

April 28, 2021

ZEP-10

Michael Grehl, Vice President – Real Estate
N4FL Worldwide
6006 El Tordo, 1st Floor
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Subject: Ocean KAMP Project – Traffic Noise Impacts Analysis

Dear Mr. Grehl:

HELIX Environmental Planning, Inc. (HELIX) has performed an analysis of traffic noise impacts for the proposed Ocean KAMP Project (project). This letter summarizes the methodology and results of the noise analysis.

PROJECT LOCATION

The project site encompasses approximately 92 acres located at 3480 Mission Avenue, Oceanside, CA 92054, in San Diego County. The project is located north of Mission Avenue and State Route 76 (SR 76), immediately east of Foussat Road and west of Fireside Street (see Figure 1, *Regional Location*, and Figure 2, *Project Vicinity*). The project site includes 15 parcels, comprised of Assessors' Parcel Numbers (APNs) 160-270-31, -79, and -82; 160-280-14, -48, -49, -50, -51, -53, -54, and -55; 160-290-58, -60, -63; and 160-270-77 (a parcel located at the northeastern corner of Foussat Road and SR 76 that is currently owned by the City of Oceanside [City]). A San Diego Gas & Electric (SDG&E) transmission line easement traverses the center of the site in a north-south direction. The site has previously been used as a drive-in movie theater and swap meet.

PROJECT DESCRIPTION

The project Applicant proposes to construct the project at the former Oceanside swap meet site located at 3480 Mission Avenue, Oceanside, CA 92054. The project site encompasses approximately 92 acres plus a City parcel for a total of approximately 94 acres. The project site is currently zoned as Community Commercial with a Community Commercial General Plan Land Use Designation. Mixed-use development is allowed under the current Community Commercial zoning, subject to approval of a Mixed-Use Development Plan and Conditional Use Permit. The project proposes approximately 36 acres of commercial uses within the central/southwestern portion of the site and approximately 36 acres of

residential uses within the northern and eastern portions of the site (see Figure 3, *Draft Mixed Use Development Plan*). The remaining 20 acres of the site are proposed to be preserved as open space, including a 4-acre stepping-stone wildlife corridor located along the eastern property boundary.

The proposed Mixed-Use Development Plan would be an integrated plan, where uses would be sited to share parking, traffic circulation and an alternative transportation system, recreational and open space areas, and utilities and infrastructure. The proposed project site would be developed in two integrated areas – a resort community and a residential area. Commercial uses within the resort community component are proposed to include a 300-room resort hotel, a conference facility, a surf lagoon beach club, and 11 commercial buildings consisting of approximately 126,400 square feet (SF) of office, retail, restaurants, and fitness uses. Total developed area would constitute approximately 486,100 SF. Approximately 1,050 parking spaces are proposed to accommodate the commercial uses, in addition to 106 short- and long-term bicycle parking spaces within the commercial area, including 14 long-term spaces for the hotel. The residential uses are proposed to include approximately 700 dwelling units within nine residential lots.

The project would be designed consistent with the Zoning Ordinance and consistent with the General Plan Housing Element and Land Use Element. The project proposes a reduced density of commercial uses compared to the 950,000 SF of commercial uses proposed under the approved Pavilion at Oceanside project. The proposed commercial uses would be designed to be consistent with the development regulations of the Community Commercial zoning, including standards related to building coverage, landscaping, parking, and setbacks. The mixed-use development would also include residential uses located adjacent to the existing residential areas to the east and north of the project site. Establishment of appropriate setbacks and consistency with the development standards presented in the Mixed-Use Development Plan prepared for the project would ensure that the proposed residential uses would be compatible with existing surrounding development and City standards.

The site is currently being graded in compliance with the prior approval and pursuant to required conditions of the previously approved Pavilion at Oceanside project (the 88.3-acre Reduced Project/ Draft Subarea Plan Alternative). Applicable mitigation measures have been/are being completed pursuant to the Mitigation Monitoring and Reporting Program prepared for that project. Approximately 300,000 cubic yards of fill are planned to be imported to support project uses. Construction of the residential component will be subject to market conditions and would require the review and approval of subsequent land use applications as required for each specific development proposal.

NOISE TERMINOLOGY AND METRICS

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ} , with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This is similar to the Day Night sound level (L_{DN}), which is a 24-hour average with an added 10 dBA weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on dBA. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA units. The threshold of hearing for the human ear is approximately 0 dBA, which corresponds to 20 micro Pascals (mPa).

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

EXISTING CONDITIONS

Surrounding Land Uses

The project site is bordered by the San Luis Rey River to the north and northwest, the Oceanside Municipal Airport to the west, Oceanside Fire Department Station No. 7 to the south (between SR 76 and Mission Avenue), the City's Mission Basin Groundwater Purification Facility to the northeast, and a combination of single-family residential and commercial development and open space to the east and south. Surrounding zoning designations include Open Space (OS) to the north and northwest, Limited Industrial (IL) to the west, General Commercial (CG) and Limited Commercial (CL) to the south across SR 76, General Commercial (GC) and Single Family Residential (RS) to the east, and Public and Semipublic (PS) to the northeast. Surrounding land use designations include Open Space (OS) to the north and northwest, Light Industrial (LI) to the west, Community Commercial (CC) and General Commercial (GC) to the south across SR 76, General Commercial (GC) and Single Family Detached Residential (SFD-R) to the east, and Public and Civic Institutional (CI) to the northeast.

Existing Noise Sensitive Land Uses

Noise sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise and generally include residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. Existing NSLUs in the project vicinity include single-family residences east and northwest of the project site.

Noise receivers are specific locations where noise-sensitive individuals could be exposed to excessive noise levels.

EXISTING NOISE SETTING

The existing noise environment is dominated by traffic noise from roadways adjacent to the project site, including Mission Avenue and SR 76. While not as heavily used, Foussat Road and Fireside Street also generate traffic noise at the site. Additional noise sources include aircraft noise associated with operation of the Oceanside Municipal Airport, which is located approximately 0.5 mile west of the project site.

Two measurements were taken near the project site for the ambient noise survey. The first measurement (M1) was recorded at the southern edge of the project site approximately 50 feet from the Mission Avenue median and approximately 400 feet northeast of the SDG&E transmission line easement. The second measurement (M2) was taken at the southern edge of the project site approximately 50 feet from the Mission Avenue median and approximately 350 feet southwest of Fireside Drive. A traffic count was conducted at both locations to estimate the distribution of heavy trucks (three or more axles), medium trucks (double tires/two axles), and automobiles. The measured noise levels are shown in Table 1, *Noise Measurement Results*. Traffic counts for the timed measurements and the one-hour equivalent volume are shown in Table 2, *Recorded Traffic Volume and Vehicle Mix*. The full site visit sheets are provided as Attachment A, *Site Survey Measurement Sheets*. Measurement locations are shown on Figure 2.

Table 1
NOISE MEASUREMENT RESULTS

Measurement 1 - Traffic	
Date:	February 28, 2020
Conditions:	Temperature: 82°F. Wind Speed: 6 mph. 14% humidity. Sunny.
Time:	11:03 a.m. – 11:18 a.m.
Location:	Southern edge of project site; 50 feet from Mission Avenue median; 400 feet northeast of SDG&E transmission line; 750 feet southwest of Fireside Street.
Measured Noise Level:	72.5 dBA _{LEQ}
Notes:	Road traffic noise on Mission Avenue.
Measurement 2 - Traffic	
Date:	February 28, 2020
Conditions:	Temperature: 82°F. Wind Speed: 6 mph. 14% humidity. Sunny.
Time:	11:22 a.m. – 11:37 a.m.
Location:	Southern edge of project site; 50 feet from Mission Avenue median; 350 feet southwest of Fireside Drive.
Measured Noise Level:	71.9 dBA _{LEQ}
Notes:	Road traffic noise on Mission Avenue.

Table 2
RECORDED TRAFFIC VOLUME AND VEHICLE MIX

Measurement	Roadway	Traffic	Autos	MT ¹	HT ²
M1	Mission Avenue	15-minute count	220	6	1
		One-hour equivalent	880	24	4
		Percent	97%	2.6%	0.4%
M2	Mission Avenue	15-minute count	190	4	0
		One-hour equivalent	760	16	0
		Percent	98%	2%	0%

¹ Medium Trucks (double tires/two axles)

² Heavy Trucks (three or more axles)

REGULATORY FRAMEWORK

California Noise Control Act

The California Noise Control Act is a section within the California Health and Safety Code that describes excessive noise as a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Noise Insulation Standards

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{DN}) of at least 45.

California Noise Element Guidelines

The California Department of Health Services (DHS), Office of Noise Control, has published recommended guidelines for noise and land use compatibility. DHS does not mandate application of the compatibility guidelines to development projects; however, jurisdictions are required to consider the guidelines when developing their general plan noise elements and when determining acceptable noise levels within their communities. For single-family residential land uses and multi-family residential land uses, noise levels up to 60 CNEL and 65 CNEL, respectively, are considered “normally acceptable.”

City of Oceanside Municipal Code

Chapter 38 (Noise Control) of the City’s Municipal Code states that except for exempted activities and sounds as provided in the chapter or exempted properties, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property in the applicable base district zone on which the sound is

produced, exceeds the applicable limits set forth below (provided as Table 3, *Noise Ordinance Sound Level Limits [dBA]*).

Table 3
NOISE ORDINANCE SOUND LEVEL LIMITS (dBA)

Base District Zone	7:00 a.m. to 9:59 p.m.	10:00 p.m. to 6:59 a.m.
(1) Residential Districts:		
RE (Residential Estate)	50	45
RS (Single-Family)	50	45
RM (Medium Density)	50	45
RH (High Density)	55	50
RT (Residential Tourist)	55	50
(2) C (Commercial)	65	60
(3) I (Industrial)	70	65
(4) D (Downtown)	65	55
(5) A (Agricultural)	50	45
(6) OS (Open Space)	50	45

Source: City of Oceanside Municipal Code, Chapter 38
dBA = A-weighted decibel

City of Oceanside General Plan Noise Element

The City's General Plan Noise Element identifies that since noise, especially noise from transportation sources, has a definite effect on the human living environment, the Noise Element must be used for guidance when considering future land use designations or changes along major travel routes. The noise Element provides recommendations to abate or reduce undesirable noise. The following recommendation (Recommendation 5 in the Noise Element) is relevant to the analysis presented in this letter and states the following:

"Land uses in the City of Oceanside should be planned in order to [e]nsure that residential areas will not be impacted by noise. Approval of any project in the City where the health of future residents or occupants may be adversely affected by noise associated with the site should be taken to reduce or abate the noise effects or should be denied approval and recommended for an alternate site (example – a new rest home or hospital should not be constructed in areas subjected to noise levels 65 dBA or higher)."

TRAFFIC NOISE ANALYSIS METHODOLOGY AND ASSUMPTIONS

Noise Monitoring Equipment

The following equipment was used to measure existing noise levels at the project site:

- Larson Davis System LxT Integrating Sound Level Meters
- Larson Davis Model CAL150 Calibrator
- Windscreen and tripod for the sound level meter

The sound level meter was field-calibrated immediately prior to the noise measurements to ensure accuracy. All measurements were made with a meter that conforms to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI S1.4-1983 R2001). All instruments were maintained with National Bureau of Standards traceable calibration per the manufacturers' standards.

Noise Modeling Software

Modeling of the exterior noise environment for this report was accomplished using two computer noise models: Computer Aided Noise Abatement (CadnaA) version 2019 and Traffic Noise Model (TNM) version 2.5. CadnaA is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project related information, such as noise source data, barriers, structures, and topography to create a detailed CadnaA model, and uses the most up-to-date calculation standards to predict outdoor noise impacts. CadnaA traffic noise prediction is based on the data and methodology used in the TNM.

TNM was released in February 2004 by the U.S. Department of Transportation (USDOT) and calculates the daytime average hourly L_{EQ} from three-dimensional model inputs and traffic data (California Department of Transportation [Caltrans] 2004). TNM was developed from Computer Aided Design (CAD) plans provided by the project applicant. Input variables included road alignment, elevation, lane configuration, area topography, existing and planned noise control features, projected traffic volumes, estimated truck composition percentages, and vehicle speeds.

Peak-hour traffic volumes are estimated based on the assumption that approximately 10 percent of the average daily traffic would occur during a peak hour. The one-hour L_{EQ} noise level is calculated utilizing peak-hour traffic. Peak hour L_{EQ} can be converted to CNEL using the following equation, where $L_{EQ}(h)_{pk}$ is the peak hour L_{EQ} , P is the peak hour volume percentage of the average daily trips (ADT), d and e are divisions of the daytime fraction of ADT to account for daytime and evening hours, and N is the nighttime fraction of ADT:

$$CNEL = L_{EQ}(h)_{pk} + 10\log_{10} 4.17/P + 10\log_{10}(d + 4.77e + 10N)$$

The model-calculated one-hour L_{EQ} noise output is therefore approximately equal to the CNEL (Caltrans 2013).

Vehicular Traffic Volumes

Existing and existing plus project traffic volumes used for the project's off-site traffic noise impact analysis are provided in the Local Transportation Study prepared for the project (Linscott, Law & Greenspan Engineers [LLG] 2021). Table 4, *Existing and Existing Plus Project Traffic Volumes*, shows the average daily traffic (ADT) volumes for the existing and existing plus project scenarios for the street segments in the vicinity of the project site that would accommodate project traffic and along which NSLUs are located.

Table 4
EXISTING AND EXISTING PLUS PROJECT TRAFFIC VOLUMES

Roadway Segment	Average Daily Traffic (ADT) Volumes	
	Existing	Existing Plus Project
SR 76		
I-5 Ramps to Loretta Street	52,020	56,400
Loretta Street to Canyon Drive	45,900	50,470
Canyon Drive to Benet Road	47,430	52,570
Foussat Road to Douglas Drive	48,450	50,160
Rancho Del Oro Drive to Old Grove Road	37,230	38,560
Canyon Drive		
SR 76 to Mission Avenue	4,240	4,810
Mission Avenue		
Canyon Drive to Airport Road	23,250	26,300
Airport Road to Roymar Road	21,750	24,610
Roymar Road to Foussat Road	22,850	25,710
Copperwood Way to Frontier Drive	22,840	25,320
Frontier Drive to Ocean Pointe Road	23,690	26,360
Ocean Pointe Road to Fireside Street	23,690	29,590
El Camino Real to Douglas Drive	17,820	21,250
Douglas Drive to Rancho Del Oro Drive	20,090	22,760
Foussat Road		
Mission Avenue to Tonopath Street	5,580	7,480
Tonopath Street to Mesa Drive	6,810	8,710
El Camino Real		
Los Arbolitos Boulevard to Mission Avenue	25,070	26,020
Mission Avenue to Vista Oceana	24,970	26,300
Vista Oceana to Mesa Drive	25,430	26,570
Rancho Del Oro Drive		
SR 76 to Via Rancho Road	18,520	20,800
Via Rancho Road to Mesa Drive	18,010	19,910
Mesa Drive		
Mission Avenue to Barnwell Street	5,710	5,900
Barnwell Street to Foussat Road	5,060	5,440
Foussat Road to El Camino Real	5,770	6,720
El Camino Real to Rancho Del Oro Drive	17,120	18,070
Los Arbolitos Boulevard		
Pala Road to El Camino Real	6,240	6,620

Source: LLG 2021

Long-term (Year 2035) traffic volumes used in the project's on-site traffic noise exposure impact analysis are provided by the San Diego Association of Government's (SANDAG's) Transportation Forecast Information Center (TFIC) Series 14 forecast (SANDAG 2021). The following traffic volumes from SANDAG TFIC Series 14 were used:

- 31,800 ADT for SR 76 from Foussat Road to Douglas Drive
- 14,100 ADT for Mission Avenue west of Fireside Street

A typical traffic distribution of 97.5 percent automobiles, 2 percent medium trucks, and 0.5 percent heavy trucks was used in this analysis for existing, existing plus project, and future traffic.

TRAFFIC NOISE IMPACT SIGNIFICANCE CRITERIA

For off-site traffic-related noise, impacts would be considered significant in areas where existing traffic noise levels exceed 60 CNEL at single-family residential uses or 65 CNEL at multi-family residential uses, and implementation of the project would result in an increase of the noise level by 3 CNEL or more at a NSLU.

For on-site traffic-related noise, the City's General Plan Noise Element does not provide specific exterior or interior noise level limits for new developments; however, it does provide the recommendation that land uses in the City be planned in order to ensure that residential areas will not be impacted by noise and that projects should be approved only if the noise impacts can be reduced or abated. Since the City does not provide specific noise standards for the exterior or interior of multi-family residential uses, the "normally acceptable" exterior noise level standard of 65 CNEL from the State's compatibility guidelines and the interior noise level standard of 45 CNEL from Title 24, Part 2 of the California Code of Regulations are utilized in this analysis to assess impacts to the project's proposed residential uses.

TRAFFIC NOISE IMPACT ANALYSIS

Off-site Traffic Noise Generation

The project would generate vehicular traffic along roadways in the vicinity of the project site that would have the potential to result in increased noise levels at existing residential NSLUs. The project's off-site traffic noise impacts to existing residential NSLUs were determined by using TNM to estimate noise levels under both the existing and existing plus project conditions. As noted above, existing and existing plus project traffic noise levels are based on traffic volumes provided by LLG (2021), which are presented in Table 4. The off-site roadway modeling represents a conservative analysis that does not consider topography or attenuation provided by existing structures. The results of this analysis for the CNEL at the nearest NSLUs to the roadway centerlines are shown in Table 5, *Off-site Traffic Noise Levels*.

Table 5
OFF-SITE TRAFFIC NOISE LEVELS

Roadway Segment	Distance to Nearest NSLU (feet)	CNEL at Distance to Nearest NSLU			Direct Impact ¹
		Existing	Existing Plus Project	Change from Existing	
SR 76					
I-5 Ramps to Loretta Street	320	68.7	69.0	+0.3	No
Loretta Street to Canyon Drive	160	71.8	72.2	+0.4	No
Canyon Drive to Benet Road	300	68.6	69.1	+0.5	No
Foussat Road to Douglas Drive	90	74.7	74.8	+0.1	No
Rancho Del Oro Drive to Old Grove Road	100	73.0	73.2	+0.2	No
Canyon Drive					
SR 76 to Mission Avenue	70	62.6	63.1	+0.5	No
Mission Avenue					
Canyon Drive to Airport Road	60	69.2	69.7	+0.5	No
Airport Road to Roymar Road	60	70.3	70.9	+0.6	No
Roymar Road to Foussat Road	60	70.6	71.1	+0.5	No
Copperwood Way to Frontier Drive	100	68.3	68.7	+0.4	No
Frontier Drive to Ocean Pointe Road	170	66.1	66.5	+0.4	No
Ocean Pointe Road to Fireside Street	140	67.0	68.0	+1.0	No
El Camino Real to Douglas Drive	60	69.5	70.3	+0.8	No
Douglas Drive to Rancho Del Oro Drive	60	70.0	70.5	+0.5	No
Foussat Road					
Mission Avenue to Tonopath Street	30	62.8	64.1	+1.3	No
Tonopath Street to Mesa Drive	30	63.6	64.7	+1.1	No
El Camino Real					
Los Arbolitos Boulevard to Mission Avenue	40	71.3	71.5	+0.2	No
Mission Avenue to Vista Oceana	80	69.7	69.9	+0.2	No
Vista Oceana to Mesa Drive	90	69.3	69.5	+0.2	No
Rancho Del Oro Drive					
SR 76 to Via Rancho Road	50	70.4	70.9	+0.5	No
Via Rancho Road to Mesa Drive	70	68.9	69.3	+0.4	No
Mesa Drive					
Mission Avenue to Barnwell Street	30	67.7	67.8	+0.1	No
Barnwell Street to Foussat Road	40	65.9	66.2	+0.3	No
Foussat Road to El Camino Real	40	66.4	67.1	+0.7	No
El Camino Real to Rancho Del Oro Drive	70	68.7	68.9	+0.2	No
Los Arbolitos Boulevard					
Pala Road to El Camino Real	40	62.0	62.2	+0.2	No

¹ A direct impact to off-site uses would occur if existing noise levels exceed 65 CNEL at single family residences and the project more than doubles (increases by more than 3 CNEL) the existing noise level.

NSLU = noise sensitive land use; CNEL = Community Noise Equivalent Level

Impacts would be significant in areas where traffic noise at single-family residential uses exceeds 60 CNEL or traffic noise at multi-family residential uses exceeds 65 CNEL and implementation of the project results in a significant increase in noise levels, which is considered greater than a perceptible change of 3 CNEL over existing conditions. As shown in Table 5, while noise levels at NSLUs along

numerous analyzed roadway segments are estimated to exceed 60 and 65 CNEL, the project would not result an increase of 3 CNEL or more along any of the analyzed segments. The maximum increase in noise levels is calculated at 1.3 CNEL at NSLUs along the segment of Foussat Road between Mission Avenue and Tonopah Street. Therefore, project-generated off-site traffic impacts would be less than significant.

On-site Traffic Noise Exposure

Exterior Noise Levels

Future on-site residential land uses would be exposed to noise generated by vehicular traffic along SR 76 and Mission Avenue. Noise levels at the proposed residences at the southern portion of the site closest to Mission Avenue and SR 76 were estimated by modeling a scenario that included the future (Year 2035) traffic volumes specified above. Impacts related to exterior noise would be significant if future residential exterior use areas are exposed to noise levels in excess of 65 CNEL. In the CadnaA noise model, receivers were placed at anticipated approximate exterior use area locations, based on preliminary conceptual site plans, of residential properties planned along the southern boundary of the site. Noise levels are estimated to range between 65 and 67 CNEL at exterior use area locations of residences located along the southern boundary of the project site west of the intersection of Mission Avenue and Ocean Pointe Drive. As such, exterior noise levels at these locations are anticipated to exceed the 65-CNEL limit under future traffic conditions, and impacts associated exposure to excessive exterior noise levels would be potentially significant.

Mitigation measure NOI-1 would reduce noise impacts to private residential exterior use areas to a less-than-significant level.

NOI-1 Exterior Use Area Noise Compliance. Noise levels at private residential exterior use areas shall be reduced to 65 CNEL or below. Once specific building plan information is available, additional exterior noise analysis shall be conducted for proposed residential exterior use areas that are expected to be exposed to a noise level of 65 CNEL or greater. Residences requiring analysis are those along the southern boundary of the project site west of the intersection of Mission Avenue and Ocean Pointe Drive. The analysis shall determine the specific barrier heights and locations required to reduce exterior use area noise levels to below 65 CNEL.

The noise barriers must be solid. They can be constructed of masonry, wood, plastic, fiberglass, steel, or a combination of those materials, as long as there are no cracks or gaps, through or below the walls. The walls can be made of composite wood with a solid lower section with a clear glass or plastic upper section to maintain views. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove and must be at least one-inch total thickness or have a density of at least 3.5 pounds per square foot. Where architectural or aesthetic factors allow, glass or clear plastic 3/8 of an inch thick or thicker may be used on the upper portion, if it is desirable to preserve a view. Sheet metal of 18-gauge (minimum) may be used if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Any door(s) or gate(s) must be designed with overlapping closures on the bottom and sides and meet the minimum specifications of the wall materials described above. The gate(s) may be of one-inch thick or better wood, solid-sheet

metal of at least 18-gauge metal, or an exterior-grade solid-core steel door with prefabricated doorjamb.

Interior Noise Levels

Traditional architectural materials are conservatively estimated to attenuate noise levels by 15 CNEL; therefore, if exterior noise levels at building façades exceed 60 CNEL, interior noise levels may exceed the Title 24 45-CNEL limit for multi-family residential uses. In the noise model, receivers were placed at first-, second-, and third-story heights in anticipated approximate residential façade locations, based on preliminary conceptual site plans, of residences planned along the southern boundary of the project site, which are the façades anticipated to be exposed to the highest traffic noise levels. Modeled exterior façade noise levels at these locations exceed 60 CNEL, with the highest noise level estimated at 67.9 CNEL at the third-story height of residences located near where SR 76 crosses Mission Avenue. As such, interior noise levels for residences located along the southern boundary of the project site have the potential to exceed the 45-CNEL limit under future traffic conditions, and impacts associated with exposure to excessive interior noise levels would be potentially significant.

Mitigation measure NOI-2 would reduce noise impacts to private residential interior use areas to a less-than-significant level.

NOI-2 Exterior-to-Interior Analysis. Interior noise levels for the project's proposed residences shall be demonstrated to not exceed 45 CNEL. Once specific building plan information is available, additional exterior-to-interior noise analysis shall be conducted for all proposed residences that are exposed to an exterior noise level of 60 CNEL or greater. Residences requiring analysis are those along the southern boundary of the project site along Mission Avenue.

The information in the analysis shall include wall heights and lengths, room volumes, window and door tables typical for a building plan, as well as information on any other openings in the building shell. With this specific building plan information, the analysis shall determine the predicted interior noise levels at the planned on-site residences. If predicted noise levels are found to be in excess of 45 CNEL, the report shall identify architectural materials or techniques that could be included to reduce noise levels to 45 CNEL in habitable rooms.

Air conditioning or mechanical ventilation systems shall be installed to allow windows and doors to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system would meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

CONCLUSION

Project-generated traffic would not result in a significant increase in noise levels at existing off-site residential NSLUs located along roadways in the vicinity of the project site. Exterior use areas of the project's proposed on-site residences along the southern boundary of the site west of the intersection of Mission Avenue and Ocean Pointe Drive are anticipated to be exposed to noise levels from traffic in excess of the 65-CNEL limit. Mitigation measure NOI-1 would ensure exterior use area noise levels are reduced to comply with the 65-CNEL limit. Similarly, interior use areas of the project's proposed on-site residences along the southern boundary of the site have the potential to be exposed to noise levels in

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excess of the 45-CNEL limit. Mitigation measure NOI-2 would ensure interior use area noise levels are reduced to comply with the 45-CNEL limit.

Sincerely,



Hunter Stapp
Noise Analyst



Joanne M. Dramko, AICP
Principal Noise Specialist

Attachments:

- Figure 1: Regional Location
- Figure 2: Project Vicinity
- Figure 3: Draft Mixed Use Development Plan
- Attachment A: Site Survey Measurement Sheets

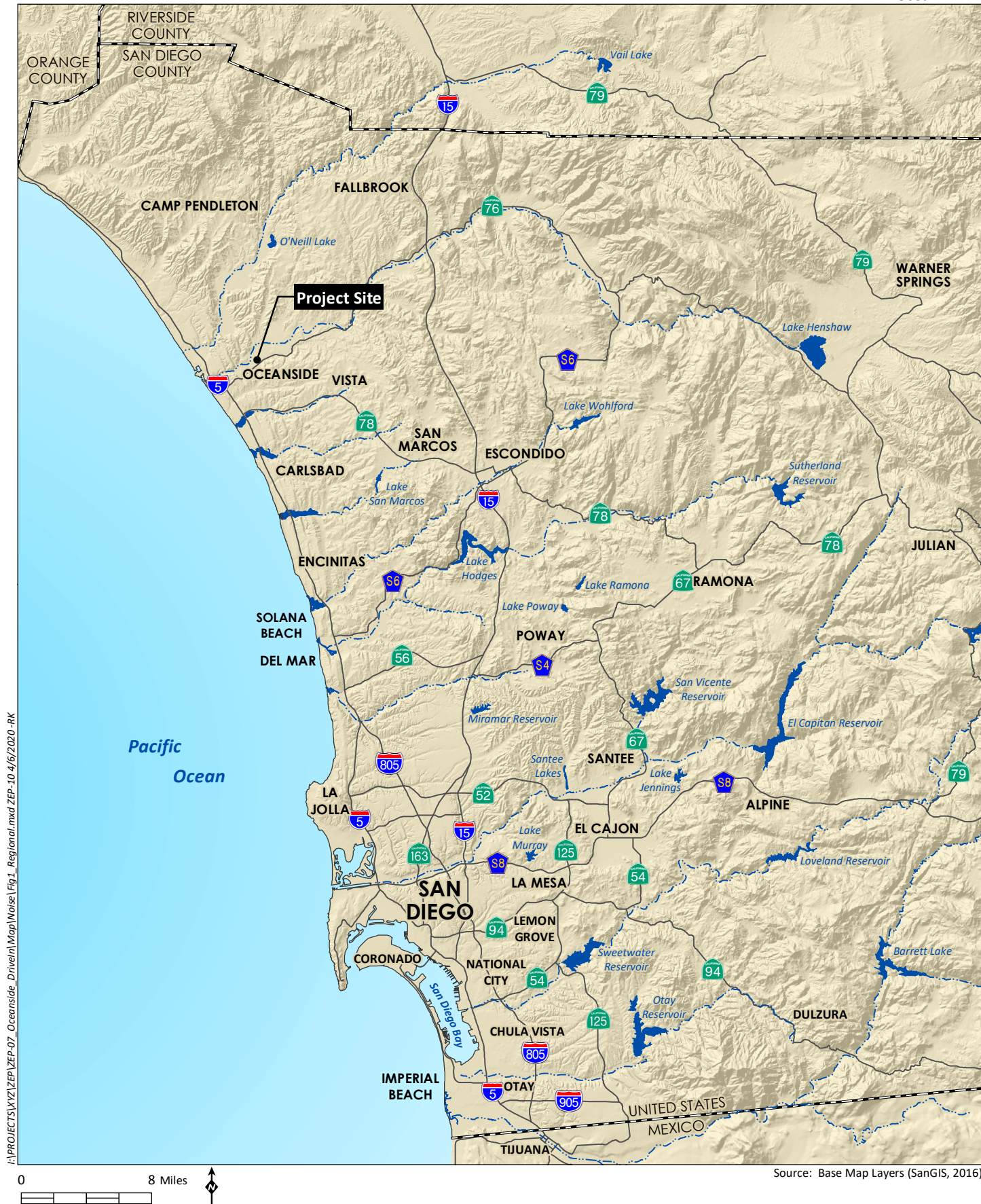
REFERENCES

California Department of Transportation (Caltrans). 2013. Transportation and Construction Vibration Guidance Manual. September.

2004. Traffic Noise Model.

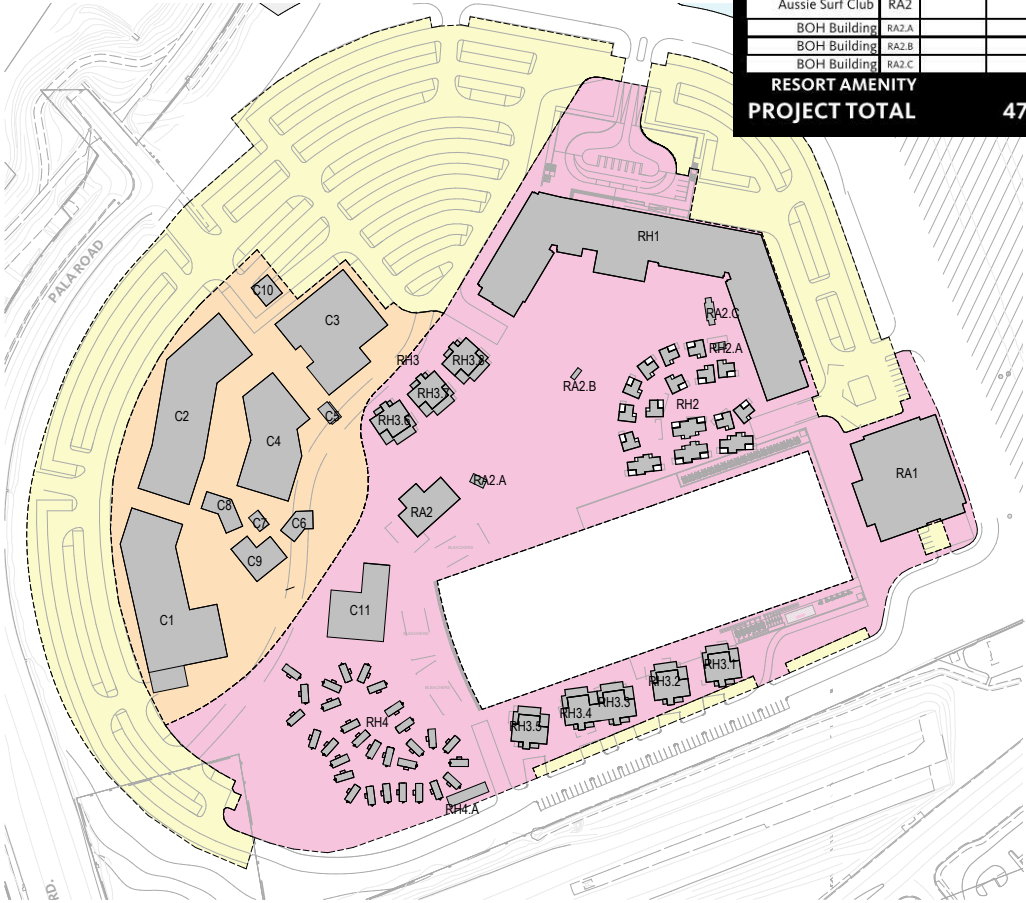
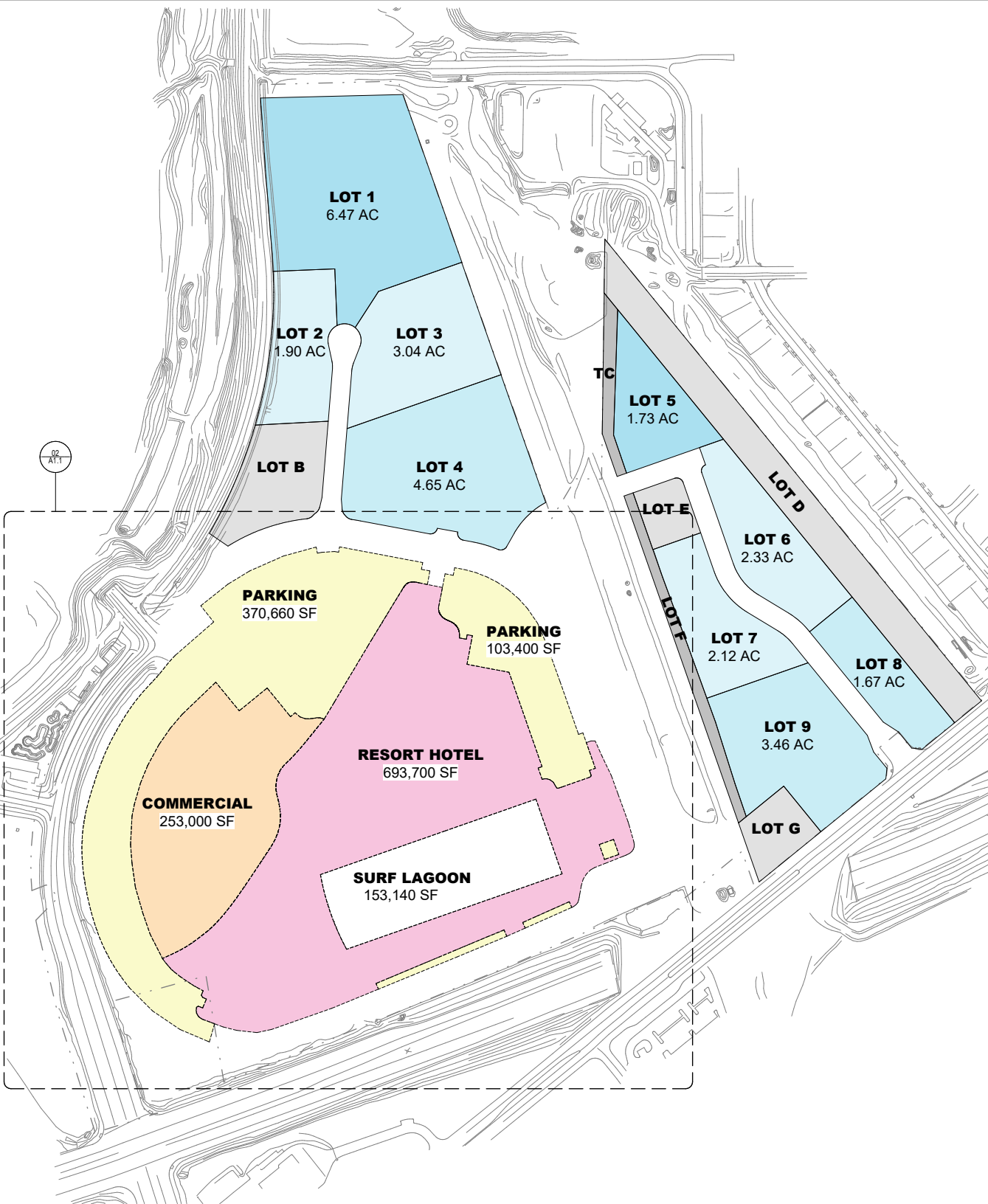
Linscott, Law & Greenspan Engineers (LLG). 2021. Local Transportation Study, Ocean Kamp Project. April 22.

San Diego Association of Governments (SANDAG). 2021. Transportation Forecast Information Center TFIC). Available from: <https://tfic.sandag.org/>.





I:\PROJECTS\XYZ\ZEP\ZEP-07_Oceanside_Drive\Map\Noise\Fig3_MixedUsePlan.indd ZEP-10 01/28/20-RK



		NSF	Proposed SF	CBC Group	ALUCP Land Use Type	Proposed Grade (FT/ASL)	PROPOSED MAX. HEIGHT (50FT MAX. FROM CURRENT GRADE)
Commercial	C1	25,200	27,000	M/B	COMMUNITY/NEIGHBORHOOD SHOPPING CENTERS <300,000SF WITH MIXTURE OF USES INCLUDING EATING/DRINKING ESTABLISHMENTS (APPROX. 120 SF/PERSON); OFFICE	43	48
Commercial	C2	25,430	27,000	M/B		44 & 45	49
Commercial	C3	16,590	18,000	M		46 & 47	40
Commercial	C4	15,110	17,000	M/B		46	34.5
Commercial	C5	590	700	M		46	19
Commercial	C6	1,530	2,000	M		45	18
Commercial	C7	550	700	M		45	14
Commercial	C8	2,150	2,500	M		45	21
Commercial	C9	3,460	4,000	M		45	23
Commercial	C10	1,280	1,500	M		47	18
Commercial	C11	6,500	8,000	A-3		44	30
COMMERCIAL		120,000	134,400				
Hotel	RH1		80,000	R-1	HOTELS, MOTELS (EXCEPT CONFERENCE/ASSEMBLY FACILITIES) (APPROX. 200 SF/PERSON)	48	50
	L02		52,000				
	L03		60,000				
	L04		45,000				
(20 Casitas) Hotel	RH2		12,000	R-1		46	14
BOH Building	RH2.A		200	S-2	LOW-HAZARD STORAGE: MINI-STORAGE, GREENHOUSES	46	14
(18 Villas) Hotel	RH3		21,000	R-1	HOTELS, MOTELS (EXCEPT CONFERENCE/ASSEMBLY FACILITIES) (APPROX. 200 SF/PERSON)	varies	28(21) / 42(31)
	L02		21,000				
	L03		5,250				
33 (Airstream) Hotel	RH4		13,000	R-1		43	12
BOH Building	RH4.A		1,500	S-2	LOW-HAZARD STORAGE: MINI-STORAGE, GREENHOUSES	44	14
RESORT HOTEL			310,950				
Conference	RA1		18,000	A-2	INDOOR LARGE ASSEMBLY ROOM (CAPACITY 300 TO 999 PEOPLE); SPORTS ARENAS, THEATERS, AUDITORIUMS, ASSEMBLY HALLS (APPROX. 15 SF/PERSON)	49.5	32
Aussie Surf Club	RA2		8,000	A-3	HOTELS, MOTELS (EXCEPT CONFERENCE/ASSEMBLY FACILITIES) (APPROX. 200 SF/PERSON)	44	18
BOH Building	RA2.A		800	S-2		45	14
BOH Building	RA2.B		200	S-2	LOW-HAZARD STORAGE: MINI-STORAGE, GREENHOUSES	45	14
BOH Building	RA2.C		500	S-2		45	14
RESORT AMENITY			27,500				
PROJECT TOTAL			472,850				

Source: Gensler 2019

Attachment A

Site Survey Measurement Sheets

Site Survey

Job # **2EP-10**

Project Name: **Ocean KAMP**

Date: **2/28/20**

Site #: **M1**

Engineer: **Brendan Sullivan**

Address: **Mission Avenue, Oceanside, CA**

Meter: **LD 831**

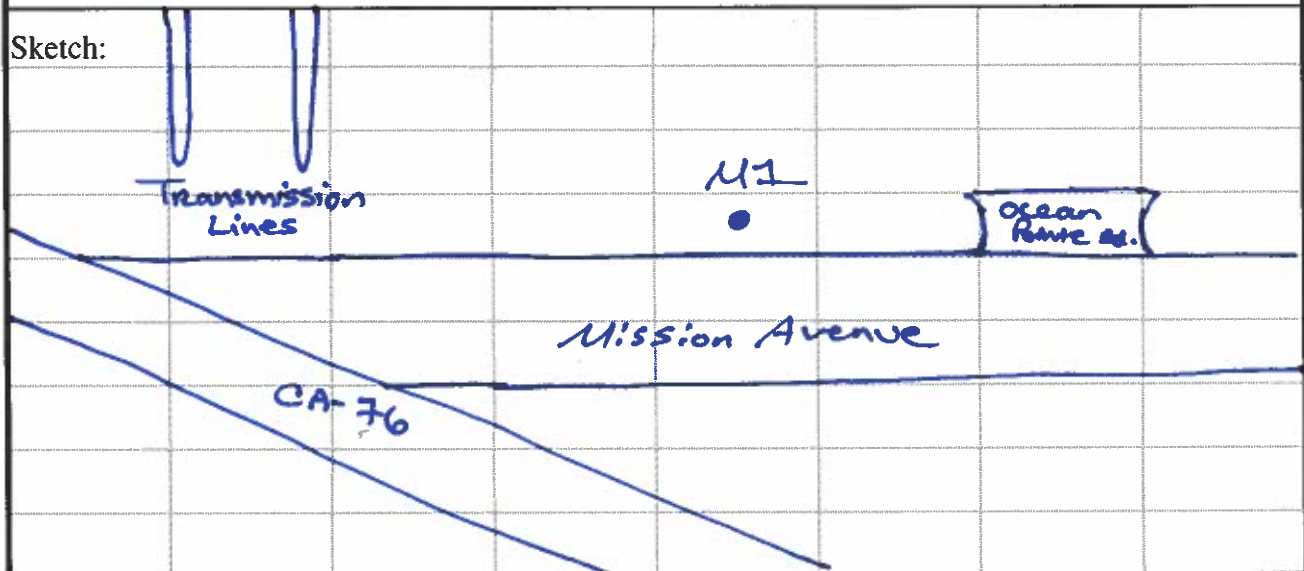
Serial #: **0001390**

Calibrator: **CA 250**

Serial #: **2621**

Notes: **Warm day, light breeze, ambient nature sounds,
very busy traffic on Mission Avenue.**

Sketch:



Temp: **82°**

Wind Spd: **6**

mph

Humidity: **14**

%

Start of Measurement: **11:03**

End of Measurement: **11:18**

72.5 dBA L_{EQ}

Cars (tally per 5 cars)

Medium Trucks (MT)

Heavy Trucks (HT)

280 CARS

1

1

6 Medium Trucks

1 HT Truck

Noise Measurement for Information Only

No Through Roadways

No Calibration Analysis Will Be Provided

Site Survey

Job # 2EP-10

Project Name: Ocean KAMP

Date: 2/28/20

Site #: M2

Engineer: Brendon Sullivan

Address: Mission Avenue, Oceanside, CA

Meter: LD 381

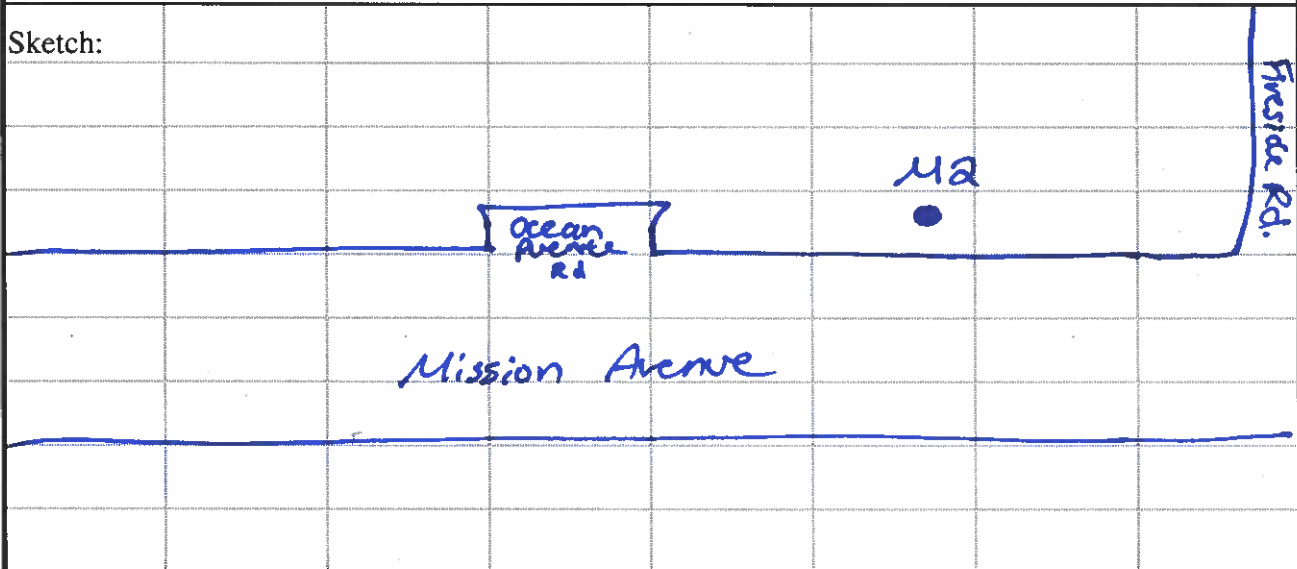
Serial #: 0001390

Calibrator: CA250

Serial #: 2681

Notes: Warm day, breeze/light, ambient nature
sands, heavy traffic passing on Mission Avenue.

Sketch:



Temp: 82°

Wind Spd: 6

mph Humidity: 14 %

Start of Measurement: 11:22

End of Measurement: 11:37

71.9 dBA L_{EQ}

Cars (tally per 5 cars)

Medium Trucks (MT)

Heavy Trucks (HT)

||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
190 cars

|||||
4 Total

Noise Measurement for Information Only

No Through Roadways

No Calibration Analysis Will Be Provided