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Ms. Mabel Uyeda, P.E.
Senior Civil Engineer
Water Utilities Department
300 North Coast Highway
Oceanside, CA 92054

Subject: Noise Assessment for the Oceanside Sewer Improvements Program

Dear Ms. Uyeda,

HELIX Environmental Planning, Inc. (HELIX) has prepared an assessment of noise levels associated with the Oceanside Sewer Improvements Program (Program). This letter summarizes the findings of the noise assessment.

PROGRAM LOCATION

The Program is located in the City of Oceanside in northwestern San Diego County (Figure 1, *Regional Location*). The Program is located within Sections 5, 6, 7, 8, 18, and 19 of Township 11 South, Range 4 West, and Sections 24, 25, 26, and 35 of Township 11 South, Range 5 West, on the U.S. Geological Survey (USGS) 7.5' San Luis Rey quadrangle (Figure 2, *USGS Topography*). The Program alignment spans approximately seven miles from the existing San Luis Rey Water Reclamation Facility (SLRWRF; located at 3950 North River Road) in the northeast to the existing La Salina Wastewater Treatment Plant (LSWWTP; located at 1300 S. Myers Street) in the southwest. From the SLRWRF, the alignment generally extends southwest along Whalen Lake Road, crosses the San Luis Rey River corridor, continues to the south-southeast, crossing San Luis Rey Mission Expressway (State Route [SR] 76) and Mission Avenue, Hacienda Drive, Las Vegas Drive, and other residential streets, and continues southwest through Garrison Avenue to Oceanside Boulevard. The alignment then follows Oceanside Boulevard southwest for approximately 2.5 miles to miles the LSWWTP (Figure 3, *Project Features [Aerial Photograph]*).

PROGRAM DESCRIPTION

The proposed Program consists of individual wastewater utility improvement projects spanning a linear alignment from the SLRWRF to the terminus of the Oceanside Ocean Outfall at the LSWWTP. The Program includes underground improvements and above ground construction of a new lift station. Specific utility improvements are currently under design. Proposed Program components are shown conceptually on Figure 3 and further described below.

Sewer improvement projects that have been identified as part of this programmatic effort thus far include the following:

- Oceanside Mesa Garrison (OMG) Lift Station;
- OMG Force Main (OMG FM);
- Land Outfall Replacement;
- Mission Avenue Lift Station Force Main (MALS FM) Replacement; and
- Mission Avenue Gravity Sewer Lining and Replacement.

Oceanside Mesa Garrison Lift Station Project

The proposed OMG Lift Station Project involves the design and construction of a five-million-gallon-per-day (MGD) sewer lift station near the intersection of Mesa Drive and Garrison Street. The new OMG Lift Station would accommodate gravity flows from Mesa Drive and Garrison Street via a 24-inch gravity sewer main. Flows from the OMG Lift Station would be conveyed north to the SLRWRF via the new OMG FM, which is described below in the following section.

The City has identified the permanently closed Garrison Elementary School property as the optimal location for the proposed OMG Lift Station due to reduced pumping costs, proximity to the convergence of major sewer pipelines that would connect at the intersection of Mesa Drive and Garrison Street, and avoidance of permanent structures under San Diego Gas and Electric (SDG&E) high voltage power lines. The lift station would be developed within approximately 3 acres of the 11.2-acre property, which includes a 28-foot-wide access road proposed along the eastern property line for future utilities and maintenance access. The access road would also allow vehicle access to the project site from the south and possibly the north because Garrison Street is not a through street between Oceanside Boulevard and Mesa Drive. The remaining former school property would be sold to a prospective developer.

The proposed OMG Lift Station would include construction of the access road and lift station and associated components, including a wet well, emergency storage, future pipelines, parking, training (open area), and equipment storage.

Oceanside Mesa Garrison Force Main Project

The OMG FM Project involves the design and construction of approximately 16,100 linear feet (LF) of 36-inch sewer force main that would carry wastewater flows from the proposed OMG Lift Station, as well as flows from the existing Buena Vista FM, to the SLRWRF. The existing 36-inch/42-inch Buena Vista FM carries flows from the Buena Vista Lift Station (located near the Carlsbad Shopping Center at Jefferson Street and SR 78), and gravity flows from the Mesa-Garrison intersection, to SLRWRF.

A substantial portion of the pipeline would occur within existing City easements outside of paved roadways. The OMG FM would commence at the OMG Lift Station. North of the lift station, the FM would continue north along Garrison Street to the intersection with Mesa Drive. Here, it would connect to and collect flows from the existing Buena Vista FM. The OMG FM would continue northwest along

Mesa Drive and then north through the SDG&E/Kinder Morgan transmission corridor, northeast across the San Luis Rey River, and along Whalen Lake Road to the SLRWRF (Figure 2).

The new 36-inch OMG FM would parallel the existing Buena Vista FM and would utilize the existing Buena Vista FM piping within an approximately 800-LF portion of tunnel ("Tunnel") near the SDG&E Substation that is west of El Camino Real and north of Mesa Drive. Piping within the Tunnel would not be replaced. The Buena Vista FM has few maintenance/access locations, which limits the City from cleaning and inspecting the pipe. Upon installation of the new OMG FM, the Buena Vista FM can be taken out of service, cleaned, inspected, and rehabilitated to safely serve as a redundant pipeline for the new OMG FM. To provide redundancy for the 36-inch pipe through the Tunnel section, an existing 22-inch high-density polyethylene (HDPE) pipe that currently carries Mesa-Garrison gravity flows through the Tunnel may be repurposed to handle the pressurized flow from the new OMG FM. Work would include connecting and installing valves on the 22-inch HDPE pipe and replacing approximately 1,000 LF of lined gravity pipe north of the Tunnel.

An approximately 800-LF extension of the OMG FM is proposed to be constructed south of the OMG Lift Station to accommodate future system expansion and improved reliability. The OMG FM Extension would serve as a future system tie-in that could accommodate diversion of flows from the City's sewer collection system into the OMG FM. The OMG FM Extension would be constructed in conjunction with the OMG FM to minimize future construction costs and reduce potential service disruptions.

Land Outfall Replacement Project

The Land Outfall Replacement Project involves upsizing approximately 27,000 LF of existing 24-inch Land Outfall to 36-inch pipe between the SLRWRF and LSWWTP in various segments. The capacity increase would accommodate additional flows after Fallbrook Public Utility District's connection to Land Outfall at Pala Road and future effluent diverted from LSWWTP. Approximately 19,000 LF of the Land Outfall from SLRWRF to the proposed OMG Lift Station site generally follows the same corridor as the proposed OMG FM. This segment includes the 800 LF Tunnel section near the SDG&E Substation off El Camino Real north of Mesa Drive that would not be upsized. This upper reach is critical from an operational standpoint to accommodate future increased flows and provide spill control measures at SLRWRF. The upsized Land Outfall would provide the reliability and capacity to divert flows should the Pure Water (Advanced Water Treatment Facility) and Recycled Water production facilities be taken off-line unexpectedly, as well as for maintenance purposes. This would also allow for future wastewater flow increases and potential coordination with nearby agencies that have expressed interest in sending more effluent through Oceanside's Land Outfall. Of the remaining 10,000 LF of pipe to be replaced, approximately 4,000 LF near the North County Transit District Railroad right-of-way was assessed in July 2021, and the condition was found to be extremely poor and requiring replacement. The other 6,000 LF in Oceanside Boulevard to Garrison Elementary School was not assessed but upsizing would further alleviate capacity and operational issues.

Mission Avenue Lift Station Force Main Replacement Project

The MALS FM Replacement Project involves the replacement of approximately 13,000 LF of the existing 24-inch sewer force main from the existing Mission Avenue Lift Station to SLRWRF with a new parallel pipeline. The pipeline would commence at the lift station near Mission Avenue, where it would run north through the proposed Ocean KAMP development, the SDG&E/Kinder Morgan transmission

corridor, the Mission Basin Groundwater Purification Facility, and north in an easement adjacent to San Luis Rey Fireside Pond under US Army Corp of Engineers jurisdiction. The pipeline would continue north in a public easement through unpaved areas, where it would be incorporated into the private streets of a proposed 52-unit Cypress Point residential development at Pala Road before crossing under the San Luis Rey River along with the other proposed pipelines. There, the pipeline would continue to run northeast through unpaved areas, potentially around SLRWRF's holding ponds and to the plant's headworks. Once the new parallel pipe is constructed, the existing 24-inch MALS FM may be taken offline, cleaned, assessed, and repaired to serve as a backup force main to improve the reliability of the City's sewer system.

Mission Avenue Gravity Sewer Lining and Replacement Project

The Mission Avenue Gravity Sewer includes cured-in-place lining of approximately 600 LF of 24-inch gravity sewer pipe starting at 3560 Mission Avenue at the terminus of the Market Place Del Rio Sewer Replacement project west to Fireside Street. From the Fireside Street and Mission Avenue intersection, approximately 1,600 LF of the 24-inch pipe along Mission Avenue to the west would need to be upsized to a 30-inch and/or 36-inch pipe. The existing sewer is located in private easements through a commercial shopping center and undeveloped parcels owned by the Ocean KAMP development. The new replacement pipe would likely be relocated into Mission Avenue, where feasible. The Ocean KAMP development is conditioned to upsize a portion of the sewer in Mission Avenue in front of the development.

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. 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.

Because decibels are logarithmic units, they cannot be added or subtracted through standard 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 from one source under the same conditions. For example, if one automobile generates 70 dBA when it passes an observer, two cars passing simultaneously would not produce 140 dBA—rather, they would combine to produce 73 dBA. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dBA louder than one source.

REGULATORY FRAMEWORK

City of Oceanside General Plan Noise Element

The General Plan Noise Element for the City of Oceanside (2002) states that noise generated by construction activity should not exceed 85 dBA when measured 100 feet from the source.

Additionally, the General Plan states that construction equipment shall not be operated within any residential zone or 500 feet from any residential zone between 8:00 p.m. and 7:00 a.m., generating an ambient noise level of 50 dBA at any property line. Construction activities also shall not occur between 6:00 p.m. and 7:00 a.m. when construction noise levels exceed the ambient noise level by 5 dBA.

City of Oceanside Noise Control Ordinance

Chapter 38 of the City of Oceanside Municipal Code states that 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 in Table 1, *City of Oceanside General Sound Level Limits*.

Table 1
CITY OF OCEANSIDE GENERAL SOUND LEVEL LIMITS

Base District Zone	7:00 a.m. to 9:59 p.m.	10:00 p.m. to 6:59 a.m.
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
C (Commercial)	65	60
I (Industrial)	70	65
D (Downtown)	65	55
A (Agricultural)	50	45
OS (Open Space)	50	45

Source: City of Oceanside Municipal Code Section 38.12

The Noise Control Ordinance further states that the city manager, or the manager's designee, on a case-by-case basis, may authorize construction, maintenance or other public improvement activities by a government agency or a public utility, that exceed the noise, duration or hour of work limits established by this chapter, upon a determination that the authorization furthers the public interest.

Biologically Sensitive Habitat

Guidelines produced by the U.S. Fish and Wildlife Service (USFWS) require that project noise be limited to a level not to exceed 60 dBA L_{EQ} or, if the existing ambient noise level is above 60 dBA L_{EQ} , increase the ambient noise level by 3 dBA L_{EQ} at the edge of occupied habitat during the avian species breeding season.

METHODOLOGY AND ASSUMPTIONS

Construction Assumptions

Construction of the Program components would include both below and above-ground elements. A variety of construction equipment would be used throughout Program implementation based on the proposed construction activity, shown in Table 2, *Construction Equipment Assumptions*. The OMG FM

Project, Land Outfall Replacement Project, MALS FM Project, and Mission Avenue Gravity Sewer Lining and Replacement Project would involve pipeline improvements that would require open-cut trenching and trenchless construction methods. Trenching would require above-ground excavation along the pipeline alignment. Trenchless methods would require digging launching and receiving pits at either end of the section of pipeline. These Program components are linear projects, with work occurring along each alignment. Construction equipment is anticipated to progress at approximately 80 to 100 feet per day. Construction of the OMG Lift Station would involve site clearing and grubbing, grading and excavation, shoring, and facility construction. It is expected that construction would occur primarily during daytime hours, but there is potential for construction to occur during nighttime hours as well, for activities such as pipeline installation work within major roadways. A list of anticipated key noise-generating construction equipment by activity is provided in Table 2.

Table 2
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment
Dewatering	Backhoe
	Bore/Drill Rig
	Excavator
	Generator
Pavement Removal/ Excavation	Backhoe
	Concrete Saw
	Excavator
	Pavement Scarifier
Trenched Pipe Installation/ Fuse Pipe/Backfill	Backhoe
	Excavator
Trenchless Pipe Installation	Backhoe
	Bore/Drill Rig
	Crane
	Excavator
	Forklift
	Generator

Construction Phase	Equipment
Pressure Test Pipeline and Valve Installation	Backhoe
	Crane
	Generator
	Pump
Paving	Paver
	Roller
	Skid-steer Loader
Lift Station Construction	Backhoe
	Crane
	Dozer
	Excavator
	Generator
	Grader
	Paver
	Plate Compactor
	Roller
	Skid-steer Loader

Operational Assumptions

Operation of the proposed OMG Lift Station would include equipment that would generate elevated noise levels. The two primary operational noise-generating components of the lift station would be (1) lift station pump motors and ventilation system, and (2) a diesel backup generator. Although project-specific equipment location information and equipment noise data are not yet available, this noise analysis uses assumptions based on typical lift station design and equipment.

This analysis assumes two pump motors would be in use at a time. It is assumed that the pump would operate during daytime and nighttime hours. The pumps would be located within the lift station structure and are expected to generate interior noise levels ranging from 75 to 90 dBA. The structure would include vents for air ventilation, and the pump motor noise would transfer from the interior to the exterior of the structure through the vents. Additional noise would be generated from a ventilation fan near the vent opening. Exterior noise levels would be dependent on the specific type of equipment, location and size of the vent, and any other openings in the structure. For the purposes of this analysis, exterior noise levels are expected to be up to approximately 80 dBA at 10 feet from the lift station building.

Implementation of the lift station would also require a backup generator that would be used to power the lift station in the instance of normal power failure. The backup generator would also be tested at regular intervals, which is assumed to occur during daytime hours. A standard generator of the size anticipated to be required for the lift station is estimated to generate a noise level of approximately 75 dBA at 23 feet.

Existing Noise Conditions

The primary noise source in the vicinity of the Program alignment is roadway traffic, most notably along Interstate 5, SR 76, Oceanside Boulevard, El Camino Real, and Mission Avenue. Noise from aircraft

utilizing Oceanside Municipal Airport, which is located approximately 0.5 mile from the closest point of the Program alignment, is also audible in the Project area; however, the Program alignment is outside of the 60 CNEL noise contour as shown on Exhibit III-1, Compatibility Policy Map: Noise, of the Oceanside Municipal Airport Land Use Compatibility Plan (San Diego County Regional Airport Authority 2010).

Noise Modeling Software

Modeling of the exterior noise environment for this report was accomplished using a computer noise model: Computer Aided Noise Abatement (CadnaA) version 2023. 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 model, and uses the most up-to-date calculation standards to predict outdoor noise impacts.

Program construction noise was also analyzed using the Roadway Construction Noise Model (RCNM; USDOT 2008), which utilizes estimates of sound levels from standard construction equipment.

SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, implementation of the Program would result in a significant adverse impact if it would:

Threshold 1: *Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the Oceanside General Plan or Noise Ordinance.*

Noise generated by construction activity would exceed City requirements if it exceeds 85 dBA L_{EQ} (one hour) as measured at 100 feet from its source. Additionally, construction noise exceeding 10 dBA above existing ambient noise levels at nearby sensitive receptors would be considered a significant increase.

Construction activity occurring within 500 feet of a residential zone between the nighttime hours of 8:00 p.m. and 7:00 a.m. would be considered significant if it exceeds 50 dBA at any property line. Construction activities also would be considered significant if they exceed the ambient noise level by 5 dBA during the evening and nighttime hours from 6:00 p.m. and 7:00 a.m.

Construction activity would be considered significant for biologically sensitive avian habitats during the breeding season if it exceeds a one-hour average noise level of 60 dBA.

Noise generated by the OMG Lift Station would be significant if it exceeds the City's sound level limits for nearby properties as defined in Table 1.

Threshold 2: *Result in the generation of excessive ground-borne vibration or ground-borne noise levels.*

Excessive ground-borne vibration would occur if construction-related ground-borne vibration exceeds the "strongly perceptible" vibration annoyance potential criteria for human receptors of 0.1 inch per second peak particle velocity (PPV), or the damage potential criteria to relatively old residential

structures 0.5 inch per second PPV for continuous/frequent intermittent construction sources (such as impact pile drivers, vibratory pile drivers, and vibratory compaction equipment) as specified by Caltrans (2020).

ANALYSIS

Issue 1: Excessive Noise Levels

Would operation of the Program result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the Oceanside General Plan or Noise Ordinance?

Construction Noise

On a given workday, construction equipment would be utilized at individual locations along the approximately seven-mile Program alignment. Equipment may therefore be used at different distances from residential uses and biologically sensitive avian habitats depending on the day and location along the Program alignment. Table 3, *Construction Equipment Noise Levels*, provides the percent operating time, or percent of a given hour that each piece of equipment would be used, and the one-hour noise level for each of the assumed pieces of construction equipment at a distance of 100 feet.

**Table 3
CONSTRUCTION EQUIPMENT NOISE LEVELS**

Unit	Percent Operating Time	dB _A L _{EQ} (one hour) at 100 feet
Backhoe	40	67.6
Bore/Drill Rig	20	71.3
Concrete Saw	20	76.6
Crane	16	66.6
Dozer	40	71.7
Excavator	40	70.7
Forklift	20	61.7
Generator	50	71.6
Grader	40	75.0
Pavement Scarifier	20	76.5
Paver	50	68.2
Compactor	10	70.2
Pump	50	71.9
Roller	20	67.0
Loader	40	69.1
Excavator/Loader/Dump Truck	40	73.9

Source: RCNM

Daytime Construction

The City General Plan Noise Element states that at 100 feet, noise levels from construction equipment shall not exceed 85 dBA. As shown in Table 3, none of the individual pieces of anticipated equipment

would exceed those limits; however, nearby noise-sensitive land uses such as residences, hotels, and parks would be located within 100 feet of construction, given that such uses occur immediately adjacent to the Program alignment. Furthermore, daytime construction noise impacts would occur if noise exceeds existing ambient conditions at neighboring properties by more than 10 dBA, which is a perceived doubling of loudness and an appropriate increase-over-ambient limit for temporary construction activities. For residential neighborhoods, it is assumed that impacts would occur if noise levels exceed 60 dBA, based on an assumed ambient daytime noise level of 50 dBA per the City’s general sound level limits (see Table 1). Similarly, for biologically sensitive habitat, impacts would occur if noise levels exceed 60 dBA L_{EQ} (1 hour).

Because construction would not be used at a standard distance from nearby land uses, this letter analyzes individual pieces of construction equipment to determine the distances within which construction noise would be significant. Table 4, *Construction Equipment Setback Distances*, provides the setback distances for residential uses and biologically sensitive habitat based on a limit of 60 dBA L_{EQ} (1 hour). Setback distances with a six-foot barrier placed approximately eight feet from the noise source are also provided.

**Table 4
CONSTRUCTION EQUIPMENT SETBACK DISTANCES**

Equipment Type	Distance Within Which Noise Levels Would Exceed Threshold ²		Potential to Exceed Noise Threshold at Closest Residential Land Uses ⁴
	No Barrier	With 6-foot Barrier ³	
Backhoe	240 feet	101 feet	Yes
Bore/Drill Rig	234 feet	99 feet	Yes
Concrete Saw	675 feet	117 feet	Yes
Crane	57 feet	27 feet	Yes
Dozer	243 feet	102 feet	Yes
Excavator	343 feet	145 feet	Yes
Forklift	77 feet	32 feet	Yes
Generator	379 feet	160 feet	Yes
Grader	355 feet	150 feet	Yes
Pavement Scarifier	210 feet	54 feet	Yes
Paver	255 feet	65 feet	Yes
Compactor	35 feet	9 feet	Yes
Pump	392 feet	105 feet	Yes
Roller	224 feet	94 feet	Yes
Loader	128 feet	54 feet	Yes
Excavator/Loader/Dump Truck ¹	493 feet	247 feet	Yes

Source: RCNM; CadnaA

¹ Equipment is assumed to be used for 4 hours out of an 8-hour workday.

² Threshold is noise levels exceeding 60 dBA L_{EQ} (1 hour).

³ Barrier is assumed to be approximately 8 feet from noise source.

⁴ The closest residential land uses are immediately adjacent to the Program alignment.

Because residential land uses would be located immediately adjacent to the Program alignment, there is potential for construction equipment to be used within the setback distances provided in Table 4, in

which case the 60-dBA L_{EQ} limit would be exceeded. Impacts from temporary daytime construction noise are therefore considered to be potentially significant without mitigation.

Nighttime Construction

As mentioned above, the City's General Plan states that construction equipment shall not be operated within any residential zone or 500 feet from any residential zone between 8:00 p.m. and 7:00 a.m., generating a noise level of 50 dBA at any property line. Construction activities also shall not occur between 6:00 p.m. and 7:00 a.m. when construction noise levels exceed the ambient noise level by 5 dBA. The assumed ambient nighttime noise level for residential uses is 45 dBA per the City's general sound level limits (see Table 1). Since a 5-dBA increase over this assumed ambient noise level is 50 dBA, a 50-dBA limit is used herein to assess the potential for nighttime noise impacts.

It is assumed that the same construction equipment presented above in Table 3.8-5 for daytime construction would also have the potential to be used for nighttime construction, and at the same locations. Given that all analyzed pieces of construction equipment would have the potential to exceed 60 dBA L_{EQ} based on the location of residential uses immediately adjacent to the Program alignment, the construction equipment would also have the potential to exceed the 50 dBA L_{EQ} limit for nighttime construction. Nighttime construction noise impacts are therefore considered to be potentially significant.

Mitigation measure NOI-1 would implement a construction noise management plan to reduce noise levels.

NOI-1 Construction Noise Management Plan. A Construction Noise Management Plan(s) shall be prepared to reduce noise at noise-sensitive land uses (NSLUs; e.g., residences, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare centers, and passive recreational parks) from construction of the Program components. The plan(s) shall be prepared by the Contractor and approved by the City of Oceanside or its Designated Representative(s). The plan(s) shall include noise control measures to achieve the following standards, to the extent feasible, and allow for completion of the Program in light of necessary work methods and the physical constraints of available work areas:

- Noise from construction activities shall comply with the thresholds and hours specified by the City of Oceanside.
- Construction noise shall not exceed 85 dBA L_{EQ} (one hour) when measured at 100 feet from the source at the nearest NSLU.
- Construction noise shall not exceed the ambient noise levels of a given area by 10 dBA L_{EQ} (one hour) at the nearest NSLU between 7:00 a.m. and 6:00 p.m.
- Construction noise shall not exceed 50 dBA at any property line when equipment is operated within any residential zone or 500 feet from any residential zone between 8:00 p.m. and 7:00 a.m.

- Construction noise shall not exceed the ambient noise levels of a given area by 5 dBA L_{EQ} (one hour) at the nearest NSLU between 6:00 p.m. and 7:00 a.m.
- Construction noise shall not exceed 60 dBA L_{EQ} (one hour) at biologically sensitive avian habitats at any time during the breeding season.

Appropriate measures shall be implemented to reduce construction noise including, but not be limited to, the following:

- Construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.
- Diesel equipment shall be operated with closed engine doors and equipped with factory-recommended mufflers.
- Mobile or fixed “package” equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) shall be prohibited.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- No project-related public address or music system shall be audible at any adjacent sensitive receptor.
- Any truck or equipment equipped with back-up alarm moving within 300 feet of a noise-sensitive land use should have the normal back-up alarm disengaged and safety provided by lights and flagman, or broad-spectrum noise backup alarm (as appropriate for conditions) used in compliance with the Occupational Safety and Health Administration safety guidelines.
- Temporary sound barriers or sound blankets shall be installed between construction operations and adjacent noise-sensitive land uses. The project Contractor shall construct a temporary noise barrier at least six feet in height meeting the specifications listed below (or of a Sound Transmission Class [STC] 19 rating or better) to attenuate noise.
- If a temporary barrier is used instead of a blanket, the temporary barrier shall be solid and constructed of wood, plastic, fiberglass, steel, masonry, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove or close butted seams and must be at least ¾-inch thick or have a surface density of at least 3.5 pounds per square-foot. 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. Noise blankets, hoods, or covers also may be used, provided they are appropriately implemented to provide the required sound attenuation.

- Residents within 200 feet of a project's disturbance area shall be notified in writing within one week of any construction activity. The notification shall describe the activities anticipated, provide dates and hours, and provide contact information with a description of a complaint and response procedure.
- The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. The on-site construction supervisor shall confirm that all steps identified in this mitigation measure are employed as directed. A clear appeal process for the affected resident shall be established prior to construction commencement to allow for resolution of noise problems that cannot be immediately solved by the site supervisor.

Implementation of mitigation measure **NOI-1** would reduce noise generated by construction noise. Due to the proximity of noise-sensitive land uses to the project area, construction noise may still significantly exceed existing ambient conditions. Construction noise is therefore conservatively assessed to be significant and unavoidable.

Operational Noise

As noted previously, exterior noise levels are anticipated to be up to approximately 80 dBA when measured at 10 feet from the OMG Lift Station. Based on this noise level, the noise levels emanating from the lift station could exceed the daytime residential noise limit of 50 dBA within 300 feet and exceed the nighttime limit of 45 dBA within 550 feet. The lift station would be developed within approximately 3 acres of an 11.2-acre property that is immediately adjacent to a residential property located to the west. While the exact location of the 3-acre lift station site within the 11.2-acre property is yet to be determined, it is assumed that the lift station vent would be located within the above-mentioned distances to the nearest property line(s), and that noise levels would have the potential to exceed the applicable City limits for operational noise as shown in Table 1. Mitigation measure NOI-2 would be required to reduce impacts to a less-than-significant level.

Similarly, testing of the lift station emergency generator would be required during daytime hours that may generate noise levels of approximately 75 dBA at 23 feet. Based on this noise level, the generator noise levels may exceed 50 dBA within 400 feet. Since the generator may be located within this distance to the property line(s), noise levels would have the potential to exceed the applicable 50-dBA L_{EQ} daytime limit during regular generator testing. Mitigation measure NOI-3 would be required to reduce impacts to a less-than-significant level.

NOI-2 OMG Lift Station Operation Noise Attenuation. Noise generated by operation of the OMG Lift Station pumps and ventilation system shall comply with the City's sound level limits of 50 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 45 dBA during the hours of 10:00 p.m. to 7:00 a.m. at nearby residential property lines. To adequately reduce noise levels, noise attenuating equipment and/or acoustical shielding shall be incorporated into the design plans of the lift station. Such features may include, but not be limited to, acoustical louvers, in-line silencers,

and/or noise walls. Prior to building plan approval, planning for the lift station noise sources shall be required to show noise compliance with the relevant daytime limit and nighttime limit at the affected property lines. A final operational test shall be required with the pumps and ventilation system in operation to ensure noise levels are below the required standards. Should the operational test fail to show the required noise attenuation, additional attenuating design features, technologies, or methods shall be employed until the operational test demonstrates the noise levels do not exceed the City's sound level limits.

NOI-3 Generator Noise Attenuation. Noise generated by the generator during regular testing shall comply with the City's sound level limits of 50 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 45 dBA during the hours of 10:00 p.m. to 7:00 a.m. at nearby residential property lines. To adequately reduce noise levels, noise attenuating equipment and/or acoustical shielding shall be incorporated into the Project design. Such features may include, but not be limited to, noise walls, noise control enclosures, and/or noise absorbing paneling. Prior to building plan approval, planning for the generator shall be required to show noise compliance with the applicable limits at the property lines. A final operational test shall be required with the generator in operation to ensure noise levels are below the required standards. Should the operational test fail to show the required noise attenuation, additional attenuating design features, technologies, or methods shall be employed until the operational test demonstrates the noise levels do not exceed the City's sound level limits.

Issue 2: Excessive Vibration

Would the Program result in the generation of excessive ground-borne vibration or ground-borne noise levels?

Construction

Excessive levels of ground-borne vibration of either a regular or an intermittent nature may result in annoyance to residential uses. The construction activities required for the Program are not anticipated to generate excessive groundborne vibrations or noise levels. No pile driving is anticipated to be necessary as part of Program construction. The potential use of a vibratory roller for Program construction would not occur frequently during construction. As there is a relatively limited need for this piece of equipment during construction, it would likely be used very briefly and would affect an individual location for only a matter of minutes during a pass-by. Due to the temporary and transient nature of construction activities, the limited and infrequent potential use of a vibratory roller, and the fact that no other equipment known to cause significant vibrations is anticipated for use, impacts related to vibration are considered less than significant.

Operation

Operation of the proposed Program facilities would not involve equipment or processes that would generate substantial groundborne vibration. The primary operational components of the OMG Lift Station facility include stationary mechanical equipment such as pumps with motors that would not produce groundborne vibration at levels that would be perceptible or cause structural damage. Thus, impacts associated with operational vibration would be less than significant.

CONCLUSION

Noise related to individual construction equipment would be significant if operating within the setback distances shown in Table 4. If equipment is used within these distances, noise levels may significantly exceed the ambient noise levels of nearby noise-sensitive land uses or the biologically sensitive habitat noise threshold of 60 dBA L_{EQ} (one hour). Mitigation measure NOI-1 shall be required to reduce noise levels; however, construction noise may continue to exceed thresholds following mitigation, and impacts are considered significant and unavoidable. Operational noise levels from the OMG Lift Station may exceed the noise limits set by the City's Municipal Code. Because the exact design and location of the lift station are not known at this time, impacts are conservatively assessed as significant. Mitigation measures NOI-2 and NOI-3 would be required to ensure operational noise impacts would be reduced to less-than-significant levels. Impacts related to vibration would be less than significant with no mitigation required.

Sincerely,



Jason Runyan
Noise Specialist



Hunter Stapp
Noise Specialist

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Program Components

REFERENCES

California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual. April.

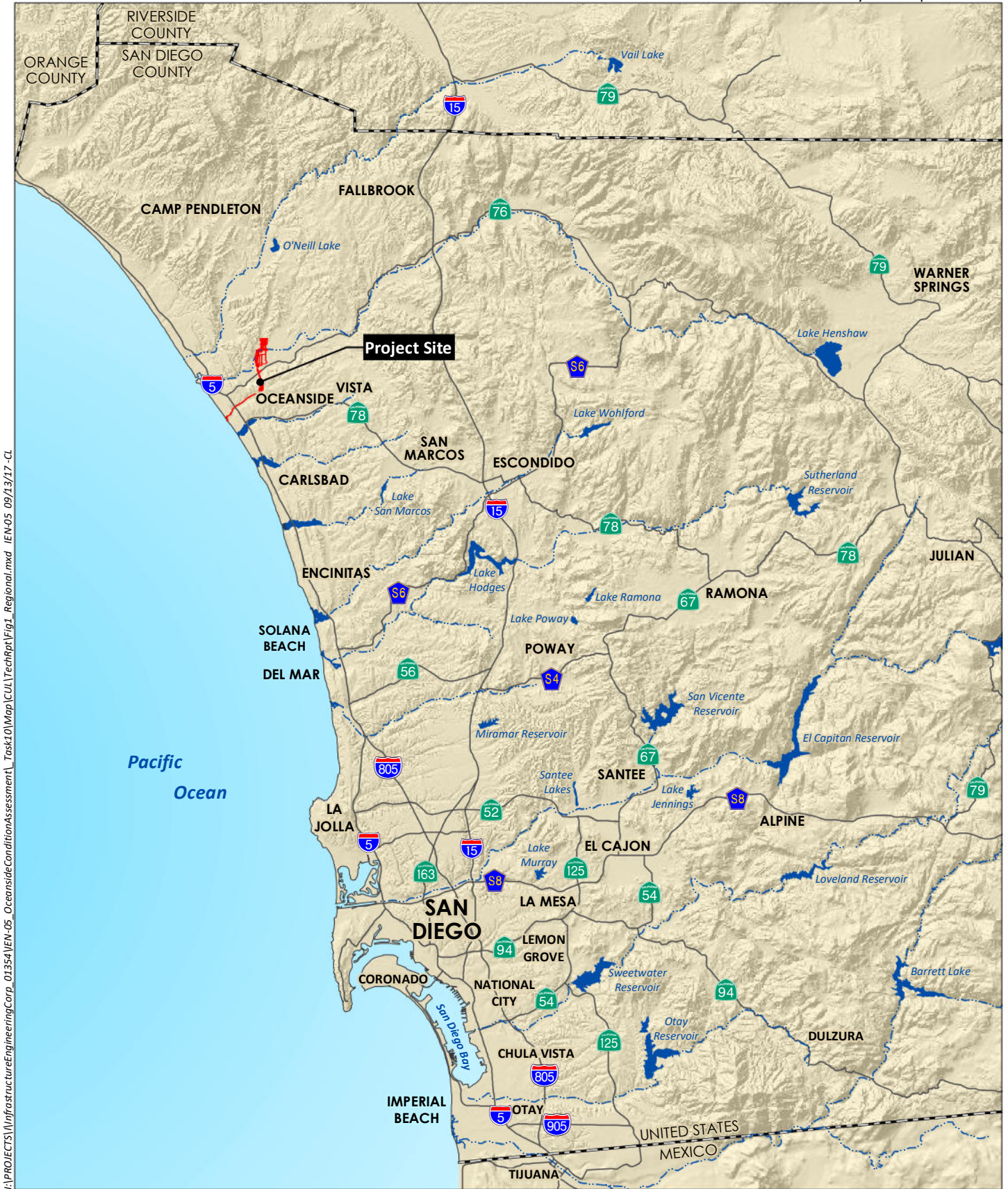
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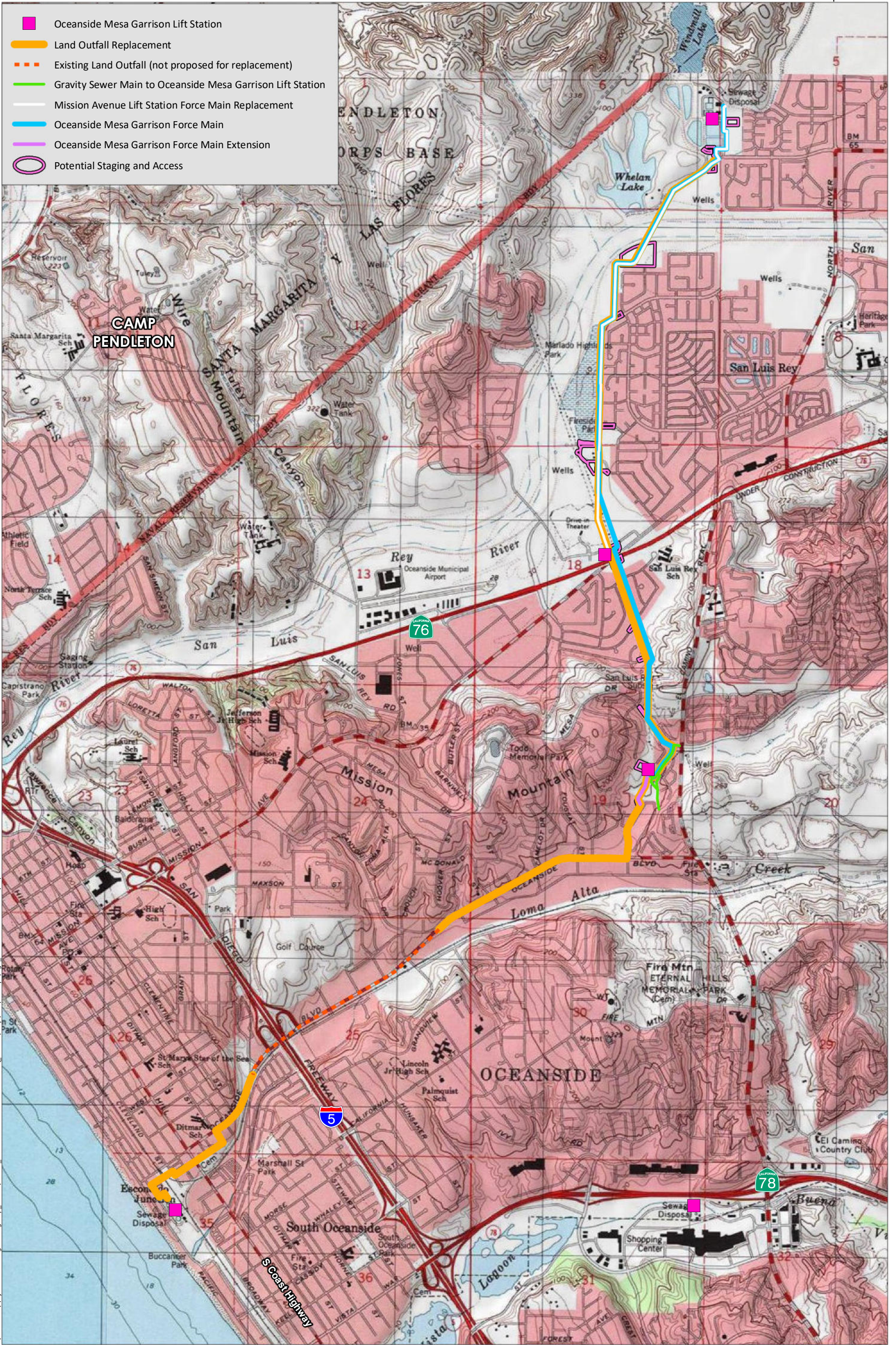
https://www.san.org/DesktopModules/Bring2mind/DMX/API/Entries/Download?EntryId=16149&Command=Core_Download&language=en-US&PortalId=0&TabId=807.

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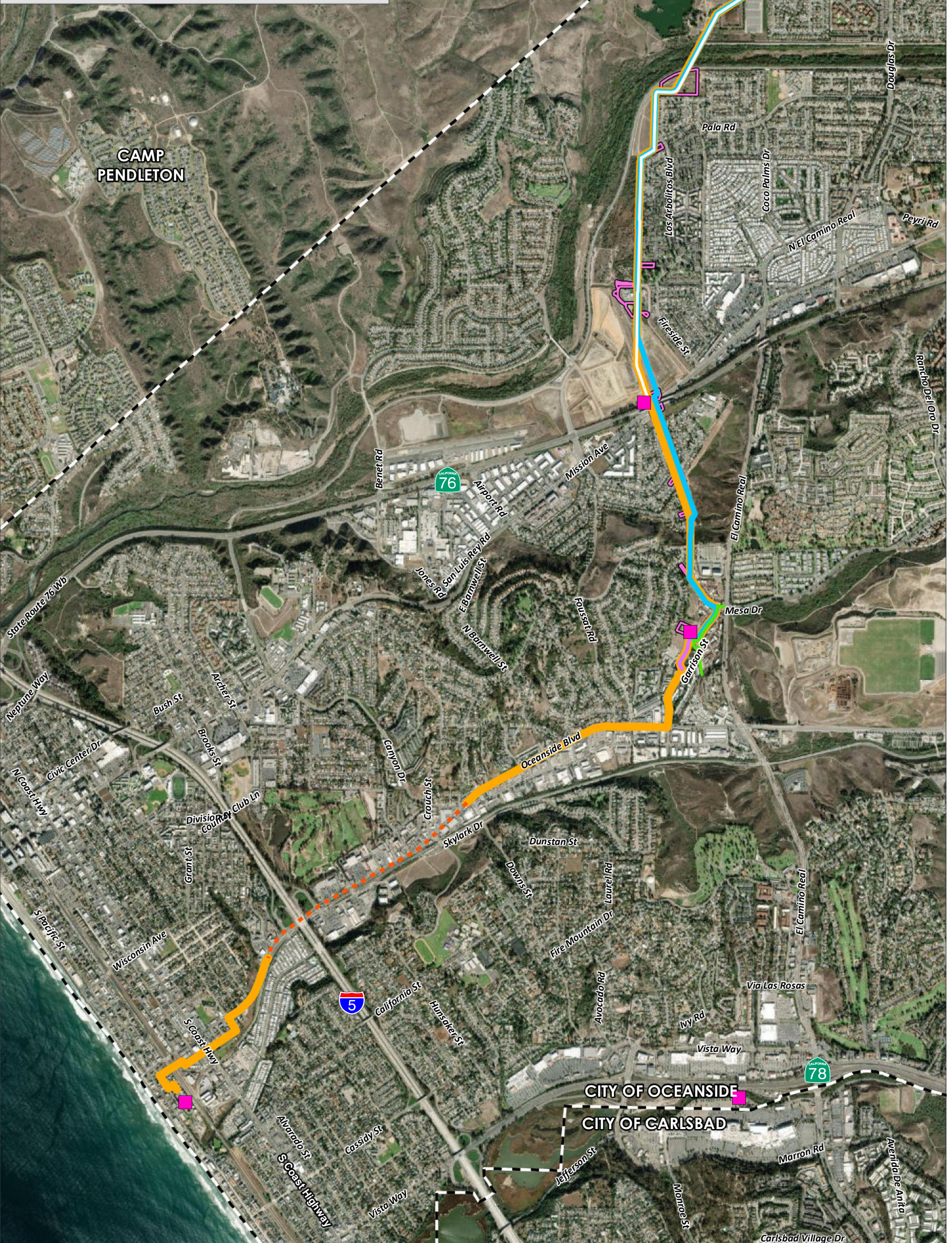
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Source: Base Map Layers (SanGIS, 2016)

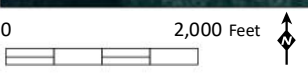


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- Oceanside Mesa Garrison Lift Station
- Land Outfall Replacement
- Existing Land Outfall (not proposed for replacement)
- Gravity Sewer Main to Oceanside Mesa Garrison Lift Station
- Mission Avenue Lift Station Force Main Replacement
- Oceanside Mesa Garrison Force Main
- Oceanside Mesa Garrison Force Main Extension
- Potential Staging and Access



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Source: Aerial (Maxar, 2023).