



**Noise Analysis for the
City of Del Mar Zoning Ordinance
Amendment (ZA18-002) Program
Del Mar, California**

Prepared for
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A handwritten signature in black ink that reads "Jessica Fleming". The signature is written in a cursive, flowing style.

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Acronyms and Abbreviations

APN	Assessor's Parcel Number
CC	Central Commercial
CCR	California Code of Regulations
City	City of Del Mar
CNEL	Community Noise Equivalent Level
dB	decibels
dB(A)	A-weighted decibels
FHWA	Federal Highway Administration
HVAC	heating, ventilation, and air conditioning
L _{eq}	one-hour equivalent noise level
L _{max}	maximum sound level
LOS	Level of Service
LOSSAN	Los Angeles–San Diego–San Luis Obispo Rail Corridor Agency
mph	miles per hour
NC	North Commercial
NCTD	North County Transit District
PC	Professional Commercial
PF	Public Facilities
program	City of Del Mar Zoning Code Amendment (ZA18-002) Program
SoundPLAN	SoundPlan Essential, version 4.1

Executive Summary

This report evaluates potential noise impacts associated with the proposed City of Del Mar (City) Zoning Ordinance Amendment (ZA18-002) (program). The program proposes a General Plan Amendment, Zoning Code Amendment, and a Local Coastal Program Amendment to implement the City's Certified Housing Element by allowing multiple-dwelling unit residential as an allowed use within the existing North Commercial (NC) and Professional Commercial (PC) Zones (up to 20 dwelling units per acre). In addition to analyzing the proposed amendments, this report also analyzes the potential for future development of affordable housing (maximum 20 dwelling units per acre) within the Public Facilities (PF) zone (excluding Shores Park). However, no change to the existing PF zone development or development potential is included in the program at this time.

Construction

Noise associated with the demolition, excavation, grading, building, and paving for future development would potentially result in short-term impacts to surrounding sensitive receivers. As indicated in Section 9.20.050 of the City Municipal Code, construction activity shall not cause an hourly average sound level (L_{eq}) greater than 75 decibels (dB) on property zoned or used for residential purposes.

Although no specific construction or development is proposed at this time, construction noise impacts could occur as future development within the program area occurs. Due to the developed nature of the program area, there is a high likelihood that construction activities would take place adjacent to existing structures and that residential uses would be located in proximity to construction activities.

The City regulates construction noise through Section 9.20.050 of the Municipal Code, which puts limits on the days of the week and hours of operation allowed for construction. Residential uses are located adjacent to the affected parcels, therefore, future projects implemented pursuant to the proposed program could generate construction noise that would potentially exceed the Municipal Code hourly noise threshold of 75 A-weighted dB [dB(A)] L_{eq} at residential properties. However, future development within the program area would be required to comply with all Municipal Code regulations as well as undergo review by the Design Review Board, thereby ensuring future construction in proximity to residential uses would implement noise reduction measures to reduce noise levels to 75 dB(A) L_{eq} or less at residential properties. Thus, with these processes in place, construction noise impacts due to the program would be less than significant.

Vehicle Traffic

On-site Vehicle Traffic Noise

The City goals for transportation noise sources are published in the Community Plan Transportation Element, Noise Section. This section of the Community Plan identifies

65 Community Noise Equivalent Level (CNEL) as the maximum noise level compatible with residential land uses.

The main source of noise throughout the NC, PC and PF zones is vehicle traffic and rail traffic. The roadways bordering the program area include: Camino Del Mar, Jimmy Durante Boulevard, San Dieguito Drive, 15th Street, and Coast Boulevard. Amtrak operates Pacific Surfliner passenger trains and the North County Transit District operates Coaster commuter trains along the existing rail corridor that runs along the western portion of the City. Noise levels due to vehicle and rail traffic were calculated at each of the parcels in the program area. As calculated in this analysis, noise levels would exceed the residential compatibility level of 65 CNEL at the following locations: 2002 and 2010 Jimmy Durante Boulevard (Assessor Parcel Numbers [APN] 299-071-06 and 299-071-07) in the NC zone, and at 2809 28th Street (APN 299-030-12) in the PF zone. Should these parcels be redeveloped with residential uses, exterior noise levels closest to Jimmy Durante Boulevard and the railroad tracks would be incompatible, and noise impacts would be significant. The following mitigation measure is required:

NOISE-1: Prior to the issuance of building permits for residential development proposed in the NC zone at 2002 Jimmy Durante Boulevard (APN 299-071-07) and 2010 Jimmy Durante Boulevard (APN 299-071-06) and in the PF zone at 2809 28th Street (APN 299-030-12), a noise analysis shall be submitted demonstrating the exterior noise levels at any exterior use areas do not exceed 65 CNEL.

With implementation of this measure, exterior noise levels at any residential development proposed within these parcels in the NC and PF zones would be reduced to 65 CNEL or less.

Noise levels at all parcels in the PC zone and all parcels except 2809 28th Street in the PF zone would be 65 CNEL or less. Therefore, exterior noise impacts to residential uses constructed within the PC zone and all parcels of the PF zone except 2809 28th Street would be less than significant.

Interior noise levels can be reduced through standard construction techniques. Exterior noise levels at all affected lots would be 70 CNEL or less. Thus, with standard light-frame construction, interior noise levels would be reduced to 45 CNEL or less and would be compatible with City standards. Therefore, with standard construction techniques, interior noise levels at all affected parcels would be less than significant.

Off-site Vehicle Traffic Noise

This report considers the scenario in which residential uses would replace existing uses within the program area parcels. Based on this scenario, the program would generate less traffic than both the existing on-the-ground development and the existing zoning. Therefore, it can be concluded that the program would not result in an increase in ambient noise levels on the program area roadway network. Off-site vehicle traffic noise increases would be less than significant.

On-site Generated Noise

Section 9.20.040 of the City's Municipal Code specifies property line noise level limits for on-site stationary sources of noise. Stationary sources of noise include activities associated with a given land use. Various land uses contain on-site stationary noise sources, including rooftop heating, ventilation, and air conditioning equipment; mechanical equipment; emergency electrical generators; parking lot activities; loading dock operations; and recreation activities. The addition of multiple-dwelling unit residential uses to the existing mix of allowed uses could result in the exposure of residential uses to these stationary noise sources. Noise levels would have the potential to exceed the applicable Noise Ordinance limits. However, future development within the program area would be required to comply with all Municipal Code regulations as well as undergo review by the Design Review Board, thereby ensuring on-site generation noise levels would comply with applicable Noise Ordinance limits. Thus, with these processes in place, through implementation of the City's Noise Ordinance, stationary noise impacts due to the program would be less than significant.

1.0 Introduction

1.1 Description of Proposed Program

The analysis of impacts includes a project area consisting of 32 individual parcels located throughout the City within the Professional Commercial (PC), North Commercial (NC), and Public Facilities (PF) zones. The regional location of the program is shown in Figure 1. An aerial photograph of the program area is shown on Figure 2.

The program proposes a General Plan Amendment, Zoning Code Amendment and Local Coastal Program Amendment to implement the City's certified Housing Element by adding multiple-dwelling unit residential in the existing NC and PC zones as an allowed use (up to a maximum density of 20 dwelling units per acre). The addition of multiple-dwelling unit residential to the existing mix of allowed uses within the NC and PC zones would allow for properties to develop or redevelop with a mix of commercial and residential uses; or solely as multiple-dwelling unit residential, commercial development, or light-industrial development where allowed per the zoning code. The existing zoning setbacks, floor area ratio, lot coverage, and height limits that currently apply within the respective zones would still apply. The program does not include any physical development or construction component.

In addition to analyzing the proposed amendments, the report also analyzes the potential for future development of affordable housing (maximum 20 dwelling units per acre) within the PF zone (excluding Shores Park). However, no change to the existing PF zone development or development potential is included in the program.

This report considers the scenario in which residential uses would replace existing uses within the program area parcels.

1.1.1 North Commercial (NC)

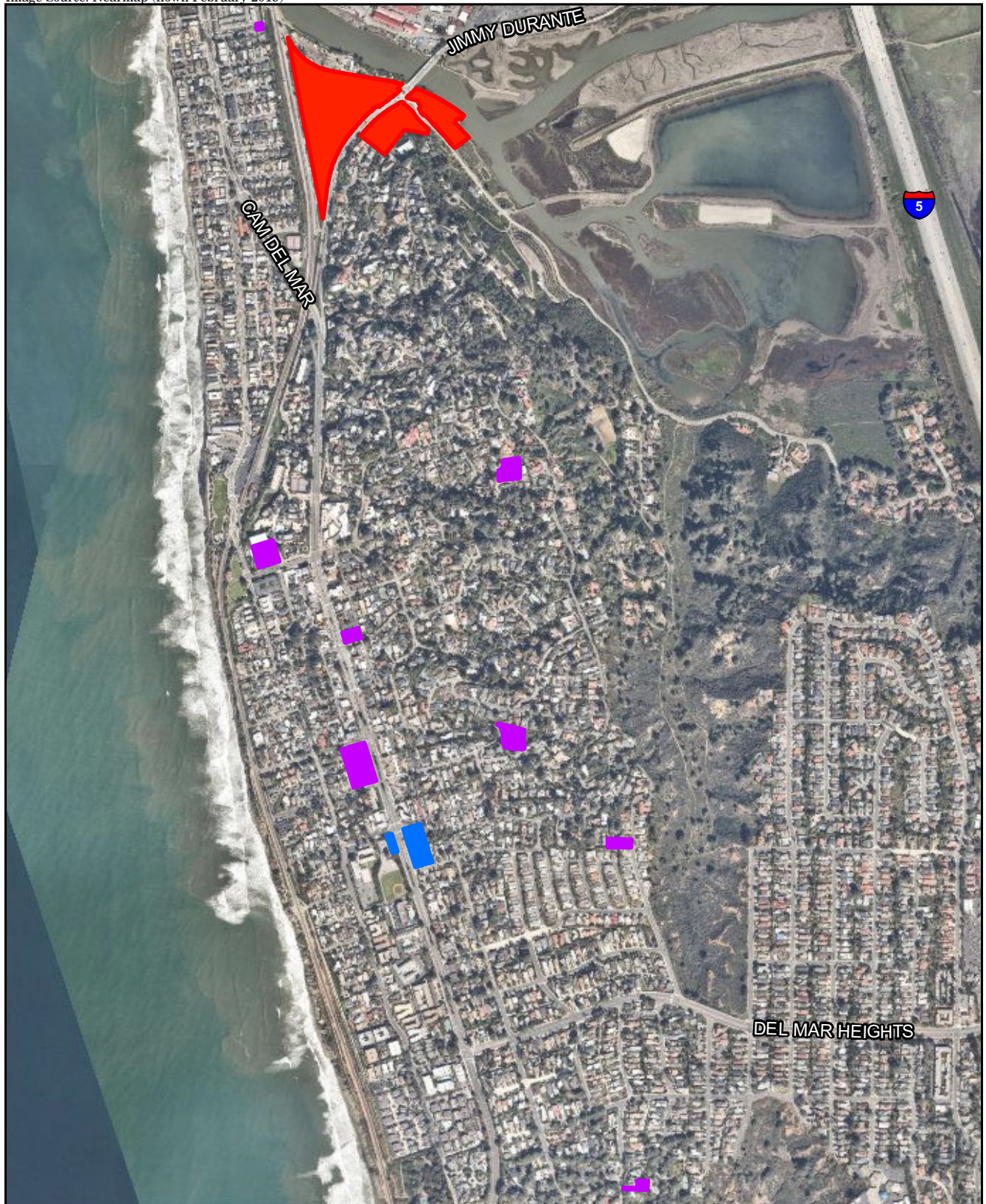
The NC zone comprises 16 legal lots of varying size measuring a combined 680,000 square feet (15.6 acres), with street frontage and property access from Jimmy Durante Boulevard or San Dieguito Drive. The associated parcel numbers within the NC zone are: 299-071-02, -06, and -07; 299-100-27, -28, -29, -30, -32, -33, -34, -35, -36, -47, -48, -49, and -50. The locations of the NC zoned parcels are shown in Figure 3.

The Del Mar Community Plan land use designation for NC currently is intended to allow activities that provide a service to the community. The proposed plan amendment would allow for residential in addition to the existing range of commercial and light industrial uses allowed.



✱ Project Location

FIGURE 1
Regional Location



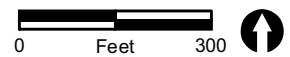
- North Commercial (NC) Zone
- Professional Commercial (PC) Zone
- Public Facilities (PF) Zone

0 Feet 1,200



FIGURE 2

Program Location on Aerial Photograph



North Commercial (NC) Zone

FIGURE 3
North Commercial (NC) Zone

Portions of the NC zone are located within the Floodplain Overlay Zone, the Bluff, Slope, and Canyon Overlay Zone, and the Lagoon Overlay Zone. There are eight vacant parcels under various public or private ownerships. The private properties that are developed contain various office and commercial uses. Existing buildings are of various ages and conditions. The North County Transit District (NCTD) owns two of the parcels, and has rights-of-way from former railroad spurs. A portion of the NCTD properties are currently used as public parking. The remaining portion of the properties remains unimproved as wetlands. The NC zone is surrounded by the Floodway Zone (FW–San Dieguito River) to the north and east; Very Low Density Residential (R1-40) to the east; Low Density Residential (R1-10) to the south; and Medium Density Mixed Residential (RM-East), and the Railroad Right-of-Way (RR zone) to the west.

Based on current height, floor area ratio, and lot coverage regulations, maximum residential buildout within the NC zone in accordance with the proposed amendment could total 227 residential units.

1.1.2 Professional Commercial (PC)

The PC zone comprises four legal lots of varying size measuring a combined 55,000 square feet (1.25 acres), with street frontage and property access from either Camino Del Mar, 8th Street or 9th Street in the downtown corridor. The associated parcel numbers within the PC zone are: 300-200-24; 300-222-31, -32, and -33. The locations of the PC zoned parcels are shown in Figure 4.

The Del Mar Community Plan land use for designation for PC currently is intended to allow commercial office uses. The proposed plan amendment would allow for residential in addition to the existing commercial office uses allowed.

All properties within the PC zone are currently developed with office buildings of various ages and conditions. The PC zone is surrounded by Medium Density Mixed Residential (RM-Central) and Low Density Residential (R1-10) to the east; Public Facilities (PF-Shores Park) to the west; and Central Commercial (CC) to the north.

Based on current height, floor area ratio, and lot coverage regulations, maximum residential buildout within the PC zone in accordance with the proposed amendment could total 26 residential units.

1.1.3 Public Facilities (PF)

The program includes the potential addition of affordable housing within 12 parcels in the PF zone, and specifically excludes the Shores Park parcels from the analysis. Four of the parcels (300-093-15, -16, -17, and -18) comprise lands developed with and utilized for the City of Del Mar Civic Center. Two of the seven parcels (300-020-06 and -07) comprise lands developed with and utilized for the Del Mar Library.



Professional Commercial (PC) Zone

FIGURE 4
Professional Commercial (PC) Zone

A single parcel (299-310-02) is developed with and utilized by the United States Postal Service post office. The remaining five parcels (299-260-45; 300-243-10; 300-272-07; and 299-030-12) comprise other City owned properties. The locations of the PF zoned parcels are shown in Figure 5.

Based on existing height, floor area ratio, and lot coverage regulations applicable to the PF zone, up to 93 dwelling units total could be developed on the 12 analyzed parcels if the Municipal Code is further amended to allow residential development up to a maximum density of 20 dwelling units per acre.

1.2 Fundamentals of Noise

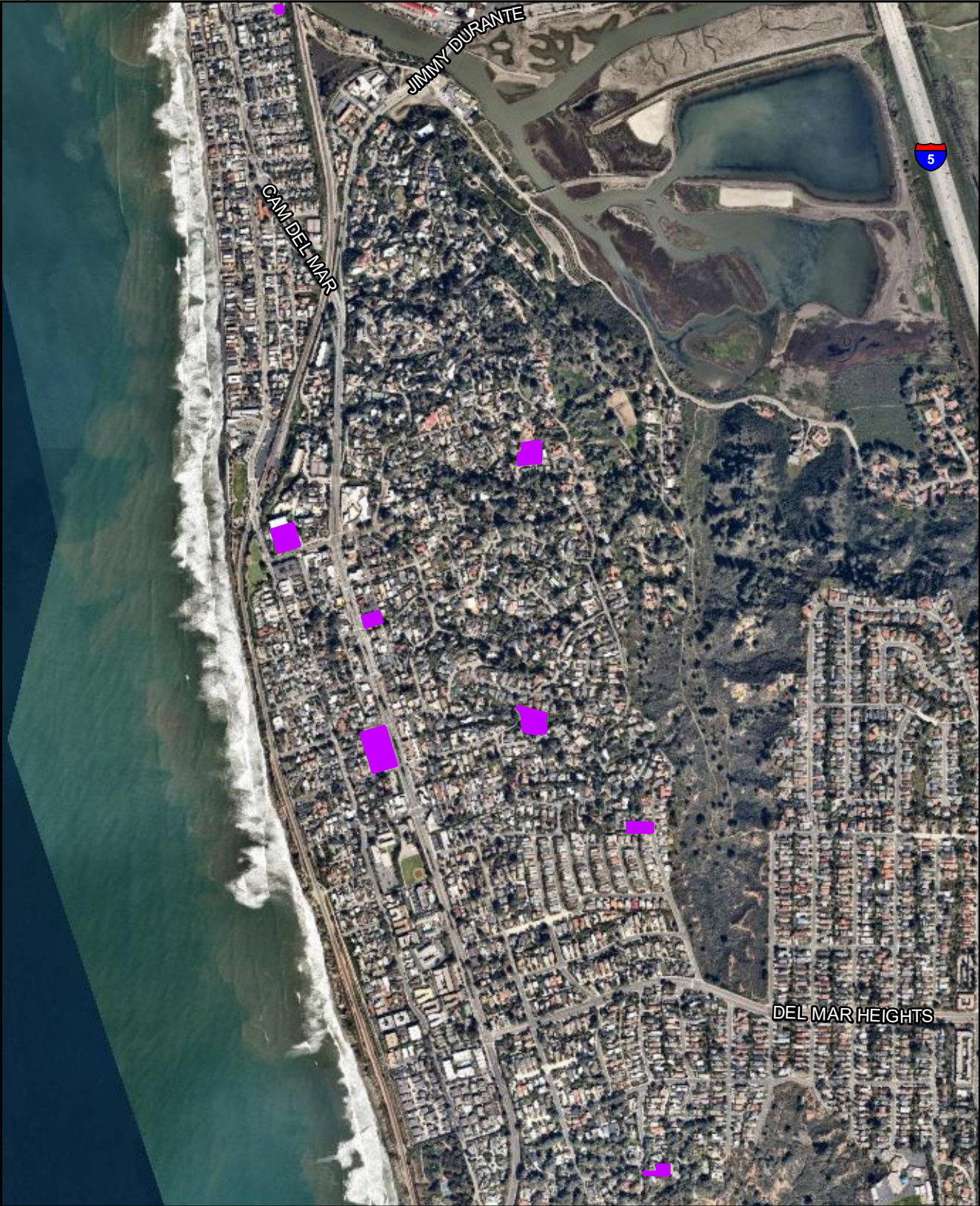
Sound levels are described in units called the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease. However, human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 A-weighted dB [dB(A)] barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (California Department of Transportation 2013).

In technical terms, sound levels are described as either a “sound power level” or a “sound pressure level,” which while commonly confused, are two distinct characteristics of sound. Both share the same unit of measure, the dB. However, sound power, expressed as L_{pw} , is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers such as an eardrum or microphone, the sound pressure level. Sound measurement instruments only measure sound pressure, and limits used in standards are generally sound pressure levels.

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 ordinary 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 sound levels of those sounds. 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 designated with the notation dB(A).

1.2.1 Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL).




 Public Facilities (PF) Zone

FIGURE 5

Public Facility (PF) Zone
(Does not include Shores Park Parcels)

The L_{eq} is the equivalent steady-state noise level in a stated period of time that is calculated by averaging the acoustic energy over a time period; when no period is specified, a 1-hour period is assumed.

The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and a 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

1.2.2 Propagation

Sound from a localized source (approximating a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dB(A) for each doubling of the distance.

Traffic noise is not a single, stationary point source of sound. The movement of vehicles 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 drop-off rate for a line source is 3 dB(A) for each doubling of distance.

The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site (such as parking lots or smooth bodies of water) receives no additional ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. A soft site (such as soft dirt, grass, or scattered bushes and trees) provides an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would drop off at 7.5 dB(A) per doubling of distance.

2.0 Applicable Standards

2.1 Del Mar Community Plan Noise Element

The City goals for transportation noise sources are published in the Community Plan Transportation Element, Noise Section (March 1976, including 1985 amendments). This section of the Community Plan identifies 65 CNEL as the maximum noise level compatible with residential land uses. The Community Plan has no transportation noise source requirements applicable to compatibility with commercial and retail uses.

2.2 Del Mar Municipal Code

2.2.1 Operation

Section 9.20.040 of the City's Municipal Code identifies noise limits based on zoning and states that:

- A. Unless otherwise specified, it shall be unlawful for any person(s) to cause noise by any means to the extent that the one-hour average sound level exceeds the applicable limit given in the following table at any location in the City of Del Mar beyond the premises on which the noise is produced, as measured pursuant to the provisions of this Chapter. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person(s).
- B. The noise limits specified in subsection (A) above shall be adjusted as follows to account for the effects of time and duration on the impact of noise levels:
 - 1. Noise that is produced for no more than a cumulative period of 30 minutes in any hour may exceed the noise limit by 3 decibels.
 - 2. Noise that is produced for no more than a cumulative period of 15 minutes in any hour may exceed the noise limit by 6 decibels.
 - 3. Noise that is produced for no more than a cumulative period of 10 minutes in any hour may exceed the noise limit by 8 decibels.
 - 4. Noise that is produced for no more than a cumulative period of 5 minutes in any hour may exceed the noise limit by 11 decibels.
 - 5. Noise that is produced for no more than a cumulative period of 2 minutes in any hour may exceed the noise limit by 15 decibels.
- C. For purposes of this chapter, the peak decibel reading for a noise with a fluctuating noise level (such as live or recorded music) shall be considered as the noise level for the entire cumulative period of noise. Likewise, the time between repetitive intermittent noises (such as banging, pounding, or hammering) shall be included in the cumulative of the noise.
- D. If the measured ambient level exceeds the applicable limit noted above, the allowable one-hour average sound level shall be the ambient noise level.
- E. The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits of the two districts.
- F. Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this Chapter, measured at or beyond six (6) feet from the boundary of the easement upon which the equipment is located.

The applicable noise limits are summarized in Table 1.

Table 1 City of Del Mar Municipal Code Section 9.20.040 Noise Level Limits		
Property Receiving Noise	Time of Day	One-Hour Average Sound Level (dBA) Limit
R1-5–Medium Density Single-Family Residential R1-5B–Medium Density Single-Family Residential–Beach R1-10–Low Density Residential R1-10B–Low Density Residential–Beach R-2–High Density Mixed Residential R1-14–Modified Low Density Residential R1-40–Very Low Density Residential RM-East–Medium Density Single-Mixed Residential–East RM-West–Medium Density Mixed Residential–West RM-Central–Medium Density Mixed Residential–Central RM-South–Medium Density Mixed Residential–South OS Overlay–Open Space Overlay Zone	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	50 40
NC–North Commercial Zone RC–Residential-Commercial Zone CC–Central Commercial Zone PC–Professional Commercial Zone BC–Beach Commercial Zone VC–Visitor Commercial Zone	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	60 50
RR – Railroad Right-of-Way Zone	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	60 55
SOURCE: Del Mar Municipal Code Section 9.20.040.		

2.2.2 Construction

Section 9.20.050 of the City’s Municipal Code identifies construction noise level limits and states that:

Any person who operates powered construction or landscape equipment and/or who erects, constructs, demolishes, excavates for, alters or repairs any building or structure within the City of Del Mar in such a manner as to cause noise to be received beyond the boundaries of the property on which the construction work is occurring shall comply with the following:

- A. No construction work shall be performed on Sundays or City holidays.
- B. No construction work shall be performed before 9:00 a.m. or after 7:00 p.m. on Saturday.
- C. No construction work shall be performed before 7:00 a.m. or after 7:00 p.m. on Monday through Friday.
- D. Construction activity shall not cause an hourly average sound level greater than 75 decibels on property zoned or used for residential purposes.
- E. Exception: A person may perform construction work on the person's own property, provided such construction activity is not carried on for profit or livelihood, between the hours of 10:00 a.m. and 5:00 p.m. on Sundays and City holidays.

2.3 California Code of Regulations

Interior noise levels for habitable rooms are regulated also by Title 24 of the California Code of Regulations (CCR), California Noise Insulation Standards. Title 24, Chapter 12, Section 1207.4, of the California Building Code requires that interior noise levels attributable to exterior sources not exceed 45 CNEL in any habitable room within a residential structure. A habitable room is a room used for living, sleeping, eating, or cooking. Bathrooms, closets, hallways, utility spaces, and similar areas are not considered habitable rooms for this regulation (24 CCR 1207 2016).

For non-residential structures, Title 24, Chapter 12, Section 1207.5 refers to 2016 California Green Building Standards, Chapter 5–Nonresidential Mandatory Measures, Division 5.5–Environmental Quality, Section 5.507–Environmental Comfort, Subsection 5.507.4–Acoustical Control. Pursuant to these standards, all nonresidential building construction shall employ building assemblies and components that achieve a composite sound transmission class rating of at least 50 or shall otherwise demonstrate that exterior noise shall not result in interior noise environment where noise levels exceed 50 dB(A) L_{eq} in occupied areas during any hour of operation (24 CCR 1207.5 2016).

3.0 Existing Conditions

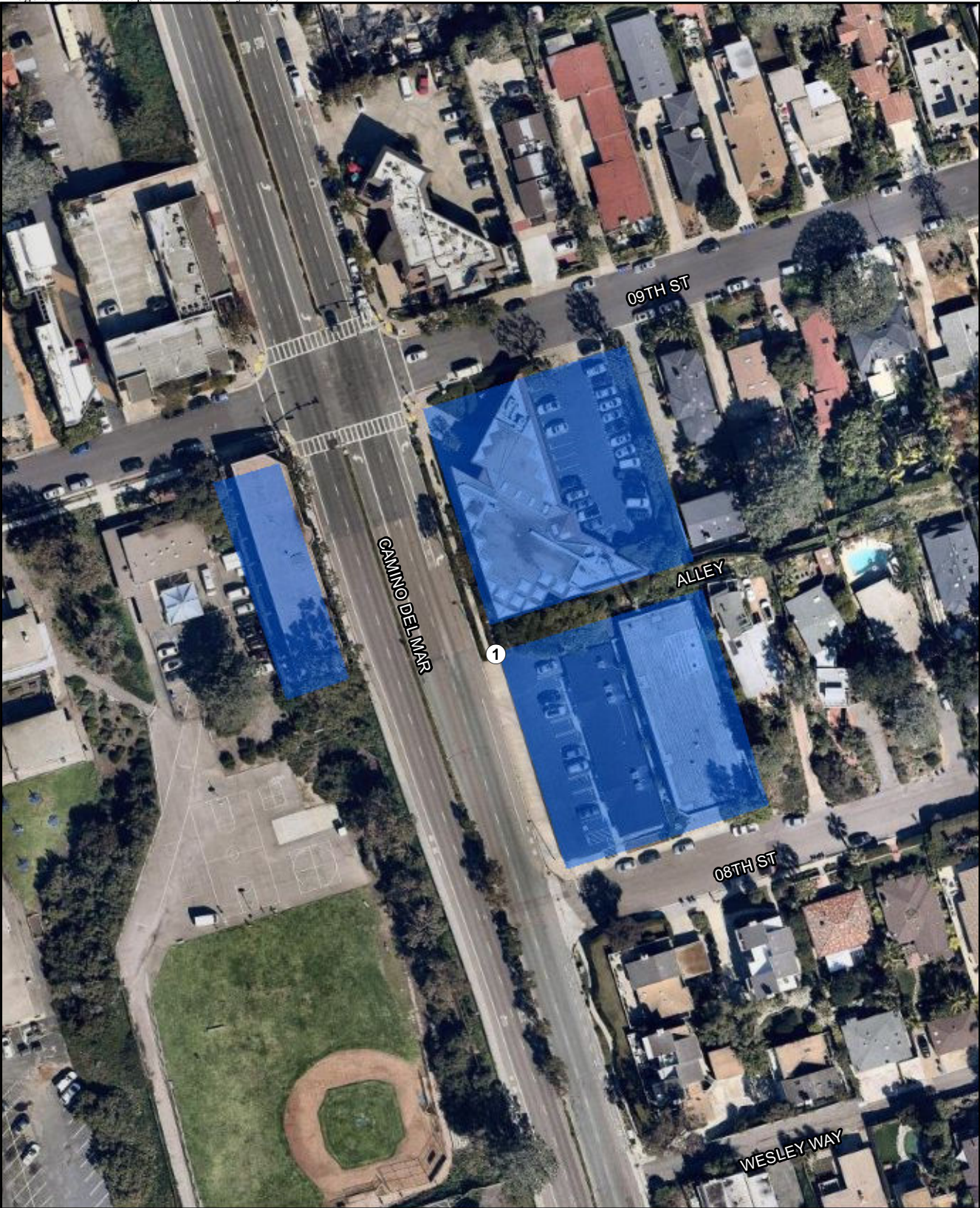
Existing noise levels in the vicinity of the program area were measured on May 8, 2019, using one Larson-Davis Model LxT, Type 1 Integrating Sound Level Meter, serial numbers 3827. The following parameters were used:

Filter:	A-weighted
Response:	Slow
Interval Period	1 minute
Time History Period:	5 seconds

The meters were calibrated before the measurements. The meter was set 5 feet above the ground level for each measurement. Noise measurements were taken to obtain typical ambient noise levels at the program sites and in the vicinity. The weather was cool and overcast. Three measurements were taken, as described below. The measurement locations are shown on Figures 6 and 7, and detailed data is contained in Attachment 1.

Measurement 1 was located adjacent to the PC parcels, approximately 55 feet east of Camino Del Mar (Figure 6). The main source of noise at this location was vehicle traffic on Camino Del Mar. Secondary sources of noise included pedestrians and a basketball at Shores Park. Noise levels were measured for 15-minutes, and vehicle traffic on Camino Del Mar was counted. The average measured noise level was 66.9 dB(A) L_{eq} .

Measurement 2 was located adjacent to the NC parcels, approximately 75 feet south of the traffic circle located at the intersection of Jimmy Durante Boulevard and San Dieguito Road (Figure 7). The main source of noise at this location was vehicle traffic on Jimmy Durante Boulevard and San Dieguito Road. Secondary sources of noise included aircraft and bird calls from the nearby exotic bird store. Noise levels were measured for 15-minutes, and vehicle traffic on the traffic circle was counted. The average measured noise level was 59.8 dB(A) L_{eq} .



- Measurement Location
- Professional Commercial (PC) Zone

FIGURE 6

Camino Del Mar Measurement Location

It should be noted that a portion of Jimmy Durante Boulevard at the intersection of Camino Del Mar was closed to northbound traffic due to construction activities. Construction noise was not audible at the measurement location; however, typical traffic volumes in the vicinity of the measurement location would be greater than what was observed during the measurement period due to this roadway closure.

Measurement 3 was located adjacent to the NC parcels, approximately 50 feet from the centerline of the railroad tracks (see Figure 7). The main source of noise at this location was train traffic. Two Amtrak Pacific Surfliner trains and one Coaster were observed during the measurement period. Secondary sources of noise included minor construction activities at the adjacent office building that is currently being remodeled. Noise levels were measured for 40 minutes. The average measured noise level was 61.5 dB(A) L_{eq} . The maximum measured noise levels during the train pass-bys were 77.8 dB(A) maximum sound level (L_{max}) for the first Amtrak train, 79.8 dB(A) L_{max} for the second Amtrak train, and 82.2 dB(A) L_{max} for the Coaster.

Noise measurements are summarized in Table 2. Vehicle traffic counts are summarized in Table 3.

Table 2 Noise Measurements				
Measurement	Location	Time	Noise Sources	L_{eq}
1	PC Zone, 55 feet east of Camino Del Mar	11:39 a.m.–11:54 a.m.	Vehicle traffic on Camino Del Mar	66.9
2	NC zone, 75 feet south of Jimmy Durante Boulevard and San Dieguito Road traffic circle	12:23 p.m.–12:38 p.m.	Vehicle traffic on Jimmy Durante Boulevard and San Dieguito Road	59.8
3	NC zone, 50 feet east of railroad tracks	12:48 p.m.–1: 28 p.m.	Amtrak Pacific Surfliner and Coaster	61.5
NOTE: Noise measurement data are contained in Attachment 1.				

Table 3 15-minute Traffic Counts							
Measurement	Roadway	Direction	Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
1	Camino Del Mar	Southbound	144	4	0	1	1
		Northbound	167	1	4	0	1
2	Jimmy Durante Boulevard and San Dieguito Road Traffic Circle		113	6	3	0	1



- Measurement Location
- North Commercial (NC) Zone



FIGURE 7

North Commercial Measurement Locations

4.0 Analysis Methodology

4.1 Construction

No specific construction or development is proposed at this time but would occur when future development is proposed. Future development as allowed under the proposed zoning could potentially result in temporary ambient noise increase due to construction activities.

Construction noise has the potential to result in temporary ambient noise increase due to construction activities. Construction noise is generated by diesel-powered construction equipment used for site preparation and grading, removal of existing structures and pavement, loading, unloading, and placing materials and paving. Diesel engine-driven trucks also bring materials to the site and remove the spoils from excavation. Table 4 summarizes typical construction equipment noise levels.

Table 4 Typical Construction Equipment Noise Levels		
Equipment	Noise Level at 50 Feet [dB(A) L_{eq}]	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 kilovolt ampts or less)	70	50%
Generator (more than 25 kilovolt amps)	82	50%
Grader	85	40%
Hydra Break Ram	90	10%
Impact Pile Driver (diesel or drop)	95	20%
In situ 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: Federal Highway Administration 2006. dB(A) L_{eq} = A-weighted decibels average noise level		

Construction equipment would generate maximum noise levels between 70 and 95 dB(A) L_{max} at 50 feet from the source when in operation. During excavation, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Average construction noise levels were calculated for the simultaneous operation of three common pieces of construction equipment: backhoe, excavator, and loader. The usage factors were applied to the maximum noise level at 50 feet for each piece of equipment, and then noise levels were added logarithmically. Hourly average noise levels would be approximately 83 dB(A) L_{eq} at 50 feet from the center of construction activity when assessing three pieces of common construction equipment working simultaneously. Noise levels would vary depending on the nature of the construction including the duration of specific activities, nature of the equipment involved, location of the particular receiver, and nature of intervening barriers.

Impacts are assessed in this analysis by identifying potential construction noise levels and buffer distances at which construction noise levels would be less than the noise levels identified in the City's Municipal Code (75 dB L_{eq} at residential uses).

4.2 Vehicle Traffic

Noise level predictions and contour mapping were developed using noise modeling software, SoundPlan Essential, version 4.1 (SoundPLAN; Navcon Engineering 2018). SoundPLAN calculates noise propagation based on the International Organization for Standardization method (ISO 9613-2–Acoustics, Attenuation of Sound during Propagation Outdoors). The model calculates noise levels at selected receiver locations using input parameter estimates such as total noise generated by each noise source; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. The model outputs can be developed as noise level contour maps or noise levels at specific receivers. In all cases, receivers were modeled at 5 feet above ground elevation, which represents the average height of the human ear.

The SoundPLAN program uses the Federal Highway Administration (FHWA) Traffic Noise Model algorithms and reference levels to calculate traffic noise levels at selected receiver locations. The model uses various input parameters, such as projected hourly average traffic rates; vehicle mix, distribution, and speed; roadway lengths and gradients; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. As a conservative analysis, topography and shielding provided by buildings or barriers was not taken into account.

The main source of traffic noise throughout the program area is vehicle traffic and rail traffic. Rail traffic parameters are discussed in Section 4.3. The main roadways bordering a majority of the parcels include: Camino Del Mar, Jimmy Durante Boulevard, San Dieguito Drive, 15th Street, and Coast Boulevard. Four of the PF parcels (299-260-45; 300-243-10; and 300-272-07) are located off of small residential roadways that do not carry a significant amount of traffic including Pine Needles Drive, Crest Road, 11th Street, and Zuni Drive. Noise levels adjacent to these roadways and at these four parcels would be well less than 65

CNEL and were not included in the SoundPLAN vehicle traffic noise calculations. For the purpose of the future traffic noise compatibility analysis, the noisiest condition is represented as the maximum level of service (LOS) C traffic volume. This condition represents a condition where the maximum number of vehicles are using the roadway at the maximum speed. LOS A and B categories allow full travel speed but do not have as many vehicles, while LOS E and F have a greater number of vehicles, but due to the traffic volume travel at reduced speeds, thus generating less noise.

In addition to traffic volumes and speeds, traffic noise levels are calculated based the day, evening, and nighttime distribution of vehicle traffic and the vehicle classification mixes. A standard 24-hour traffic distribution of 77 percent of vehicles traveling during the daytime hours (7:00 a.m. to 7:00 p.m.), 10 percent during the evening hours (7:00 p.m. to 10:00 p.m.), and 13 percent during the nighttime hours (10:00 p.m. to 7:00 a.m.) was modeled. A standard vehicle classification mix of 94 percent automobiles, 2 percent medium trucks, 1 percent heavy trucks, 1 percent buses, and 1 percent motorcycles was also modeled for all roadways. Based on field traffic counts, this is conservative.

Table 5 summarizes the vehicle traffic parameters used for modeling on-site noise levels.

Table 5 Vehicle Traffic Parameters			
Roadway	Roadway Classification	Maximum LOS C Volume	Speed (mph)
Camino Del Mar	4-Lane Collector	25,000	30
Jimmy Durante Boulevard	2-Lane Collector	13,000	40
South of Del Mar Fairgrounds	4-Lane Collector	25,000	40
North of Del Mar Fairground	2-Lane Collector (commercial-industrial fronting)	6,500	25
San Dieguito Drive	2-Lane Local	2,200	25
15 th Street	2-Lane Local	2,200	25
Coast Boulevard	2-Lane Local	2,200	25
LOS = Level of Service; mph = miles per hour			

4.3 Rail Traffic

An existing rail corridor runs along the western portion of the City, generally parallel to the Pacific Ocean. Railway noise results from trolley travel, horns, emergency signaling devices, and stationary bells at grade crossings. Amtrak operates Pacific Surfliner passenger trains and the NCTD operates Coaster commuter trains along this rail corridor daily. The Burlington Northern Santa Fe Railway Company also operates freight trains along the corridor daily. Noise generated by the rail traffic was modeled using the SoundPLAN program. SoundPLAN calculates trolley noise levels based on train speed, length, and the number of pass-bys that occur during the daytime, evening, and nighttime hours.

The number of daily pass-bys for commuter rail traffic was obtained from published Coaster and Amtrak schedules. Freight trains do not operate on a set schedule; however, all freight

traffic general occurs during the nighttime hours when the Coaster and Amtrak are not operating. The number of nightly freight train pass-bys was obtained from the Los Angeles–San Diego–San Luis Obispo (LOSSAN) Rail Corridor Agency Strategic Implementation Plan (LOSSAN 2012). The number of daytime, evening, and nighttime train pass-bys is summarized in Table 6.

Table 6 Number of Daily Trains			
Train	Daytime 7:00 p.m. to 7:00 p.m.	Evening 7:00 p.m. to 10:00 p.m.	Nighttime 10:00 p.m. to 7:00 a.m.
Coaster	16	4	6
Amtrak	16	4	6
Freight	0	0	6

Coaster and Amtrak trains were modeled at a speed of 40 miles per hour with a train length of approximately 175 meters, which includes one 25-meter engine and six 25-meter cars. Freight trains were modeled as a speed of 40 miles per hour with a train length of approximately 550 meters, which includes two 25-meter engine and twenty 25-meter cars.

5.0 Future Acoustical Environment and Impacts

5.1 Construction Noise

Although no specific construction or development is proposed at this time, construction noise impacts could occur as future development within the program area occurs. Due to the developed nature of the program area, there is a high likelihood that construction activities would take place adjacent to existing structures and that residential uses would be located in proximity to construction activities.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition; land clearing, grading, and excavation; erection). Construction noise would be short term and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and the use of power tools. Noise would also be generated by construction equipment use, including earthmovers, material handlers, and portable generators, and could reach high noise levels for brief periods.

As discussed in Section 4.1, hourly average noise levels would be approximately 83 dB(A) L_{eq} at 50 feet from the center of construction activity when assessing three pieces of common construction equipment working simultaneously. Noise levels would vary depending on the nature of the construction activities including the duration of specific activities, the equipment involved, the location of the sensitive receivers, and the presence of intervening barriers. Construction noise levels of 83 dB(A) L_{eq} at 50 feet would attenuate to 75 dB(A) L_{eq} at 120 feet. Therefore, significant impacts could occur if residential uses are located closer than 120 feet of construction activities.

The City regulates construction noise through Section 9.20.050 of the Municipal Code, which puts limits on the days of the week and hours of operation allowed for construction. Residential uses are located adjacent to the parcels within the program area. Therefore, the future projects could generate construction noise that would potentially exceed the Municipal Code hourly noise threshold of 75 dB(A) L_{eq} at residential properties. However, future development allowed by the program would be required to comply with the Municipal Code and design review process to incorporate noise abatement measures as necessary to limit construction noise to 75 dB(A) L_{eq} or below at residences. Possible measures to reduce construction noise include the following:

- All construction equipment shall be equipped with improved noise muffling, and have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators in good working condition;
- If possible, hydraulic equipment instead of pneumatic impact tools and electric powered equipment instead of diesel-powered equipment shall be used for all exterior construction work; and
- All equipment shall be turned off if not in use.

As required by the Municipal Code, construction activities would occur during daytime hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and Saturday between the hours of 9:00 a.m. and 7:00 p.m., and no work would be conducted on Sundays or City-designated holidays. Future development within the program area would be required to comply with all Municipal Code regulations as well as undergo review by the Design Review Board, thereby ensuring future construction in proximity to residential uses would implement noise reduction measures to reduce noise levels to 75 dB(A) L_{eq} or less at residential properties. Thus, with these processes in place, construction noise impacts due to the program would be less than significant.

5.2 Vehicle and Rail Traffic

5.2.1 On-site Noise Compatibility

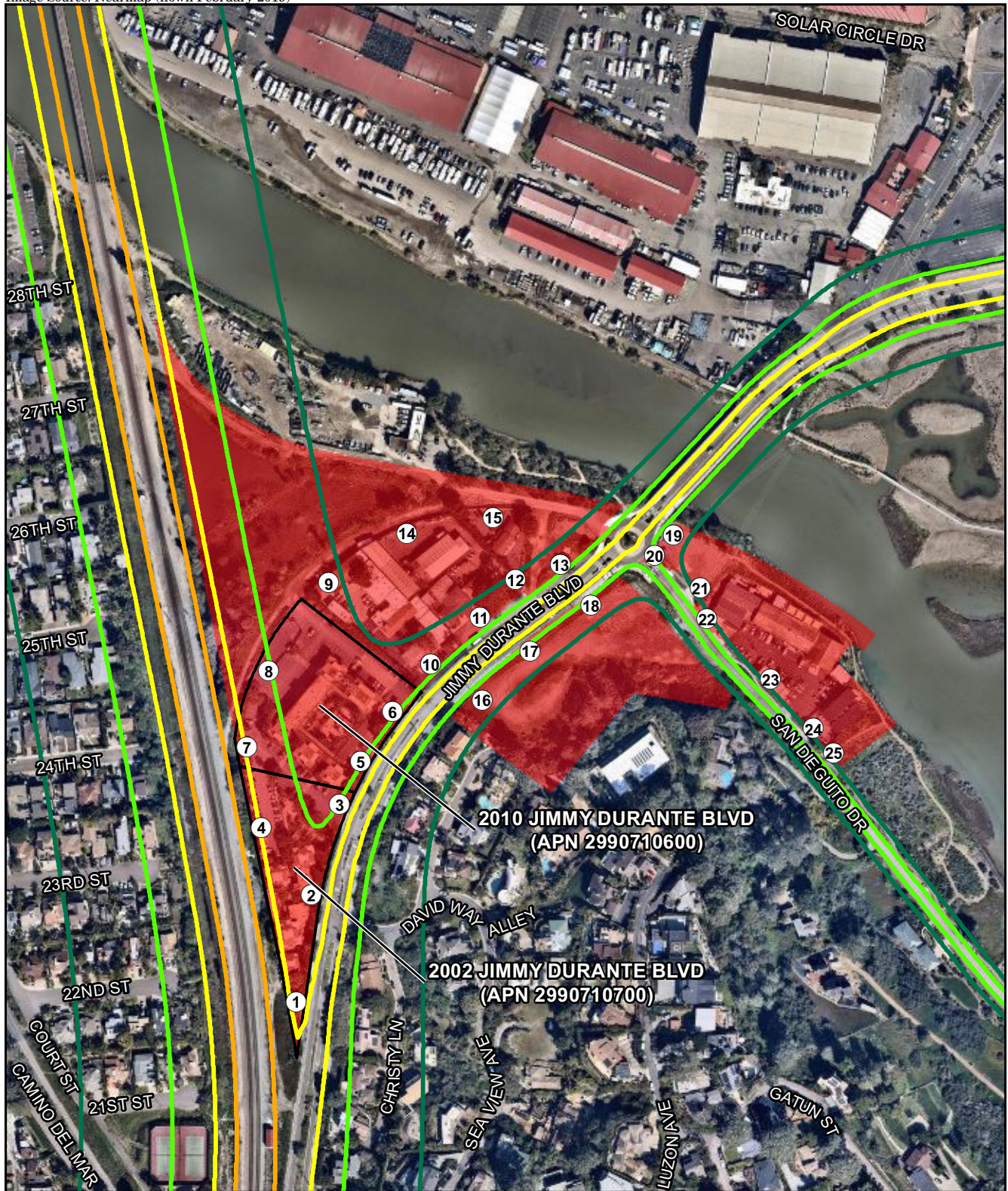
5.2.1.1 Exterior Noise

On-site traffic noise contours due to vehicle traffic and rail traffic were developed using the SoundPLAN program. Noise level contours were modeled at the first-floor level of each affect parcel. Noise levels were also modeled as specific receiver locations on each parcel. SoundPLAN data are contained in Attachment 2. Exterior noise levels are summarized in Table 7.

Table 7 Future Vehicle and Rail Traffic Noise Levels (CNEL)	
Receiver	Noise Level
NC-1	69
NC-2	67
NC-3	65
NC-4	70
NC-5	65
NC-6	64
NC-7	70
NC-8	65
NC-9	61
NC-10	63
NC-11	62
NC-12	61
NC-13	63
NC-14	58
NC-15	57
NC-16	62
NC-17	63
NC-18	63
NC-19	62
NC-20	65
NC-21	59
NC-22	62
NC-23	58
NC-24	58
NC-25	58
PC-1	62
PC-2	62
PC-3	62
PC-4	62
PC-5	62
PC-6	62
PF-1	62
PF-2	62
PF-3	62
PF-4	62
PF-5	60
PF-6	61
PF-7	63
PF-8	67
CNEL = community noise equivalent level Bold = Exceeds 65 CNEL	

North Commercial Zone

Figure 8 shows the vehicle and rail traffic noise contours for the NC zone. As shown, noise levels at southernmost parcel (2002 Jimmy Durante Boulevard, APN 299-071-07, Receivers NC-1 through NC-4) would exceed 65 CNEL. This parcel is currently developed with commercial office and retail uses. Noise levels would also exceed 65 CNEL within the southwest portion, and the eastern edge of the adjacent parcel (2010 Jimmy Durante Boulevard, APN 299-071-06, Receivers NC-8 through NC-5) closest to the railroad tracks.



Vehicle/Railroad Traffic

- 60 CNEL
- 65 CNEL
- 70 CNEL
- 75 CNEL

○ NC Receivers

■ North Commercial (NC) Zone

0 Feet 300



FIGURE 8

North Commercial Noise Contours

This parcel is also developed with commercial office and retail uses. Noise levels are compatible with the current zoning for these parcels. However, should these parcels be redeveloped with residential uses, exterior noise levels closest to Jimmy Durante Boulevard and the railroad tracks would be incompatible, and noise impacts would be significant.

At any specific location the actual existing noise depends on the nature of the path from the source to the sensitive receptor. Buildings, walls, dense vegetation, and other barriers would block the direct line of sight and reduce noise levels at the receptor. As an example, a first row of buildings would reduce traffic noise levels at receptors by 3 to 5 dB(A) behind those structures depending on the building-to-gap ratio. Large continuous structures can provide substantially greater attenuation of traffic and rail noise. Multi-family and mixed-use developments could be designed such that proposed buildings shield exterior use areas from adjacent roadways and railroad tracks, thereby reducing exterior noise levels to 65 CNEL or less. However, no development is proposed at this time, therefore actual noise levels at exterior use areas cannot be determined. Thus, for the NC zone, the following mitigation is required:

NOISE-1: Prior to the issuance of building permits for residential development proposed in the NC zone at 2002 Jimmy Durante Boulevard (APN 299-071-07) and 2010 Jimmy Durante Boulevard (APN 299-071-06) and in the PF zone at 2809 28th Street (APN 299-030-12), a noise analysis shall be submitted demonstrating the exterior noise levels at any exterior use areas do not exceed 65 CNEL.

Professional Commercial Zone

Figure 9 shows the vehicle and rail traffic noise contours for the PC zone. As shown in Figure 9 and Table 7, noise levels at the PC zone would be 65 CNEL or less at all parcels. Therefore, exterior noise impacts to residential uses constructed within the PC zone would be less than significant.

Public Facilities Commercial Zone

Figures 10a and 10b show the vehicle and rail traffic noise contours for the PF zone. As shown in Figures 10a and 10b and Table 7, noise levels at the PF zone would be 65 CNEL or less at the City Hall (Receivers PF-1 through PF-3) and United States Postal Service (Receiver PF-4) parcels located adjacent to Camino Del Mar and the library parcel (Receivers PF-5 through PF-7) located adjacent to 15th Street and Coast Boulevard. Additionally, the four easternmost PF zone parcels are not located adjacent to any major roadways, and noise levels would be less than 65 CNEL. Therefore, exterior noise impacts to residential uses constructed all parcels within the PF zone except for the northern vacant City parcel (Receiver PF-8, 2809 28th Street, APN 299-030-12) would be less than significant.

The northernmost PF parcel (Receiver PF-8, 299-030-12) is located adjacent to the railroad tracks. Noise levels due to rail traffic would exceed 65 CNEL across most of the parcel. Should residential uses be constructed on this parcel, exterior noise levels closest to the railroad tracks would be incompatible, and noise impacts would be significant. Therefore, mitigation measure NOISE-1 would be required to demonstrate that exterior noise levels at the exterior use areas would be reduced to 65 CNEL or less.



Vehicle/Railroad Traffic

- 60 CNEL
- 65 CNEL
- 70 CNEL
- 75 CNEL

○ PC Receivers

■ Professional Commercial (PC) Zone

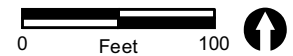


FIGURE 9

Professional Commercial Noise Contours



Vehicle/Railroad Traffic

- 60 CNEL
- 65 CNEL
- 70 CNEL
- 75 CNEL

○ PF Receivers

Public Facilities (PF) Zone

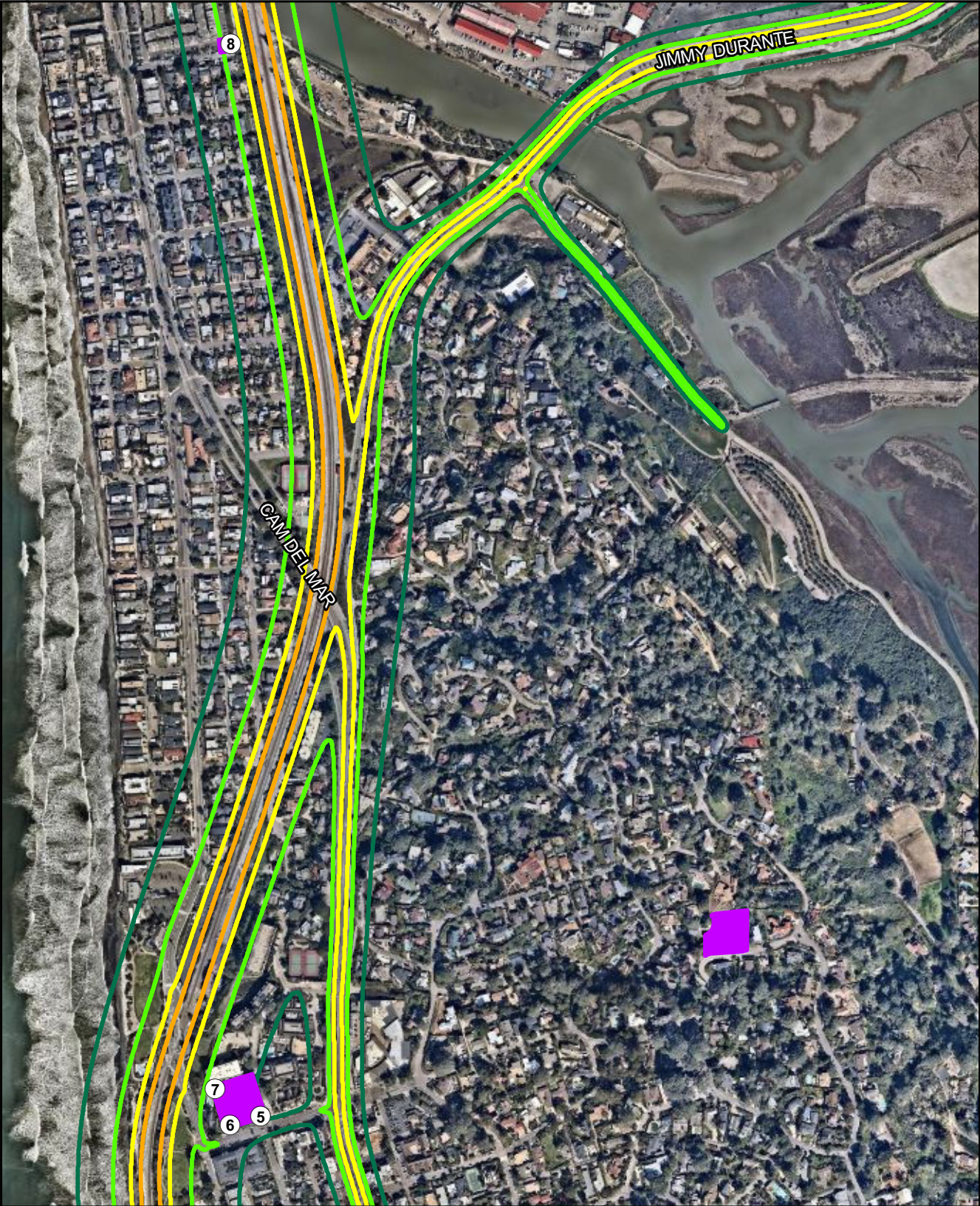
0 Feet 600



RECON

M:\JOBS5\9348\common_gis\fig10a_nos.mxd 9/19/2019 bma

FIGURE 10a
Public Facility Noise Contours - South



Vehicle/Railroad Traffic

- 60 CNEL
- 65 CNEL
- 70 CNEL
- 75 CNEL

○ PF Receivers

Public Facilities (PF) Zone

0 Feet 600



RECON

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FIGURE 10b
Public Facility Noise Contours - North

5.2.1.2 Interior Noise

Interior noise levels can be reduced through standard construction techniques. When windows are closed, standard construction techniques provide various exterior-to-interior noise level reductions depending on the type of structure and window. According to the FHWA's *Highway Traffic Noise Analysis and Abatement Guidance*, buildings with masonry façades and double glazed windows can be estimated to provide a noise level reduction of 35 dB, while light-frame structures with double glazed windows may provide noise level reductions of 25 dB (FHWA 2011). As shown in Table 7, exterior noise levels at all parcels throughout the program area would be 70 CNEL or less. Thus, with standard light-frame construction, interior noise levels would be reduced to 45 CNEL or less and would be compatible with City standards. Therefore, with standard construction techniques, interior noise levels at all affected parcels would be less than significant.

5.2.2 Off-site Vehicle Traffic Noise

Off-site vehicle traffic noise impacts would occur if a future project would increase vehicle traffic volumes on area roadways enough to results in a 3 dB or more increase in ambient noise levels. The program would allow for increased construction of residential uses throughout the program area, which generally generates less traffic than commercial office and retail uses. Table 8 summarizes the trip generation associated with the existing on-the-ground uses, the existing zoning, and the proposed zoning (assuming residential uses would replace the existing commercial/retail uses).

Table 8 Trip Generation		
Land Use	Amount (square feet or dwelling units for residential)	Daily Trips
Existing On-the-Ground Development		
Specialty Commercial	8,687	348
Commercial Office	107,625	2,153
Restaurant	4,378	700
Auto Repair	3,310	66
Storage	1,000	2
Medical Office	7,085	354
Government (Civic Center)	11,894	357
Library	4,795	240
Post Office	7,000	630
Other City Properties (including water tanks)	N/A	
Total Trips		4,850
Existing Zoning		
Commercial Retail (Strip Mall)	147,554	5,902
Commercial Office	33,814	676
Public Facilities (Civic Center)	23,689	711
Total Trips		7,289
Proposed Zoning – All Residential		
Residential (6–20 du/acre)	345	2,760
Total Trips		2,760
du/acre = dwelling units per acre Source: Linscott, Law & Greenspan, Engineers 2019		

As shown, buildout of the program as analyzed herein would generate less traffic than both the existing on-the-ground development and the existing zoning. Therefore, it can be concluded that the program would not result in an increase in ambient noise levels on the program area roadway network. Off-site vehicle traffic noise increases would be less than significant.

5.3 On-site Generated Noise

Stationary sources of noise include activities associated with a given land use. Various land uses contain on-site stationary noise sources, including rooftop heating, ventilation, and air conditioning (HVAC) equipment; mechanical equipment; emergency electrical generators; parking lot activities; loading dock operations; and recreation activities. Stationary noise is considered a “point source” and attenuates over distance at a rate of 6 dB(A) for each doubling of distance. The exact location and nature of future stationary noise sources is not known at this time and can, therefore, not be calculated in this analysis.

Residential uses are generally not a significant stationary source of noise as they typically do not include large noise-generating mechanical equipment. However, the addition of multiple-dwelling unit residential uses to the existing mix of allowed uses could result in the exposure of residential uses to the stationary noise sources listed above. Noise levels would have the potential to exceed the applicable Noise Ordinance limits in the NC and PC zones.

However, future development within the program area would be required to comply with all Municipal Code regulations as well as undergo review by the Design Review Board, thereby ensuring on-site generation noise levels would comply with applicable Noise Ordinance limits. Thus, with these processes in place, through implementation of the City’s Noise Ordinance, stationary noise impacts due to the program would be less than significant.

6.0 Conclusions

6.1 Construction

Although no specific construction or development is proposed at this time, construction noise impacts could occur as future development within the program area occurs. Due to the developed nature of the program area, there is a high likelihood that construction activities would take place adjacent to existing structures and that residential uses would be located in proximity to construction activities.

The City regulates construction noise through Section 9.20.050 of the Municipal Code, which puts limits on the days of the week and hours of operation allowed for construction. Residential uses are located adjacent to the affected parcels, therefore, the future projects could generate construction noise that would potentially exceed the Municipal Code hourly noise threshold of 75 dB(A) L_{eq} at residential properties. However, future development within the program area would be required to comply with all Municipal Code regulations as well

as undergo review by the Design Review Board, thereby ensuring future construction in proximity to residential uses would implement noise reduction measures to reduce noise levels to 75 dB(A) L_{eq} or less at residential properties. Thus, with these processes in place, construction noise impacts due to the program would be less than significant.

6.2 Vehicle Traffic

6.2.1 On-site Vehicle Traffic Noise

The main source of noise throughout the program area is vehicle traffic and rail traffic. The roadways bordering the affected parcels include: Camino Del Mar, Jimmy Durante Boulevard, San Dieguito Drive, 15th Street, and Coast Boulevard. Amtrak operates Pacific Surfliner passenger trains and the NCTD operates Coaster commuter trains along the existing rail corridor that runs along the western portion of the city of Del Mar. Noise levels due to vehicle and rail traffic were calculated at each of the parcels in the program area. As shown in Figure 8, Figure 10a, Figure 10b, and Table 7, noise levels would exceed the residential compatibility level of 65 CNEL at 2002 Jimmy Durante Boulevard (APNs 299-071-06 and 299-071-07) in the NC zone and at 2809 28th Street (APN 299-030-12) in the PF zone. Should these parcels be redeveloped with residential uses, exterior noise levels closest to Jimmy Durante Boulevard and the railroad tracks would be incompatible, and noise impacts would be significant. The following mitigation measure is required:

NOISE-1: Prior to the issuance of building permits for residential development proposed in the NC zone at 2002 Jimmy Durante Boulevard (APN 299-071-07) and 2010 Jimmy Durante Boulevard (APN 299-071-06) and in the PF zone at 2809 28th Street (APN 299-030-12), a noise analysis shall be submitted demonstrating the exterior noise levels at any exterior use areas do not exceed 65 CNEL.

With implementation of this measure, exterior noise levels at any residential development proposed within these portions of the NC and PF zones would be reduced to 65 CNEL or less.

As shown in Table 7 and Figures 9 and 10, noise levels at all parcels in the PC zone and all parcels except 2809 28th Street in the PF zone would be 65 CNEL or less. Therefore, exterior noise impacts to residential uses constructed within the PC zone and all parcels of the PF zone except 2809 28th Street would be less than significant.

Interior noise levels can be reduced through standard construction techniques. Exterior noise levels at all affected lots would be 70 CNEL or less. Thus, with standard light-frame construction, interior noise levels would be reduced to 45 CNEL or less and would be compatible with City standards. Therefore, with standard construction techniques, interior noise levels at all affected parcels would be less than significant.

6.2.2 Off-site Vehicle Traffic Noise

The program would generate less traffic than both the existing on-the-ground development and the existing zoning. Therefore, it can be concluded that the program would not result in an increase in ambient noise levels on the program area roadway network. Off-site vehicle traffic noise increases would be less than significant.

6.3 On-site Generated Noise

Stationary sources of noise include activities associated with a given land use. Various land uses contain on-site stationary noise sources, including rooftop HVAC equipment; mechanical equipment; emergency electrical generators; parking lot activities; loading dock operations; and recreation activities. The addition of multiple-dwelling unit residential uses to the existing mix of allowed uses could result in the exposure of residential uses to these stationary noise sources. Noise levels would have the potential to exceed the applicable Noise Ordinance limits. However, future development within the program area would be required to comply with all Municipal Code regulations as well as undergo review by the Design Review Board, thereby ensuring on-site generation noise levels would comply with applicable Noise Ordinance limits. Thus, with these processes in place, through implementation of the City's Noise Ordinance, stationary noise impacts due to the program would be less than significant.

7.0 References Cited

California Code of Regulations

- 2016 2016 *California Building Code, California Code of Regulations, Title 24, Chapter 12 Interior Environment, Section 1207, Sound Transmission*, accessed at <http://www.bsc.ca.gov/codes.aspx>.

California Department of Transportation (Caltrans)

- 2013 Technical Noise Supplement. November.

Federal Highway Administration (FHWA)

- 2006 FHWA Highway Construction Noise Handbook. Prepared by U.S. Department of Transportation Research and Innovative Technology Administration. Prepared for FHWA Office of Natural and Human Environment. FHWA-HEP-06-015. Final Report August 2006.
- 2011 Highway Traffic Noise: Analysis and Abatement Guidance. FHWA-HEP-10-025. December 2011.

Linscott, Law, and Greenspan (LLG)

- 2019 Transportation Impact Analysis for the Del Mar Zoning Amendment. LLG Ref: 3-19-3057. April 17, 2019.

Los Angeles–San Diego–San Luis Obispo (LOSSAN) Rail Corridor Agency

- 2012 LOSSAN Corridorwide Strategic Implementation Plan. April 2012.

Navcon Engineering, Inc.

- 2018 SoundPLAN Essential version 4.1.

ATTACHMENTS

ATTACHMENT 1

Noise Measurement Data

9348 Del Mar Zoning Amendment
Noise Measurement Data

Summary

Filename LxT_Data.009
Serial Number 3827
Model SoundExpert™ LxT
Firmware Version 2.301
User jlf
Location Del Mar Zoning Amendment
Job Description 9348.0
Note
Measurement Description
Start 2019/05/08 11:38:28
Stop 2019/05/08 11:53:51
Duration 0:15:06.1
Run Time 0:15:06.1
Pause 0:00:00.0

Pre Calibration 2019/05/08 10:26:35
Post Calibration None
Calibration Deviation ---

Overall Settings

RMS Weight A Weighting
Peak Weight A Weighting
Detector Slow
Preamp PRMLxT1L
Microphone Correction Off
Integration Method Linear
OBA Range Normal
OBA Bandwidth 1/1 and 1/3
OBA Freq. Weighting A Weighting
OBA Max Spectrum At Lmax
Overload 121.8 dB
A C Z
Under Range Peak **78.1** 75.1 80.1 dB
Under Range Limit **26.0** 25.2 32.0 dB
Noise Floor 16.3 16.1 22.0 dB

Results

L_{Aeq} 66.9 dB
L_{AE} 96.5 dB
E_A 497.307 µPa²h
L_{Apeak} (max) 2019/05/08 11:41:53 91.0 dB
L_{ASmax} 2019/05/08 11:52:16 78.4 dB
L_{ASmin} 2019/05/08 11:40:54 47.7 dB
SEA -99.9 dB

L_{AS} > 85.0 dB (Exceedence Counts / Duration) 0 0.0 s
L_{AS} > 115.0 dB (Exceedence Counts / Duration) 0 0.0 s
L_{Apeak} > 135.0 dB (Exceedence Counts / Duration) 0 0.0 s
L_{Apeak} > 137.0 dB (Exceedence Counts / Duration) 0 0.0 s
L_{Apeak} > 140.0 dB (Exceedence Counts / Duration) 0 0.0 s

Community Noise

	L _{dn}	L _{Day} 07:00-22:00	L _{Night} 22:00-07:00	L _{den}	L _{Day} 07:00-19:00	L _{Evening} 19:00-22:00	L _{Night} 22:00-07:00
	66.9	66.9	-99.9	66.9	66.9	-99.9	-99.9
L _{Ceq}	75.3 dB						
L _{Aeq}	66.9 dB						
L _{Ceq} - L _{Aeq}	8.4 dB						
L _{Aleq}	68.2 dB						
L _{Aeq}	66.9 dB						
L _{Aleq} - L _{Aeq}	1.2 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

Statistics

L_{AS5.00} 72.1 dB
L_{AS10.00} 70.5 dB
L_{AS33.30} 66.5 dB
L_{AS50.00} 64.3 dB
L_{AS66.60} 61.8 dB
L_{AS90.00} 53.9 dB

9348 Del Mar Zoning Amendment
Noise Measurement Data

Summary

Filename LxT_Data.010
Serial Number 3827
Model SoundExpert™ LxT
Firmware Version 2.301
User jlf
Location Del Mar Zoning Amendment
Job Description 9348.0
Note
Measurement Description
Start 2019/05/08 12:23:12
Stop 2019/05/08 12:38:23
Duration 0:15:04.2
Run Time 0:15:04.2
Pause 0:00:00.0

Pre Calibration 2019/05/08 10:26:35
Post Calibration None
Calibration Deviation ---

Overall Settings

RMS Weight A Weighting
Peak Weight A Weighting
Detector Slow
Preamp PRMLxT1L
Microphone Correction Off
Integration Method Linear
OBA Range Normal
OBA Bandwidth 1/1 and 1/3
OBA Freq. Weighting A Weighting
OBA Max Spectrum At Lmax
Overload 121.8 dB
A C Z
Under Range Peak **78.1** 75.1 80.1 dB
Under Range Limit **26.0** 25.2 32.0 dB
Noise Floor 16.3 16.1 22.0 dB

Results

LAeq 66.2 dB* ***Meter was bumped at beginning of measurement, causing a spike in noise.**
LAE 95.7 dB **Actual measured noise level without this interference is 59.8**
EA 417.164 µPa²h
LApeak (max) 2019/05/08 12:23:46 107.5 dB
LASmax 2019/05/08 12:23:47 91.5 dB
LASmin 2019/05/08 12:28:52 42.5 dB
SEA -99.9 dB

LAS > 85.0 dB (Exceedence Counts / Duration) 1 3.6 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

Community Noise

Ldn LDay 07:00-22:00 LNight 22:00-07:00 Lden LDay 07:00-19:00 LEvening 19:00-22:00 LNight 22:00-07:00
66.2 66.2 -99.9 66.2 66.2 -99.9 -99.9
LCeq 75.7 dB
LAeq 66.2 dB
LCeq - LAeq 9.5 dB
LAeq 69.8 dB
LAeq 66.2 dB
LAeq - LAeq 3.6 dB
Overloads 0
Overload Duration 0.0 s
OBA Overloads 0
OBA Overload Duration 0.0 s

Statistics

LAS5.00 65.9 dB
LAS10.00 62.3 dB
LAS33.30 57.1 dB
LAS50.00 54.5 dB
LAS66.60 52.1 dB
LAS90.00 46.1 dB

9348 Del Mar Zoning Amendment
Noise Measurement Data

Summary

Filename LxT_Data.011
Serial Number 3827
Model SoundExpert™ LxT
Firmware Version 2.301
User jlf
Location Del Mar Zoning Amendment
Job Description 9348.0
Note
Measurement Description
Start 2019/05/08 12:47:24
Stop 2019/05/08 13:27:56
Duration 0:40:28.1
Run Time 0:40:28.1
Pause 0:00:00.0

Pre Calibration 2019/05/08 10:26:35
Post Calibration None
Calibration Deviation ---

Overall Settings

RMS Weight A Weighting
Peak Weight A Weighting
Detector Slow
Preamp PRMLxT1L
Microphone Correction Off
Integration Method Linear
OBA Range Normal
OBA Bandwidth 1/1 and 1/3
OBA Freq. Weighting A Weighting
OBA Max Spectrum At Lmax
Overload 121.8 dB
A C Z
Under Range Peak **78.1** 75.1 80.1 dB
Under Range Limit **26.0** 25.2 32.0 dB
Noise Floor 16.3 16.1 22.0 dB

Results

L_{Aeq} 61.5 dB
L_{AE} 95.4 dB
E_A 384.053 µPa²h
L_{Apeak} (max) 2019/05/08 13:05:40 99.3 dB
L_{ASmax} 2019/05/08 13:27:29 85.6 dB
L_{ASmin} 2019/05/08 12:49:49 44.9 dB
SEA -99.9 dB

L_{AS} > 85.0 dB (Exceedence Counts / Duration) 1 1.7 s
L_{AS} > 115.0 dB (Exceedence Counts / Duration) 0 0.0 s
L_{Apeak} > 135.0 dB (Exceedence Counts / Duration) 0 0.0 s
L_{Apeak} > 137.0 dB (Exceedence Counts / Duration) 0 0.0 s
L_{Apeak} > 140.0 dB (Exceedence Counts / Duration) 0 0.0 s

Community Noise

	L _{dn}	L _{Day} 07:00-22:00	L _{Night} 22:00-07:00	L _{den}	L _{Day} 07:00-19:00	L _{Evening} 19:00-22:00	L _{Night} 22:00-07:00
	61.5	61.5	-99.9	61.5	61.5	-99.9	-99.9
L _{Ceq}	70.3 dB						
L _{Aeq}	61.5 dB						
L _{Ceq} - L _{Aeq}	8.8 dB						
L _{Aleq}	64.2 dB						
L _{Aeq}	61.5 dB						
L _{Aleq} - L _{Aeq}	2.6 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

Statistics

L_{AS5.00} 61.9 dB
L_{AS10.00} 57.2 dB
L_{AS33.30} 52.4 dB
L_{AS50.00} 51.2 dB
L_{AS66.60} 50.3 dB
L_{AS90.00} 48.8 dB

ATTACHMENT 2

SoundPLAN Data–Vehicle and Rail Traffic

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

Station km	ADT Veh/24h	Traffic values Vehicles type	Vehicle nar day Veh/h	evening Veh/h	night Veh/h	Speed km/h	Control device	Constr. Speed km/h	Affect. veh. %	Road surface	Gradient Min / Max %
Camino Del Mar Traffic direction: In entry direction											
0+000	24996	Total	-	1604	833	361 -	none	-	-	Average (of DGAC and PCC)	0
0+000	24996	Automobiles	-	1524	791	343	48 none	-	-	Average (of DGAC and PCC)	0
0+000	24996	Medium trucks	-	32	17	7	48 none	-	-	Average (of DGAC and PCC)	0
0+000	24996	Heavy trucks	-	16	8	4	48 none	-	-	Average (of DGAC and PCC)	0
0+000	24996	Buses	-	16	8	4	48 none	-	-	Average (of DGAC and PCC)	0
0+000	24996	Motorcycles	-	16	8	4	48 none	-	-	Average (of DGAC and PCC)	0
0+000	24996	Auxiliary vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+654	-	-	-	-	-	-	-	-	-	-	-
15th Street Traffic direction: In entry direction											
0+000	2199	Total	-	141	73	32 -	none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Automobiles	-	134	69	30	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Medium trucks	-	3	1	1	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Heavy trucks	-	1	1	0	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Buses	-	1	1	0	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Motorcycles	-	1	1	0	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Auxiliary vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+184	-	-	-	-	-	-	-	-	-	-	-
Ocean Boulevard Traffic direction: In entry direction											
0+000	2199	Total	-	141	73	32 -	none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Automobiles	-	134	69	30	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Medium trucks	-	3	1	1	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Heavy trucks	-	1	1	0	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Buses	-	1	1	0	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Motorcycles	-	1	1	0	40 none	-	-	Average (of DGAC and PCC)	0
0+000	2199	Auxiliary vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+366	-	-	-	-	-	-	-	-	-	-	-
Jimmy Durante Boulevard Traffic direction: In entry direction											
0+000	12999	Total	-	834	433	188 -	none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Automobiles	-	792	411	179	64 none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Medium trucks	-	17	9	4	64 none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Heavy trucks	-	8	4	2	64 none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Buses	-	8	4	2	64 none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Motorcycles	-	8	4	2	64 none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Auxiliary vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+890	24996	Total	-	1604	833	361 -	none	-	-	Average (of DGAC and PCC)	0
0+890	24996	Automobiles	-	1524	791	343	64 none	-	-	Average (of DGAC and PCC)	0
0+890	24996	Medium trucks	-	32	17	7	64 none	-	-	Average (of DGAC and PCC)	0
0+890	24996	Heavy trucks	-	16	8	4	64 none	-	-	Average (of DGAC and PCC)	0
0+890	24996	Buses	-	16	8	4	64 none	-	-	Average (of DGAC and PCC)	0
0+890	24996	Motorcycles	-	16	8	4	64 none	-	-	Average (of DGAC and PCC)	0
0+890	24996	Auxiliary vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+510	-	-	-	-	-	-	-	-	-	-	-
San Dieguito Drive Traffic direction: In entry direction											
0+000	6501	Total	-	417	217	94 -	none	-	-	Average (of DGAC and PCC)	0
0+000	6501	Automobiles	-	396	206	89	40 none	-	-	Average (of DGAC and PCC)	0
0+000	6501	Medium trucks	-	8	4	2	40 none	-	-	Average (of DGAC and PCC)	0
0+000	6501	Heavy trucks	-	4	2	1	40 none	-	-	Average (of DGAC and PCC)	0
0+000	6501	Buses	-	4	2	1	40 none	-	-	Average (of DGAC and PCC)	0
0+000	6501	Motorcycles	-	4	2	1	40 none	-	-	Average (of DGAC and PCC)	0
0+000	6501	Auxiliary vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+423	-	-	-	-	-	-	-	-	-	-	-

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

Track Station km	Coordinates of track axis			Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level		
	X	Y	Z				day	Evening	night
Railroad	Rail track:			Section: 1	Km: 0+000				
Train type	Number of trains			Speed	Length per		Emission level		
	day	Evening	night	km/h	train	Max	day	Evening	night
					m		dB(A)	dB(A)	dB(A)
Coaster		16	4	6	64	175 yes		61.8	61.8 58.7
Amtrak		16	4	6	64	175 -		61.8	61.8 58.7
Freight		0	0	6	64	550 -	-	-	67
0+000	475030.4	3648552	-	-	-	-	-	64.8	64.8
2+875	475231.4	3645764	-	-	-	-	-	64.8	64.8

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

No.	Receiver name	Coordinates		Floor	Height m	Day	Level w/o NP		Lden
		X	Y				Evening	Night	
		in meter					dB(A)		
1	NC-1	475218.93	3647751.28	1.FI	1.5	62.6	61.2	62.8	69.4
2	NC-2	475227.93	3647818.55	1.FI	1.5	61.0	59.1	59.8	66.6
3	NC-3	475245.46	3647875.88	1.FI	1.5	61.3	58.9	58.0	65.2
4	NC-4	475196.19	3647861.19	1.FI	1.5	60.4	60.1	63.4	69.7
5	NC-5	475258.25	3647903.35	1.FI	1.5	61.0	58.5	57.1	64.5
6	NC-6	475278.15	3647934.62	1.FI	1.5	60.7	58.1	56.2	63.8
7	NC-7	475186.71	3647911.88	1.FI	1.5	60.1	59.9	63.4	69.6
8	NC-8	475199.98	3647960.20	1.FI	1.5	56.0	55.7	59.0	65.2
9	NC-9	475237.40	3648015.64	1.FI	1.5	52.2	51.4	54.2	60.5
10	NC-10	475302.31	3647964.94	1.FI	1.5	60.0	57.3	55.2	62.9
11	NC-11	475333.10	3647994.79	1.FI	1.5	59.1	56.4	54.1	61.9
12	NC-12	475355.37	3648018.95	1.FI	1.5	57.6	54.9	52.8	60.5
13	NC-13	475383.80	3648028.43	1.FI	1.5	60.6	57.8	54.8	62.9
14	NC-14	475286.68	3648047.38	1.FI	1.5	50.8	49.5	51.3	57.8
15	NC-15	475341.16	3648057.80	1.FI	1.5	52.1	49.9	50.0	56.9
16	NC-16	475335.00	3647942.68	1.FI	1.5	59.0	56.3	54.1	61.9
17	NC-17	475364.85	3647973.94	1.FI	1.5	60.7	58.0	55.1	63.1
18	NC-18	475403.22	3648002.84	1.FI	1.5	60.6	57.9	54.8	62.9
19	NC-19	475454.86	3648047.38	1.FI	1.5	59.7	56.9	53.8	61.9
20	NC-20	475443.02	3648034.59	1.FI	1.5	62.6	59.8	56.5	64.7
21	NC-21	475471.92	3648014.21	1.FI	1.5	56.1	53.4	50.8	58.7
22	NC-22	475476.18	3647994.79	1.FI	1.5	59.4	56.6	53.5	61.6
23	NC-23	475516.92	3647956.89	1.FI	1.5	55.4	52.7	50.1	58.0
24	NC-24	475543.93	3647926.09	1.FI	1.5	55.7	53.0	50.2	58.2
25	NC-25	475556.72	3647910.93	1.FI	1.5	55.5	52.8	50.0	58.0
26	PC-1	475410.07	3646120.65	1.FI	1.5	59.5	56.7	53.7	61.8
27	PC-2	475418.65	3646094.47	1.FI	1.5	59.4	56.7	53.7	61.7
28	PC-3	475445.43	3646134.95	1.FI	1.5	59.7	56.9	53.7	61.9
29	PC-4	475453.86	3646108.01	1.FI	1.5	59.8	57.0	53.9	62.0
30	PC-5	475462.89	3646079.27	1.FI	1.5	59.9	57.1	53.9	62.1
31	PC-6	475471.32	3646050.99	1.FI	1.5	60.0	57.2	54.0	62.2
32	PF-1	475362.10	3646275.37	1.FI	1.5	59.8	57.0	54.0	62.1
33	PF-2	475350.95	3646310.73	1.FI	1.5	59.7	57.0	54.0	62.1
34	PF-3	475337.69	3646353.40	1.FI	1.5	59.8	57.0	54.0	62.1
35	PF-4	475285.61	3646635.72	1.FI	1.5	59.7	57.0	54.0	62.1
36	PF-5	475107.06	3646831.56	1.FI	1.5	53.3	51.7	53.2	59.8
37	PF-6	475068.24	3646820.22	1.FI	1.5	53.7	52.6	55.0	61.4
38	PF-7	475048.45	3646866.15	1.FI	1.5	54.5	54.0	57.2	63.4
39	PF-8	475059.10	3648214.20	1.FI	1.5	57.2	57.2	60.7	66.9

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

Source name				Day	Level w/o NP		Lden		
					Evening	Night			
				dB(A)					
NC-1	1.FI	62.6	61.2	62.8	69.4	0.0	0.0	0.0	0.0
15th Street				9.1	6.2	2.6	11		
Camino Del Mar				33	30.1	26.5	34.9		
Jimmy Durante Boulevard				60.3	57.5	53.9	62.2		
Ocean Boulevard				14.1	11.3	7.7	16.1		
Railroad				58.7	58.7	62.3	68.4		
San Dieguito Drive				28.6	25.8	22.2	30.5		
NC-2	1.FI	61.0	59.1	59.8	66.6	0.0	0.0	0.0	0.0
15th Street				8.2	5.4	1.8	10.2		
Camino Del Mar				31.7	28.8	25.2	33.6		
Jimmy Durante Boulevard				59.7	56.9	53.2	61.6		
Ocean Boulevard				13.1	10.3	6.7	15.1		
Railroad				55.2	55.2	58.8	64.9		
San Dieguito Drive				29.9	27.1	23.5	31.8		
NC-3	1.FI	61.3	58.9	58.0	65.2	0.0	0.0	0.0	0.0
15th Street				7.7	4.9	1.3	9.7		
Camino Del Mar				30.7	27.8	24.2	32.6		
Jimmy Durante Boulevard				60.7	57.8	54.2	62.6		
Ocean Boulevard				12.3	9.5	5.9	14.2		
Railroad				52.1	52.1	55.6	61.8		
San Dieguito Drive				31.3	28.5	24.8	33.2		
NC-4	1.FI	60.4	60.1	63.5	69.7	0.0	0.0	0.0	0.0
15th Street				7.9	5	1.4	9.8		
Camino Del Mar				30.9	28	24.4	32.8		
Jimmy Durante Boulevard				51.4	48.6	44.9	53.3		
Ocean Boulevard				12.7	9.8	6.2	14.6		
Railroad				59.8	59.8	63.4	69.6		
San Dieguito Drive				29.3	26.5	22.9	31.2		
NC-5	1.FI	61.0	58.5	57.1	64.5	0.0	0.0	0.0	0.0
15th Street				7.5	4.6	1.1	9.4		
Camino Del Mar				30.2	27.4	23.7	32.1		
Jimmy Durante Boulevard				60.6	57.7	54.1	62.5		
Ocean Boulevard				12	9.1	5.5	13.9		
Railroad				50.6	50.6	54.1	60.3		
San Dieguito Drive				32.2	29.3	25.7	34.1		
NC-6	1.FI	60.7	58.1	56.2	63.8	0.0	0.0	0.0	0.0
15th Street				7.2	4.4	0.8	9.2		
Camino Del Mar				29.8	26.9	23.3	31.7		
Jimmy Durante Boulevard				60.4	57.5	53.9	62.3		
Ocean Boulevard				11.5	8.7	5.1	13.5		
Railroad				48.9	48.9	52.4	58.6		
San Dieguito Drive				33.5	30.7	27	35.4		
NC-7	1.FI	60.1	59.9	63.4	69.6	0.0	0.0	0.0	0.0
15th Street				7.5	4.6	1	9.4		
Camino Del Mar				30.1	27.2	23.6	32		
Jimmy Durante Boulevard				48.4	45.5	41.9	50.3		
Ocean Boulevard				12	9.2	5.6	14		
Railroad				59.8	59.8	63.3	69.5		
San Dieguito Drive				29.4	26.6	22.9	31.3		
NC-8	1.FI	56.0	55.7	59.0	65.2	0.0	0.0	0.0	0.0
15th Street				7.1	4.3	0.7	9		
Camino Del Mar				29.5	26.6	23	31.4		
Jimmy Durante Boulevard				47.4	44.5	40.9	49.3		

Contributions

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

Ocean Boulevard				11.5	8.6	5	13.4		
Railroad				55.4	55.4	58.9	65.1		
San Dieguito Drive				30.1	27.2	23.6	32		
NC-9 1.FI	52.2	51.5		54.2	60.5	0.0	0.0	0.0	0.0
15th Street				6.7	3.8	0.2	8.6		
Camino Del Mar				28.7	25.9	22.3	30.6		
Jimmy Durante Boulevard				47.1	44.2	40.6	49		
Ocean Boulevard				10.8	8	4.4	12.8		
Railroad				50.5	50.5	54	60.2		
San Dieguito Drive				31.6	28.8	25.2	33.6		
NC-10 1.FI	60.0	57.3		55.2	62.9	0.0	0.0	0.0	0.0
15th Street				7	4.1	0.6	8.9		
Camino Del Mar				29.3	26.5	22.9	31.2		
Jimmy Durante Boulevard				59.7	56.8	53.2	61.6		
Ocean Boulevard				11.2	8.3	4.7	13.1		
Railroad				47.3	47.3	50.8	57		
San Dieguito Drive				35.1	32.3	28.7	37		
NC-11 1.FI	59.1	56.4		54.1	61.9	0.0	0.0	0.0	0.0
15th Street				6.7	3.9	0.3	8.7		
Camino Del Mar				28.9	26.1	22.4	30.8		
Jimmy Durante Boulevard				58.9	56	52.4	60.8		
Ocean Boulevard				10.8	7.9	4.4	12.7		
Railroad				45.8	45.8	49.2	55.4		
San Dieguito Drive				37.4	34.6	30.9	39.3		
NC-12 1.FI	57.6	54.9		52.8	60.5	0.0	0.0	0.0	0.0
15th Street				6.5	3.7	0.1	8.5		
Camino Del Mar				28.6	25.8	22.1	30.5		
Jimmy Durante Boulevard				57.3	54.4	50.8	59.2		
Ocean Boulevard				10.5	7.7	4.1	12.4		
Railroad				44.8	44.8	48.3	54.5		
San Dieguito Drive				39.4	36.6	33	41.3		
NC-13 1.FI	60.6	57.8		54.8	62.9	0.0	0.0	0.0	0.0
15th Street				6.4	3.6	0	8.4		
Camino Del Mar				28.5	25.6	22	30.4		
Jimmy Durante Boulevard				60.4	57.6	53.9	62.3		
Ocean Boulevard				10.3	7.5	3.9	12.3		
Railroad				43.8	43.8	47.3	53.5		
San Dieguito Drive				43	40.1	36.5	44.9		
NC-14 1.FI	50.9	49.5		51.3	57.8	0.0	0.0	0.0	0.0
15th Street				6.4	3.6	0	8.3		
Camino Del Mar				28.4	25.6	21.9	30.3		
Jimmy Durante Boulevard				48.2	45.3	41.7	50.1		
Ocean Boulevard				10.5	7.6	4	12.4		
Railroad				47.3	47.3	50.8	57		
San Dieguito Drive				33.9	31.1	27.5	35.8		
NC-15 1.FI	52.1	50.0		50.0	57.0	0.0	0.0	0.0	0.0
15th Street				6.3	3.4	-0.1	8.2		
Camino Del Mar				28.2	25.4	21.8	30.1		
Jimmy Durante Boulevard				50.9	48.1	44.4	52.8		
Ocean Boulevard				10.2	7.4	3.8	12.1		
Railroad				45	45	48.5	54.7		
San Dieguito Drive				37.4	34.6	31	39.3		
NC-16 1.FI	59.0	56.3		54.1	61.9	0.0	0.0	0.0	0.0
15th Street				7.1	4.3	0.7	9		
Camino Del Mar				29.6	26.7	23.1	31.5		
Jimmy Durante Boulevard				58.7	55.9	52.2	60.6		

Contributions

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

Ocean Boulevard					11.3	8.4	4.8	13.2		
Railroad					46.1	46.1	49.5	55.7		
San Dieguito Drive					36.8	34	30.4	38.7		
NC-17	1.FI	60.7	58.0		55.1	63.1	0.0	0.0	0.0	0.0
15th Street					6.9	4	0.4	8.8		
Camino Del Mar					29.1	26.3	22.6	31		
Jimmy Durante Boulevard					60.6	57.7	54.1	62.5		
Ocean Boulevard					10.7	7.9	4.3	12.7		
Railroad					44.8	44.8	48.2	54.4		
San Dieguito Drive					39.7	36.9	33.2	41.6		
NC-18	1.FI	60.6	57.9		54.8	62.9	0.0	0.0	0.0	0.0
15th Street					6.6	3.7	0.1	8.5		
Camino Del Mar					28.7	25.9	22.2	30.6		
Jimmy Durante Boulevard					60.4	57.6	54	62.3		
Ocean Boulevard					10.5	7.6	4	12.4		
Railroad					43.4	43.4	46.9	53		
San Dieguito Drive					45.3	42.5	38.9	47.2		
NC-19	1.FI	59.7	56.9		53.8	62.0	0.0	0.0	0.0	0.0
15th Street					6.2	3.3	-0.2	8.1		
Camino Del Mar					28.1	25.3	21.7	30		
Jimmy Durante Boulevard					59.1	56.3	52.6	61		
Ocean Boulevard					10	7.1	3.6	11.9		
Railroad					41.9	41.9	45.3	51.5		
San Dieguito Drive					50.1	47.3	43.7	52		
NC-20	1.FI	62.6	59.8		56.5	64.7	0.0	0.0	0.0	0.0
15th Street					6.3	3.4	-0.1	8.2		
Camino Del Mar					28.3	25.4	21.8	30.2		
Jimmy Durante Boulevard					59	56.2	52.6	61		
Ocean Boulevard					10.1	7.3	3.7	12		
Railroad					42.2	42.2	45.7	51.9		
San Dieguito Drive					60	57.2	53.5	61.9		
NC-21	1.FI	56.1	53.4		50.8	58.7	0.0	0.0	0.0	0.0
15th Street					6.4	3.5	0	8.3		
Camino Del Mar					28.4	25.6	21.9	30.3		
Jimmy Durante Boulevard					52.2	49.3	45.7	54.1		
Ocean Boulevard					10.2	7.3	3.7	12.1		
Railroad					41.6	41.6	45.1	51.2		
San Dieguito Drive					53.6	50.8	47.1	55.5		
NC-22	1.FI	59.4	56.6		53.5	61.6	0.0	0.0	0.0	0.0
15th Street					6.5	3.7	0.1	8.4		
Camino Del Mar					28.6	25.7	22.1	30.5		
Jimmy Durante Boulevard					50.2	47.3	43.7	52.1		
Ocean Boulevard					10.3	7.4	3.8	12.2		
Railroad					41.6	41.6	45	51.2		
San Dieguito Drive					58.7	55.9	52.3	60.6		
NC-23	1.FI	55.4	52.7		50.1	58.0	0.0	0.0	0.0	0.0
15th Street					6.7	3.8	0.2	8.6		
Camino Del Mar					28.8	26	22.4	30.7		
Jimmy Durante Boulevard					46.1	43.2	39.6	48		
Ocean Boulevard					10.4	7.6	4	12.3		
Railroad					40.8	40.8	44.2	50.4		
San Dieguito Drive					54.7	51.8	48.2	56.6		
NC-24	1.FI	55.7	53.0		50.2	58.2	0.0	0.0	0.0	0.0
15th Street					6.8	4	0.4	8.7		
Camino Del Mar					29.1	26.2	22.6	31		
Jimmy Durante Boulevard					44.1	41.2	37.6	46		

Contributions

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

Ocean Boulevard				10.5	7.7	4.1	12.5		
Railroad				40.3	40.3	43.8	49.9		
San Dieguito Drive				55.2	52.4	48.8	57.1		
NC-25 1.FI	55.5	52.8		50.0	58.0	0.0	0.0	0.0	0.0
15th Street				6.9	4	0.5	8.8		
Camino Del Mar				29.2	26.3	22.7	31.1		
Jimmy Durante Boulevard				43.3	40.4	36.8	45.2		
Ocean Boulevard				10.6	7.7	4.2	12.5		
Railroad				40.1	40.1	43.5	49.7		
San Dieguito Drive				55.1	52.3	48.6	57		
PC-1 1.FI	59.5	56.7		53.8	61.8	0.0	0.0	0.0	0.0
15th Street				11.7	8.8	5.2	13.6		
Camino Del Mar				59.4	56.5	52.9	61.3		
Jimmy Durante Boulevard				23.1	20.2	16.6	25		
Ocean Boulevard				12.3	9.4	5.8	14.2		
Railroad				42.9	42.9	46.4	52.6		
San Dieguito Drive				11.7	8.8	5.2	13.6		
PC-2 1.FI	59.4	56.7		53.8	61.8	0.0	0.0	0.0	0.0
15th Street				11.2	8.4	4.8	13.2		
Camino Del Mar				59.3	56.5	52.9	61.3		
Jimmy Durante Boulevard				22.9	20.1	16.5	24.9		
Ocean Boulevard				11.9	9.1	5.5	13.9		
Railroad				42.9	42.9	46.4	52.6		
San Dieguito Drive				11.5	8.7	5.1	13.4		
PC-3 1.FI	59.7	56.9		53.8	61.9	0.0	0.0	0.0	0.0
15th Street				11.7	8.8	5.2	13.6		
Camino Del Mar				59.6	56.8	53.1	61.5		
Jimmy Durante Boulevard				23.1	20.3	16.7	25		
Ocean Boulevard				12.2	9.4	5.8	14.1		
Railroad				42.1	42.1	45.6	51.8		
San Dieguito Drive				11.8	8.9	5.3	13.7		
PC-4 1.FI	59.9	57.1		54.0	62.1	0.0	0.0	0.0	0.0
15th Street				11.2	8.3	4.8	13.1		
Camino Del Mar				59.8	56.9	53.3	61.7		
Jimmy Durante Boulevard				23	20.2	16.5	24.9		
Ocean Boulevard				11.9	9	5.5	13.8		
Railroad				42.1	42.1	45.6	51.7		
San Dieguito Drive				11.6	8.8	5.1	13.5		
PC-5 1.FI	59.9	57.1		54.0	62.2	0.0	0.0	0.0	0.0
15th Street				10.7	7.9	4.3	12.7		
Camino Del Mar				59.9	57	53.4	61.8		
Jimmy Durante Boulevard				22.9	20	16.4	24.8		
Ocean Boulevard				11.6	8.7	5.1	13.5		
Railroad				42.1	42.1	45.6	51.7		
San Dieguito Drive				11.5	8.6	5	13.4		
PC-6 1.FI	60.1	57.3		54.2	62.3	0.0	0.0	0.0	0.0
15th Street				10.3	7.5	3.9	12.2		
Camino Del Mar				60	57.2	53.5	61.9		
Jimmy Durante Boulevard				22.7	19.9	16.3	24.6		
Ocean Boulevard				11.2	8.4	4.8	13.2		
Railroad				42.1	42.1	45.6	51.8		
San Dieguito Drive				11.3	8.5	4.9	13.3		
PF-1 1.FI	59.8	57.0		54.1	62.1	0.0	0.0	0.0	0.0
15th Street				14.6	11.8	8.2	16.5		
Camino Del Mar				59.7	56.9	53.2	61.6		
Jimmy Durante Boulevard				23.9	21	17.4	25.8		

Contributions

9348 Del Mar Zoning Amendments
SoundPLAN - Vehicle and Rail Traffic

Ocean Boulevard				14.6	11.8	8.2	16.6		
Railroad				43	43	46.5	52.7		
San Dieguito Drive				12.4	9.6	6	14.3		
PF-2 1.FI 59.8	57.0			54.0	62.1	0.0	0.0	0.0	0.0
15th Street				15.4	12.6	9	17.3		
Camino Del Mar				59.7	56.8	53.2	61.6		
Jimmy Durante Boulevard				24	21.2	17.6	25.9		
Ocean Boulevard				15.3	12.4	8.8	17.2		
Railroad				43	43	46.5	52.7		
San Dieguito Drive				12.6	9.8	6.1	14.5		
PF-3 1.FI 59.8	57.0			54.1	62.1	0.0	0.0	0.0	0.0
15th Street				16.4	13.6	10	18.3		
Camino Del Mar				59.7	56.8	53.2	61.6		
Jimmy Durante Boulevard				24.3	21.4	17.8	26.2		
Ocean Boulevard				16.1	13.2	9.6	18		
Railroad				43.1	43.1	46.6	52.8		
San Dieguito Drive				12.8	10	6.4	14.7		
PF-4 1.FI 59.7	57.0			54.0	62.1	0.0	0.0	0.0	0.0
15th Street				25.6	22.8	19.2	27.5		
Camino Del Mar				59.6	56.8	53.1	61.5		
Jimmy Durante Boulevard				26.1	23.3	19.6	28		
Ocean Boulevard				22.3	19.4	15.8	24.2		
Railroad				43.1	43.1	46.7	52.8		
San Dieguito Drive				14.5	11.7	8	16.4		
PF-5 1.FI 53.3	51.7			53.2	59.8	0.0	0.0	0.0	0.0
15th Street				48.4	45.6	42	50.4		
Camino Del Mar				47.8	45	41.3	49.7		
Jimmy Durante Boulevard				27.9	25.1	21.5	29.8		
Ocean Boulevard				36	33.1	29.5	37.9		
Railroad				48.9	48.9	52.5	58.7		
San Dieguito Drive				15.4	12.6	8.9	17.3		
PF-6 1.FI 53.7	52.6			55.0	61.4	0.0	0.0	0.0	0.0
15th Street				47.8	44.9	41.4	49.7		
Camino Del Mar				45.3	42.4	38.8	47.2		
Jimmy Durante Boulevard				27.7	24.8	21.2	29.6		
Ocean Boulevard				41.1	38.2	34.6	43		
Railroad				51.1	51.1	54.7	60.9		
San Dieguito Drive				15.2	12.4	8.7	17.1		
PF-7 1.FI 54.5	54.0			57.2	63.5	0.0	0.0	0.0	0.0
15th Street				37.9	35.1	31.5	39.9		
Camino Del Mar				44.5	41.6	38	46.4		
Jimmy Durante Boulevard				28.1	25.3	21.7	30		
Ocean Boulevard				43.2	40.3	36.8	45.1		
Railroad				53.5	53.5	57.1	63.3		
San Dieguito Drive				15.4	12.6	9	17.3		
PF-8 1.FI 57.2	57.2			60.7	66.9	0.0	0.0	0.0	0.0
15th Street				5.4	2.5	-1	7.3		
Camino Del Mar				26.8	23.9	20.3	28.7		
Jimmy Durante Boulevard				36.2	33.4	29.7	38.1		
Ocean Boulevard				9.5	6.6	3.1	11.4		
Railroad				57.1	57.1	60.7	66.9		
San Dieguito Drive				23.7	20.9	17.3	25.6		

Contributions