB |
| EA | | 202.4 | µPa²h |
| EA8 | | 6.375 | mPa²h |
| EA40 | | 31.88 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | |
|---|---|---|
| LAS5.00 | 68.5 | dBA |
| LAS10.00 | 65.8 | dBA |
| LAS33.30 | 59.0 | dBA |
| LAS50.00 | 58.1 | dBA |
| LAS66.60 | 57.6 | dBA |
| LAS90.00 | 56.9 | dBA |
| | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.06 | % |
| Projected Dose | 0.20 | 1.87 | % |
| TWA (Projected) | 63.0 | 61.3 | dBA |
| TWA (t) | 48.0 | 36.4 | dBA |
| Lep (t) | 48.0 | 48.0 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.072 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 15:12:06 |
| Stop Time | Wednesday, 2012 October 17 15:27:17 |
| Duration | 00:15:11.1 |
| Run Time | 00:12:59.2 |
| Pause | 00:02:11.9 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 63.5 | dB |
| LASmax | 2012 Oct 17 15:15:55 | 78.9 | dB |
| LApeak (max) | 2012 Oct 17 15:15:23 | 92.4 | dB |
| LASmin | 2012 Oct 17 15:23:18 | 47.3 | dB |
| LCeq | | 75.6 | dB |
| LAeq | | 63.5 | dB |
| LCeq - LAeq | | 12.2 | dB |
| LAIeq | | 65.4 | dB |
| LAeq | | 63.5 | dB |
| LAIeq - LAeq | | 1.9 | dB |
| Ldn | | 63.5 | dB |
| LDay 07:00-22:00 | | 63.5 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 63.5 | dB |
| LDay 07:00-19:00 | | 63.5 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 92.4 | dB |
| EA | | 192.3 | µPa²h |
| EA8 | | 7.108 | mPa²h |
| EA40 | | 35.54 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 68.5 | dBA |
| LAS10.00 | | 65.9 | dBA |
| LAS33.30 | | 61.9 | dBA |
| LAS50.00 | | 60.1 | dBA |
| LAS66.60 | | 57.1 | dBA |
| LAS90.00 | | 53.0 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.05 | % |
| Projected Dose | 0.22 | 2.01 | % |
| TWA (Projected) | 63.5 | 61.8 | dBA |
| TWA (t) | 47.8 | 35.8 | dBA |
| Lep (t) | 47.8 | 47.8 | dBA |

## General Information

| | |
|---|---|
| Serial Number | 02412 |
| Model | LxT1 |
| Firmware Version | 1.512 |
| Filename | LxT_Data.073 |
| User | |
| Job Description | |
| Location | |
| | |
| Measurement Description | DIX |
| Start Time | Wednesday, 2012 October 17 15:34:56 |
| Stop Time | Wednesday, 2012 October 17 15:50:28 |
| Duration | 00:15:31.5 |
| Run Time | 00:15:31.5 |
| Pause | 00:00:00.0 |
| Pre Calibration | Wednesday, 2012 October 17 12:21:31 |
| Post Calibration | None |
| Calibration Deviation | --- |

## Note

## Overall Data

| | | | |
|---|---|---|---|
| LAeq | | 62.7 | dB |
| LASmax | 2012 Oct 17 15:46:51 | 76.2 | dB |
| LApeak (max) | 2012 Oct 17 15:46:44 | 95.4 | dB |
| LASmin | 2012 Oct 17 15:48:29 | 49.4 | dB |
| LCeq | | 73.3 | dB |
| LAeq | | 62.7 | dB |
| LCeq - LAeq | | 10.5 | dB |
| LAIeq | | 66.7 | dB |
| LAeq | | 62.7 | dB |
| LAIeq - LAeq | | 3.9 | dB |
| Ldn | | 62.7 | dB |
| LDay 07:00-22:00 | | 62.7 | dB |
| LNight 22:00-07:00 | | --- | dB |
| Lden | | 62.7 | dB |
| LDay 07:00-19:00 | | 62.7 | dB |
| LEvening 19:00-22:00 | | --- | dB |
| LNight 22:00-07:00 | | --- | dB |
| LAE | | 92.4 | dB |
| EA | | 194.9 | µPa²h |
| EA8 | | 6.026 | mPa²h |
| EA40 | | 30.13 | mPa²h |
| # Overloads | | 0 | |
| Overload Duration | | 0.0 | s |
| # OBA Overloads | | 0 | |
| OBA Overload Duration | | 0.0 | s |

## Statistics

| | | | |
|---|---|---|---|
| LAS5.00 | | 68.9 | dBA |
| LAS10.00 | | 66.1 | dBA |
| LAS33.30 | | 61.3 | dBA |
| LAS50.00 | | 59.0 | dBA |
| LAS66.60 | | 56.8 | dBA |
| LAS90.00 | | 52.6 | dBA |
| | | | |
| LAS > 85.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | | 0 / 0.0 | s |

## Dose

| Name | OSHA-1 | OSHA-2 | |
|---|---|---|---|
| Dose | 0.01 | 0.06 | % |
| Projected Dose | 0.19 | 1.88 | % |
| TWA (Projected) | 62.7 | 61.3 | dBA |
| TWA (t) | 47.8 | 36.6 | dBA |
| Lep (t) | 47.8 | 47.8 | dBA |

**ATTACHMENT B**

EXISTING AND FUTURE NOISE CONTOUR
INPUT AND OUTPUT FILES

**Appendix**

# Traffic Noise Prediction Model, (FHWA RD-77-108)

**Model Input Sheet**

**Project Name :** Ocean Beach
**Project Number :** LDN-12-60
**Modeling Condition :** Existing
**Ground Type :** Hard
**Peak ratio to ADT:** 10.00
**Metric ($L_{eq}$, $L_{dn}$, CNEL) :** CNEL
**c Desc. (Peak or ADT) :** ADT

| Segment | Roadway | Segment From To | Traffic Vol. | Speed (Mph) | Distance to CL | % Autos | %MT | % HT | Day % | Eve % | Night % | K-Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Abbott St | Newport St to Santa Monica Ave | 3,400 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 2 | | Santa Monica Ave to W Point Loma Blvd | 3,400 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 3 | Bacon St | Santa Cruz Ave to Narragansett Ave | 3,700 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 4 | | Narragansett Ave to Santa Monica Ave | 3,700 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 5 | | Santa Monica Ave to W Point Loma Blvd | 7,800 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 6 | Cable St | Orchard Ave to Narragansett Ave | 4,300 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 7 | | Narragansett Ave to Newport Ave | 4,300 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 8 | | Newport Ave to W Point Loma Blvd | 6,300 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 9 | Sunset Cliffs Blvd | Adair St to Narragansett Ave | 9,900 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 10 | | Narragansett Ave to Voltaire St | 17,800 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 11 | | Voltaire St to W Point Loma Blvd | 22,800 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 12 | | W Point Loma Blvd to Nimitz Blvd | 36,200 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 13 | | Nimitz Blvd to I-8 WB off-ramp | 36,200 | 45 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 14 | | I-8 WB off-ramp to Sea World Dr | 36,200 | 45 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 15 | Ebers St | Coronado Ave to Narragansett Ave | 4,000 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 16 | | Narragansett Ave to Newport Ave | 4,000 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 17 | | Newport Ave to Voltaire St | 6,900 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 18 | | Voltaire St to W point Loma Blvd | 9,900 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 19 | Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 41,700 | 45 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 20 | W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 18,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 21 | | Sunset Cliffs Blvd to Nimitz Blvd | 13,400 | 30 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 22 | | Nimitz Blvd to Famosa Blvd | 15,500 | 30 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 23 | Voltaire St | Abbott St to Bacon St | 3,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 24 | | Bacon St to Cable St | 5,400 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 25 | | Cable St to Sunset Cliffs Blvd | 5,400 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 26 | | Sunset Cliffs Blvd to Froude St | 8,400 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 27 | Santa Monica Ave | Abbott St to Sunset Cliffs Blvd | 4,400 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 28 | Newport Ave | Abbott St to Cable St | 8,700 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29 | | Cable St to Sunset Cliffs Blvd | 6,200 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 30 | | Sunset Cliffs Blvd to Froude St | 6,200 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 31 | Narragansett Ave | Bacon St to Sunset Cliffs Blvd | 2,800 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 32 | | Sunset Cliffs Blvd to Froude St | 2,600 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 33 | Orchard Ave | Cable St to Sunset Cliffs Blvd | 1,600 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 34 | Point Loma Ave | Sunset Cliffs Blvd to Froude St | 3,400 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 35 | I-8 | Sunset Cliffs Blvd to W Mission Bay Dr* | 10,500 | 55 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 |

**Appendix**

# Traffic Noise Prediction Model, (FHWA RD-77-108)

**Predicted Noise Levels**

**Project Name :** Ocean Beach
**Project Number :** LDN-12-60
**Modeling Condition :** Existing
**Metric (Leq, Ldn, CN** CNEL

| | | Segment | Noise Levels, dB CNEL | | | | Distance to Traffic Noise Contours, Feet | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Segment | Roadway | From To | Auto | MT | HT | Total | 75 dB | 70 dB | 65 dB | 60 dB | 55 dB |
| 1 | Abbott St | Newport St to Santa Monica Ave | 54.8 | 45.5 | 47.1 | 55.9 | 1 | 2 | 6 | 19 | 61 |
| 2 | | Santa Monica Ave to W Point Loma Blvd | 54.8 | 45.5 | 47.1 | 55.9 | 1 | 2 | 6 | 19 | 61 |
| 3 | Bacon St | Santa Cruz Ave to Narragansett Ave | 55.1 | 45.8 | 47.4 | 56.2 | 1 | 2 | 7 | 21 | 66 |
| 4 | | Narragansett Ave to Santa Monica Ave | 55.1 | 45.8 | 47.4 | 56.2 | 1 | 2 | 7 | 21 | 66 |
| 5 | | Santa Monica Ave to W Point Loma Blvd | 58.4 | 49.1 | 50.7 | 59.5 | 1 | 4 | 14 | 44 | 140 |
| 6 | Cable St | Orchard Ave to Narragansett Ave | 55.8 | 46.5 | 48.1 | 56.9 | 1 | 2 | 8 | 24 | 77 |
| 7 | | Narragansett Ave to Newport Ave | 55.8 | 46.5 | 48.1 | 56.9 | 1 | 2 | 8 | 24 | 77 |
| 8 | Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 73.9 | 61.2 | 59.7 | 74.2 | 42 | 133 | 419 | 1,326 | 4,195 |
| 9 | W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 63.0 | 53.7 | 55.3 | 64.1 | 4 | 13 | 40 | 128 | 404 |
| 10 | | Narragansett Ave to Voltaire St | 62.8 | 53.5 | 55.1 | 63.9 | 4 | 12 | 39 | 123 | 388 |
| 11 | | Voltaire St to W Point Loma Blvd | 63.9 | 54.6 | 56.2 | 65.0 | 5 | 16 | 50 | 157 | 497 |
| 12 | | W Point Loma Blvd to Nimitz Blvd | 65.9 | 56.6 | 58.2 | 67.0 | 8 | 25 | 79 | 250 | 790 |
| 13 | | Nimitz Blvd to I-8 WB off-ramp | 73.2 | 60.6 | 59.0 | 73.6 | 36 | 115 | 364 | 1,151 | 3,641 |
| 14 | | I-8 WB off-ramp to Sea World Dr | 73.2 | 60.6 | 59.0 | 73.6 | 36 | 115 | 364 | 1,151 | 3,641 |
| 15 | Ebers St | Coronado Ave to Narragansett Ave | 55.5 | 46.2 | 47.8 | 56.6 | 1 | 2 | 7 | 23 | 72 |
| 16 | | Narragansett Ave to Newport Ave | 55.5 | 46.2 | 47.8 | 56.6 | 1 | 2 | 7 | 23 | 72 |
| 17 | | Newport Ave to Voltaire St | 57.8 | 48.5 | 50.2 | 58.9 | 1 | 4 | 12 | 39 | 124 |
| 18 | | Voltaire St to W point Loma Blvd | 59.4 | 50.1 | 51.7 | 60.5 | 2 | 6 | 18 | 56 | 178 |
| 19 | Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 73.9 | 61.2 | 59.7 | 74.2 | 42 | 133 | 419 | 1,326 | 4,195 |
| 20 | W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 63.0 | 53.7 | 55.3 | 64.1 | 4 | 13 | 40 | 128 | 404 |
| 21 | | Sunset Cliffs Blvd to Nimitz Blvd | 63.9 | 53.5 | 54.6 | 64.7 | 5 | 15 | 47 | 147 | 465 |
| 22 | | Nimitz Blvd to Famosa Blvd | 64.5 | 54.1 | 55.2 | 65.3 | 5 | 17 | 54 | 170 | 538 |
| 23 | Voltaire St | Abbott St to Bacon St | 54.9 | 45.6 | 47.2 | 56.0 | 1 | 2 | 6 | 20 | 63 |
| 24 | | Bacon St to Cable St | 56.8 | 47.5 | 49.1 | 57.9 | 1 | 3 | 10 | 31 | 97 |
| 25 | | Cable St to Sunset Cliffs Blvd | 56.8 | 47.5 | 49.1 | 57.9 | 1 | 3 | 10 | 31 | 97 |
| 26 | | Sunset Cliffs Blvd to Froude St | 61.0 | 50.6 | 51.7 | 61.8 | 2 | 8 | 24 | 76 | 240 |
| 27 | Santa Monica Ave | Abbott St to Sunset Cliffs Blvd | 60.1 | 48.9 | 48.0 | 60.7 | 2 | 6 | 18 | 58 | 184 |
| 28 | Newport Ave | Abbott St to Cable St | 63.1 | 51.8 | 51.0 | 63.6 | 4 | 12 | 36 | 115 | 364 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29 | | Cable St to Sunset Cliffs Blvd | 61.6 | 50.4 | 49.5 | 62.2 | 3 | 8 | 26 | 82 | 259 |
| 30 | | Sunset Cliffs Blvd to Froude St | 61.6 | 50.4 | 49.5 | 62.2 | 3 | 8 | 26 | 82 | 259 |
| 31 | Narragansett Ave | Bacon St to Sunset Cliffs Blvd | 56.2 | 45.9 | 47.0 | 57.0 | 1 | 3 | 8 | 25 | 80 |
| 32 | | Sunset Cliffs Blvd to Froude St | 55.9 | 45.5 | 46.6 | 56.7 | 1 | 2 | 7 | 23 | 74 |
| 33 | Orchard Ave | Cable St to Sunset Cliffs Blvd | 53.8 | 43.4 | 44.5 | 54.6 | 0 | 1 | 5 | 14 | 46 |
| 34 | Point Loma Ave | Sunset Cliffs Blvd to Froude St | 57.1 | 46.7 | 47.8 | 57.9 | 1 | 3 | 10 | 31 | 97 |
| 35 | I-8 | Sunset Cliffs Blvd to W Mission Bay Dr* | 70.4 | 56.5 | 54.5 | 70.7 | 18 | 58 | 184 | 582 | 1,840 |

**Appendix**

# Traffic Noise Prediction Model, (FHWA RD-77-108)

**Model Input Sheet**

**Project Name :** Ocean Beach
**Project Number :** LDN-12-60
**Modeling Condition :** Future
**Ground Type :** Hard
**Peak ratio to ADT:** 10.00
**Metric ($L_{eq}$, $L_{dn}$, CNEL) :** CNEL
**Desc. (Peak or ADT) :** ADT

| Segment | Roadway | Segment From To | Traffic Vol. | Speed (Mph) | Distance to CL | % Autos | %MT | % HT | Day % | Eve % | Night % | K-Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Abbott St | Newport St to Santa Monica Ave | 9,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 2 | | Santa Monica Ave to W Point Loma Blvd | 5,800 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 3 | Bacon St | Santa Cruz Ave to Narragansett Ave | 4,300 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 4 | | Narragansett Ave to Santa Monica Ave | 6,300 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 5 | | Santa Monica Ave to W Point Loma Blvd | 7,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 6 | Cable St | Orchard Ave to Narragansett Ave | 4,200 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 7 | | Narragansett Ave to Newport Ave | 7,200 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 8 | | Newport Ave to W Point Loma Blvd | 12,000 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 9 | Sunset Cliffs Blvd | Adair St to Narragansett Ave | 19,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 10 | | Narragansett Ave to Voltaire St | 25,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 11 | | Voltaire St to W Point Loma Blvd | 24,000 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 12 | | W Point Loma Blvd to Nimitz Blvd | 52,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 13 | | Nimitz Blvd to I-8 WB off-ramp | 57,000 | 45 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 14 | | I-8 WB off-ramp to Sea World Dr | 53,500 | 45 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 15 | Ebers St | Coronado Ave to Narragansett Ave | 5,300 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 16 | | Narragansett Ave to Newport Ave | 6,600 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 17 | | Newport Ave to Voltaire St | 8,400 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 18 | | Voltaire St to W point Loma Blvd | 15,000 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 19 | Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 69,500 | 45 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 20 | W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 31,500 | 25 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 21 | | Sunset Cliffs Blvd to Nimitz Blvd | 19,000 | 30 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 22 | | Nimitz Blvd to Famosa Blvd | 15,500 | 30 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 | |
| 23 | Voltaire St | Abbott St to Bacon St | 4,900 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 24 | | Bacon St to Cable St | 6,900 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 25 | | Cable St to Sunset Cliffs Blvd | 8,400 | 25 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 26 | | Sunset Cliffs Blvd to Froude St | 11,000 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 27 | Santa Monica Ave | Abbott St to Sunset Cliffs Blvd | 5,700 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |
| 28 | Newport Ave | Abbott St to Cable St | 8,700 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29 | | Cable St to Sunset Cliffs Blvd | 5,200 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 30 | | Sunset Cliffs Blvd to Froude St | 4,500 | 35 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 31 | Narragansett Ave | Bacon St to Sunset Cliffs Blvd | 4,100 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 32 | | Sunset Cliffs Blvd to Froude St | 5,700 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 33 | Orchard Ave | Cable St to Sunset Cliffs Blvd | 2,800 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 34 | Point Loma Ave | Sunset Cliffs Blvd to Froude St | 4,700 | 30 | 50 | 99.00 | 0.80 | 0.20 | 80.00 | 10.00 | 10.00 |
| 35 | I-8 | Sunset Cliffs Blvd to W Mission Bay Dr* | 16,453 | 55 | 50 | 99.00 | 0.80 | 0.20 | 75.00 | 10.00 | 15.00 |

**Appendix**

# Traffic Noise Prediction Model, (FHWA RD-77-108)

**Predicted Noise Levels**

**Project Name :** Ocean Beach
**Project Number :** LDN-12-60
**Modeling Condition :** Future
**Metric (Leq, Ldn, CN** CNEL

| | | Segment | Noise Levels, dB CNEL | | | | Distance to Traffic Noise Contours, Feet | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Segment | Roadway | From To | Auto | MT | HT | Total | 75 dB | 70 dB | 65 dB | 60 dB | 55 dB |
| 1 | Abbott St | Newport St to Santa Monica Ave | 59.2 | 49.9 | 51.5 | 60.3 | 2 | 5 | 17 | 54 | 171 |
| 2 | | Santa Monica Ave to W Point Loma Blvd | 57.1 | 47.8 | 49.4 | 58.2 | 1 | 3 | 10 | 33 | 104 |
| 3 | Bacon St | Santa Cruz Ave to Narragansett Ave | 55.8 | 46.5 | 48.1 | 56.9 | 1 | 2 | 8 | 24 | 77 |
| 4 | | Narragansett Ave to Santa Monica Ave | 57.5 | 48.1 | 49.8 | 58.5 | 1 | 4 | 11 | 36 | 113 |
| 5 | | Santa Monica Ave to W Point Loma Blvd | 58.2 | 48.9 | 50.5 | 59.3 | 1 | 4 | 13 | 43 | 135 |
| 6 | Cable St | Orchard Ave to Narragansett Ave | 55.7 | 46.4 | 48.0 | 56.8 | 1 | 2 | 8 | 24 | 75 |
| 7 | | Narragansett Ave to Newport Ave | 58.0 | 48.7 | 50.3 | 59.1 | 1 | 4 | 13 | 41 | 129 |
| 8 | Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 76.1 | 63.4 | 61.9 | 76.5 | 70 | 221 | 699 | 2,211 | 6,991 |
| 9 | W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 65.3 | 56.0 | 57.6 | 66.4 | 7 | 22 | 69 | 217 | 687 |
| 10 | | Narragansett Ave to Voltaire St | 64.4 | 55.1 | 56.7 | 65.5 | 6 | 18 | 56 | 176 | 556 |
| 11 | | Voltaire St to W Point Loma Blvd | 64.1 | 54.8 | 56.4 | 65.2 | 5 | 17 | 52 | 166 | 524 |
| 12 | | W Point Loma Blvd to Nimitz Blvd | 67.5 | 58.2 | 59.8 | 68.6 | 11 | 36 | 115 | 362 | 1,145 |
| 13 | | Nimitz Blvd to I-8 WB off-ramp | 75.2 | 62.5 | 61.0 | 75.6 | 57 | 181 | 573 | 1,813 | 5,734 |
| 14 | | I-8 WB off-ramp to Sea World Dr | 74.9 | 62.3 | 60.7 | 75.3 | 54 | 170 | 538 | 1,702 | 5,382 |
| 15 | Ebers St | Coronado Ave to Narragansett Ave | 56.7 | 47.4 | 49.0 | 57.8 | 1 | 3 | 10 | 30 | 95 |
| 16 | | Narragansett Ave to Newport Ave | 57.7 | 48.3 | 50.0 | 58.8 | 1 | 4 | 12 | 38 | 119 |
| 17 | | Newport Ave to Voltaire St | 58.7 | 49.4 | 51.0 | 59.8 | 2 | 5 | 15 | 48 | 151 |
| 18 | | Voltaire St to W point Loma Blvd | 61.2 | 51.9 | 53.5 | 62.3 | 3 | 9 | 27 | 85 | 270 |
| 19 | Nimitz Blvd | Sunset Cliffs Blvd to W Point Loma Blvd | 76.1 | 63.4 | 61.9 | 76.5 | 70 | 221 | 699 | 2,211 | 6,991 |
| 20 | W Point Loma Blvd | Abbott St to Sunset Cliffs Blvd | 65.3 | 56.0 | 57.6 | 66.4 | 7 | 22 | 69 | 217 | 687 |
| 21 | | Sunset Cliffs Blvd to Nimitz Blvd | 65.4 | 55.0 | 56.1 | 66.2 | 7 | 21 | 66 | 209 | 659 |
| 22 | | Nimitz Blvd to Famosa Blvd | 64.5 | 54.1 | 55.2 | 65.3 | 5 | 17 | 54 | 170 | 538 |
| 23 | Voltaire St | Abbott St to Bacon St | 56.4 | 47.1 | 48.7 | 57.5 | 1 | 3 | 9 | 28 | 88 |
| 24 | | Bacon St to Cable St | 57.8 | 48.5 | 50.2 | 58.9 | 1 | 4 | 12 | 39 | 124 |
| 25 | | Cable St to Sunset Cliffs Blvd | 58.7 | 49.4 | 51.0 | 59.8 | 2 | 5 | 15 | 48 | 151 |
| 26 | | Sunset Cliffs Blvd to Froude St | 62.2 | 51.8 | 52.9 | 63.0 | 3 | 10 | 31 | 99 | 314 |
| 27 | Santa Monica Ave | Abbott St to Sunset Cliffs Blvd | 61.2 | 50.0 | 49.2 | 61.8 | 2 | 8 | 24 | 75 | 238 |
| 28 | Newport Ave | Abbott St to Cable St | 63.1 | 51.8 | 51.0 | 63.6 | 4 | 12 | 36 | 115 | 364 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29 | | Cable St to Sunset Cliffs Blvd | 60.8 | 49.6 | 48.8 | 61.4 | 2 | 7 | 22 | 69 | 218 |
| 30 | | Sunset Cliffs Blvd to Froude St | 60.2 | 49.0 | 48.1 | 60.8 | 2 | 6 | 19 | 60 | 188 |
| 31 | Narragansett Ave | Bacon St to Sunset Cliffs Blvd | 57.9 | 47.5 | 48.6 | 58.7 | 1 | 4 | 12 | 37 | 117 |
| 32 | | Sunset Cliffs Blvd to Froude St | 59.3 | 48.9 | 50.0 | 60.1 | 2 | 5 | 16 | 52 | 163 |
| 33 | Orchard Ave | Cable St to Sunset Cliffs Blvd | 56.2 | 45.9 | 47.0 | 57.0 | 1 | 3 | 8 | 25 | 80 |
| 34 | Point Loma Ave | Sunset Cliffs Blvd to Froude St | 58.5 | 48.1 | 49.2 | 59.3 | 1 | 4 | 13 | 42 | 134 |
| 35 | I-8 | Sunset Cliffs Blvd to W Mission Bay Dr* | 72.3 | 58.5 | 56.4 | 72.6 | 29 | 91 | 288 | 911 | 2,882 |