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4.12 NOISE

Would the Proposed Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
e) If located within an airport land use plan or within two miles of a public airport or public use airport for which such a plan has not been adopted, would the project result in exposure of persons residing or working in the project area to excessive noise levels?				✓
f) If located within the vicinity of a private airstrip, would the project result in exposure of persons residing or working in the project area to excessive noise levels?				✓

4.12.0 Introduction

This section assesses the potential noise impacts associated with construction and operation and maintenance (O&M) of San Diego Gas & Electric Company's (SDG&E's) TL674A Reconfiguration & TL666D Removal Project (Proposed Project). Although some temporary impacts will result during construction, the potential noise impacts will be less than significant with the implementation of SDG&E's Project Design Features and Ordinary Construction Restrictions, as described in Chapter 3 – Project Description, and one Proposed Project-specific applicant-proposed measure (APM). The continued O&M of the Proposed Project will not result in any impact from noise.

4.12.1 Methodology

Information regarding existing noise and vibration sources and standards was obtained from federal, state, regional, and local literature reviews to establish the noise standards for the Proposed Project location. The evaluation of potential noise impacts from the Proposed Project included the following:

- analyzing existing noise contours and available data for the Proposed Project route,
- conducting reconnaissance-level surveys and characterizing the existing noise environment,
- calculating noise generation from the anticipated construction equipment based on noise levels from established literature and regulatory guidance, and
- examining typical noise levels resulting from construction and O&M activities.

This noise analysis focuses on the construction of the Proposed Project which will require the use of heavy equipment and helicopters.

4.12.2 Existing Conditions

Noise is defined as unwanted sound. The unit of noise measurement is the decibel (dB), which measures the energy of the sound. Because the human ear is not uniformly sensitive to all noise frequencies, the A-weighted frequency scale (dBA) was devised to correspond with the ear's sensitivity. A zero-decibel sound corresponds to the lowest sound level that the healthy, unimpaired human ear can detect under controlled conditions. Sound levels in dB are calculated on a logarithmic basis using the ratio of the measured sound pressure divided by a standardized, reference pressure (20 μ Pascals). Each 10 dB increase in sound level is perceived as an approximate doubling of loudness.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-average or energy-equivalent sound/noise descriptor is abbreviated as " L_{eq} ." An hour is the most common time period over which energy-average sound is measured, but it can be measured over any duration (and the duration should be specified when the L_{eq} level is reported). Alternately, varying sound levels can be described by their statistical distribution over some fraction of a given observation period. These statistical sound levels are typically abbreviated as " L_n ." For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. That is, the noise level exceeds this level half of the time, and the noise level is less than this level half of the time. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Sensitivity to noise is subjective and varies from person to person, with the particular setting, and with the time of day. Sensitivity to noise typically increases during the evening and nighttime hours, when excessive noise can interfere with at-home activities and the ability to sleep. To account for these day/evening/night differences in sensitivity, 24-hour descriptors have been developed that incorporate artificial noise penalties, which are added to quiet-time noise events.

The Day/Night Average Sound Level (L_{dn}) is a measure of the cumulative noise exposure in a community, with a 10-dB penalty applied to nighttime (i.e., 10:00 p.m. to 7:00 a.m.) noise levels. A similar 24-hour metric is the Community Noise Equivalent Level (CNEL), which extends the sensitivity adjustment beyond the L_{dn} by also applying a 5-dB addition to noise levels in the evening hours (7:00 p.m. to 10:00 p.m.).

Regulatory Setting

Federal

No federal noise standards directly regulate noise from operation of electrical power lines and substation facilities. However, in 1974, the United States (U.S.) Environmental Protection Agency (EPA) established guidelines for noise levels, below which no reason exists to suspect that the general population will be at risk from any of the identified effects of noise. The EPA guidelines include the following:

- an $L_{eq}(24)$ that is less than or equal to 70 dBA to protect against hearing loss;¹
- an L_{dn} that is less than or equal to 55 dBA to protect against activity interference and annoyance in residential areas, farms, and other outdoor areas where quiet is a basis for use;
- an $L_{eq}(24)$ that is less than or equal to 55 dBA to protect against outdoor activity interference where limited time is spent, such as school yards and playgrounds;
- an L_{dn} that is less than or equal to 45 dBA to protect against indoor activity interference and annoyance in residences; and
- an $L_{eq}(24)$ that is less than or equal to 45 dBA to protect against indoor activity interference in school yards.

These levels are not standards, criteria, regulations, or goals, but are defined to protect public health and welfare with an adequate margin of safety, and to provide guidelines for implementing noise standards locally. The federal government has passed various general laws to regulate and limit noise levels, as identified in the following subsections.

Noise Pollution and Abatement Act of 1970

The Noise Pollution and Abatement Act of 1970 established the Office of Noise Abatement and Control (ONAC) within the EPA, and authorized the ONAC to conduct a full and complete investigation of noise and its effect on public health and welfare. The investigation was conducted to identify noise sources; projected noise levels; and effects of noise on persons, animals, and property.

¹ The human ear is not uniformly sensitive to all sound frequencies; therefore, the A-weighting scale has been devised to correspond with the human ear's sensitivity. The A-weighting scale uses the specific weighting of sound pressure levels from about 31.5 hertz to 16 kilohertz for determining the human response to sound.

In 1981, the EPA concluded that noise issues were best handled at the state or local government level. As a result, the EPA phased out the ONAC's funding in 1982 as part of a shift in the federal noise control policy to transfer the primary responsibility of regulating noise to state and local governments. However, the Noise Control Act of 1972 and the Quiet Communities Act of 1978, which are described in the following sections, were not rescinded by Congress and remain in effect today.

Noise Control Act of 1972

The Noise Control Act of 1972 was the first comprehensive statement of national noise policy. It declares, "It is the policy of the U.S. to promote an environment for all Americans free from noise that jeopardizes their health or welfare."

Quiet Communities Act of 1978

The Noise Control Act was amended by the Quiet Communities Act of 1978 to promote the development of effective state and local noise control programs, to provide funds for noise research, and to produce and disseminate educational materials to the public on the harmful effects of noise and ways to effectively control it. By 2002, federal agencies (e.g., the Department of Transportation, Department of Labor, Federal Railroad Administration, and the Federal Aviation Administration [FAA]) developed their own noise control programs, with each agency setting its own criteria.

Occupational Health and Safety Act of 1970

This act covers all employers and their employees in the 50 states, the District of Columbia, Puerto Rico, and other U.S. territories. Administered by the Occupational Health and Safety Administration (OSHA), the act assigns OSHA two regulatory functions—setting standards and conducting inspections to ensure that employers are providing safe and healthful workplaces. OSHA standards may require that employers adopt certain practices, means, methods, or processes that are reasonably necessary and appropriate to protect workers on the job. Employers must become familiar with the standards that are applicable to their establishments and eliminate hazards. This act included a regulation for worker noise exposure at 90 dBA over an eight-hour work shift. Areas where exposure exceeds 85 dBA must be designated and labeled as high-noise-level areas, and hearing protection is required.

Federal Aviation Administration

The FAA establishes 65 dB CNEL as the noise standard associated with aircraft noise measured at exterior locations in noise-sensitive land uses² (NSLUs). This standard is also generally applied to railroad noise.

Federal Transit Administration

The Federal Transit Administration, under the Department of Transportation (DOT), created a noise and vibration impact assessment manual. It provides guidance for evaluating construction,

² NSLU is defined as any residence, hospital, school, hotel, resort, library, or any other facility where quiet is an important attribute of the environment.

roadway, and railway noise sources. The manual also presents techniques for predicting and assessing potential noise and vibration impacts, primarily based on the receptor land use.

State

California Noise Control Act

The California Noise Control Act states that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also recognizes that continuous and increasing bombardment of noise exists in urban, suburban, and rural areas. This act declares that the State of California has the responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise.

California Noise Insulation Standards

The California Noise Insulation Standards were adopted in 1974 by the California Commission on Housing and Community Development, which was meant to establish noise insulation standards for multi-family residential buildings. This document establishes standards for interior room noise that is attributable to outside noise sources. The regulations also specify that acoustical studies must be prepared whenever a residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source; and where such noise source or sources create an exterior CNEL (or L_{dn}) of 60 dB or greater. 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 dB. Although the California Noise Insulation Standards do not apply to the Proposed Project, it sets an interior noise standard for multi-family residential buildings.

California Department of Transportation- and Construction-Induced Vibration Guidance

This document provides practical guidance to California Department of Transportation (Caltrans) engineers, planners, and consultants who must address vibration issues associated with the construction and O&M of Caltrans projects. Continuous or frequent intermittent vibration sources, such as impact pile drivers, are significant when their peak particle velocity (PPV) exceeds 0.1 inch per second. More specific criteria for human annoyance have been developed by Caltrans and will be used to evaluate potential Proposed Project vibration sources. Table 4.12-1: Human Response to Transient Vibration lists Caltrans’ thresholds of perception.

Table 4.12-1: Human Response to Transient Vibration

Human Response	PPV (inches/second)
Severe	2.0
Strongly Perceptible	0.9
Distinctly Perceptible	0.24
Barely Perceptible	0.035

Source: Caltrans, 2013

Local

The Proposed Project is not subject to local discretionary regulations because the California Public Utilities Commission has exclusive jurisdiction over the siting, design, and construction of the Proposed Project. The following analysis of local regulations related to noise is provided for informational purposes. Airport Land Use Compatibility Plans are discussed in Section 4.10 Land Use and Planning, and safety concerns around airports are discussed in Section 4.8 Hazards and Hazardous Materials.

Each local government outlines requirements for noise abatement and control in its general plan and municipal code. The general plan typically sets overall goals and objectives, while the municipal code sets specific sound limits. The relevant standards and policies are included in the subsections that follow.

City of San Diego General Plan

The City of San Diego General Plan includes a Noise Element—the purpose of which is to protect people living and working in the City of San Diego from excessive noise. The Noise Element provides goals and policies to guide compatible land uses and the incorporation of noise attenuation measures for new uses to protect people living and working in the City of San Diego from an excessive noise environment.

The City of San Diego Noise Element contains land use noise compatibility guidelines to inform decision-making for new land uses and the potential impacts of noise generation on existing land uses in the surrounding area. The City of San Diego’s noise compatibility guidelines consider new uses generating noise in excess of 65 dBA to be unacceptable near community and neighborhood parks, single-family residential uses, and hospitals and other institutional uses.

The following policy contained within the Noise Element applies to construction of the Proposed Project:

- NE-G.1 Implement limits on the hours of operation for non-emergency construction and refuse vehicle and parking lot sweeper activity in residential areas and areas abutting residential areas

City of San Diego Noise Ordinance

The City of San Diego Noise Ordinance (Chapter 5, Article 9.5, Division 4 of the City of San Diego Municipal Code) establishes prohibitions for disturbing, excessive, or offensive noise and contains provisions (e.g., sound level limits) for the purpose of securing and promoting public health, comfort, safety, peace, and quiet. Limits, as specified by land use, are provided in Table 4.12-2: City of San Diego Noise Limits. When two adjacent properties each have different zone classifications, the average of the two sound level limits is used. The Noise Ordinance prohibits the creation of any noise that exceeds the applicable limits of the Noise Ordinance at any point on or beyond the boundaries of the property where the sound is produced. Fixed-location public utility distribution or power line facilities located on or adjacent to a property line are subject to these noise level limits when measured at or beyond six feet from the boundary of the property where the equipment is located.

Table 4.12-2: City of San Diego Noise Limits

Land Use Zone	Time of Day	One-Hour Average Sound Level (dB)
Single-Family Residential	7:00 a.m. to 7:00 p.m.	50
	7:00 p.m. to 10:00 p.m.	45
	10:00 p.m. to 7:00 a.m.	40
Multi-Family Residential (Up to a maximum density of 1:2,000)	7:00 a.m. to 7:00 p.m.	55
	7:00 p.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
All Other Residential	7:00 a.m. to 7 p.m.	60
	7:00 p.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 7:00 p.m.	65
	10:00 p.m. to 7:00 a.m.	60
	7:00 p.m. to 10:00 p.m.	60
Industrial or Agricultural	Anytime	75

Source: City of San Diego, 2010

Construction is not allowed as follows:

- between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day,
- on legal holidays as specified in Section 21.04 of the City of San Diego Municipal Code, or
- on Sundays.

A permit can be obtained from the Noise Abatement and Control Administrator if construction activities must be conducted outside of these previously listed timeframes. In addition, it is prohibited to conduct any construction activity that results in an average sound level of 75 dB or greater between 7:00 a.m. and 7:00 p.m. at or beyond the property lines of any property zoned residential. Emergency work is exempted from the construction noise limits.

City of Del Mar Community Plan

The City of Del Mar’s 1976 Community Plan, the 1985 amendments, and the 2002 resolution were reviewed for noise policies that are relevant to the Proposed Project. None were identified within these plans.

City of Del Mar Municipal Code

Chapter 9.20 of the City of Del Mar Municipal Code establishes systematic, regulatory controls on noise within the city. Sound level limits are provided in Table 4.12-3: City of Del Mar Noise Limits. Section 9.20.050 of the City of Del Mar Municipal Code limits the hours of construction to 7:00 a.m. to 7:00 p.m. Monday through Friday and 9:00 a.m. to 7:00 p.m. on Saturday. No construction work is allowed on Sundays or City holidays. Section 9.20.050 also limits noise levels of construction equipment, which cannot exceed an average sound level of 75 dBA on property zoned or used for residential purposes. The City of Del Mar Municipal Code does not contain any regulations pertaining to vibration.

Table 4.12-3: City of Del Mar Noise Limits

Land Use Zone	Time of Day	One-Hour Average Sound Level (dB)
R1-5, R1-5B, R1-10, R1-10B, R-2, R1-14, R1-40, RM-East, RM-West, RM-Central, RM-South, OS Overlay	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	40
NC, RC, CC, PC, BC, VC	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	50
RR	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	50

Source: City of Del Mar, 1997

Existing Noise Sources

The dominant ambient noise sources in the Proposed Project area are transportation-related. Heavy on-road traffic from Interstate 5 and the existing adjacent road network—including Via De La Valle, Jimmy Durante Boulevard, and Del Mar Heights Road—account for a majority of the existing ambient noise.

Noise-Sensitive Receptors

The Proposed Project area is dominated by residential and commercial land use types of rural and suburban development patterns. The nearest noise-sensitive receptors along the Proposed Project route are residences, schools, one hospital, and several recreation areas that are adjacent to the Proposed Project's right-of-way (ROW). Table 4.12-4: Sensitive Noise Receptors within 500 Feet of the Proposed Project provides a summary of the types of noise-sensitive receptors located within 500 feet of the Proposed Project. A distance of 500 feet from the Proposed Project was chosen to adequately capture those nearby sensitive receptors that could be exposed to construction noise from the Proposed Project and to correspond to the typical distance used for noticing property owners in the event of an expected exceedance of the noise standards adopted by the applicable jurisdiction. Section 4.14 Public Services and 4.15 Recreation provide additional detail on locations and distances of facilities from the Proposed Project.

Table 4.12-4: Sensitive Noise Receptors within 500 Feet of the Proposed Project

Receptor Type	Approximate Number of Sensitive Receptors³	Distance of Nearest Receptor to Proposed Project Route (feet)
Schools	2	0 (Crossed)
Hospitals	1	4,000
Places of Worship	2	33
Parks/Outdoor Recreation Areas	12	0 (Crossed)

Sources: Google, 2015

4.12.3 Impacts

Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act Guidelines. Impacts to noise will be considered significant if the Proposed Project:

- Results in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Results in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels
- Results in a substantial permanent increase in ambient noise levels in the Proposed Project vicinity above levels existing without the Proposed Project
- Results in a substantial temporary or periodic increase in ambient noise levels in the Proposed Project vicinity above levels existing without the Proposed Project
- Lies within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and exposes people residing or working in the Proposed Project area to excessive noise levels as a result
- Lies in the vicinity of a private airstrip and exposes people residing or working in the Proposed Project area to excessive noise levels as a result

The construction and operational noise thresholds of significance for the Proposed Project components have been derived from the applicable regulatory documents discussed previously in Section 4.12.2 Existing Conditions. Specific significance criteria for construction and O&M noise levels are presented in the subsections that follow.

³ The approximate number of residential sensitive receptors is based on the number of parcels zoned for each land use type within 300 feet of the Proposed Project's temporary ROW.

Question 4.12a – Noise in Excess of Standards

Construction – Less-than-Significant Impact

Construction of the Proposed Project is expected to take approximately 12 months to complete. Construction will require the temporary use of noise-generating equipment. As described in Chapter 3 – Project Description, construction will typically occur during normal work hours from Monday through Saturday. The City of San Diego noise ordinance prohibits construction between 7:00 p.m. of any day and 7:00 a.m. the following day, on legal holidays, and on Sundays. Similarly, the City of Del Mar Municipal Code limits construction to 7:00 a.m. to 7:00 p.m. Monday through Friday and 9:00 a.m. to 7:00 p.m. on Saturday. Construction in the City of Del Mar is prohibited on Sundays and on city holidays. The Proposed Project will typically be consistent with these standards.

In limited circumstances, construction may be required outside of the hours permitted by the local ordinances. This may occur as a result of required electrical clearances granted by the California Independent System Operator, conditions within agency permits and authorizations (e.g., encroachment permits), or efforts to safely restore electrical service to customers. As a Project Design Feature and Ordinary Construction Restriction, SDG&E will meet and confer with the City of San Diego and the City of Del Mar, as needed, regarding activities that will be conducted outside of the hours permitted by the relevant noise ordinances.

The construction equipment to be used will be similar to equipment used during typical public works projects. Typical noise levels from these construction sources are provided in Table 4.12-5: Typical Construction Sound Levels and use a reference distance of 50 feet.

Due to the linear nature of the Proposed Project, where construction will proceed from one location to the next, each construction area can be considered separate when evaluating construction noise. As a result, individual noise analyses have been prepared for each type of construction activity, as described in the subsections that follow.

Overhead Power Line Construction/Removal

The Proposed Project includes the removal of existing overhead conductor, removal and topping of existing power line poles, and the installation of new power line poles. Construction at each of these sites may include clearing vegetation, excavation, foundation installation (as needed), pole installation, and wire stringing. In locations where existing wood poles will be completely removed, the void left by the pole base will backfilled with soil, except in the San Dieguito Lagoon, Los Peñasquitos Lagoon, and Torrey Pines State Natural Reserve Extension.

It is important to note that the equipment presented will not generally be operated continuously, nor will the equipment always operate simultaneously. There will also be periods when no equipment is operating and noise will be at ambient levels. Typical usage factors for this type of construction equipment were applied to the typical sound levels in order to determine at the average sound level that may occur during a typical eight-hour workday. The usage factors account for periods when equipment is not operated at full throttle and/or is not used for an entire

Table 4.12-5: Typical Construction Sound Levels

Equipment	Maximum Noise Level at 50 feet (dBA)
Air Compressor	80
Aerial Bucket Truck	75
Backhoe	80
Crane	81
Drill Rig/Truck-Mounted Augur	85
Grader	85
Helicopter (at takeoff)	90
Mower	88
Portable Generator	73
Rock Drill/Rock-Drilling Equipment	81
Wire-Pulling Machine	80
Backhoe	80
Concrete Saw	90
Crane	81
Excavator	81
Jackhammer	85
Paver	77
Truck (Dump Truck, Flatbed Truck)	84
Vacuum Truck	85

Sources: BBN, 1971, 1977; Federal Highway Administration (FHWA), 2006; TRC Environmental, 2001; Ebasco, 1989.

Notes: Noise levels listed are for typical equipment used during construction, and not all potential equipment used for the Proposed Project is listed herein. The equipment used is considered to be representative of the equipment that will be used during construction of the Proposed Project.

eight-hour workday. Table 4.12-6: Typical Eight-Hour Average Construction Sound Levels provides the construction sound levels, at various distances from the planned construction activities, and adjusted to reflect a typical eight-hour construction day.

As described in Section 4.12.2 Existing Conditions, the City of San Diego and City of Del Mar limit construction noise to less than 75 dBA at adjoining residential property lines. Due to the proximity of TL666D to residences, construction activities between Poles 24 and 49, Poles 52 and 71, and Poles 77 and 81 will occur within 50 feet of approximately 84 residential parcel lines. As shown in Table 4.12-6: Typical Eight-Hour Average Construction Sound Levels, it is possible that construction sound levels may exceed the 75-dBA limit in these locations. Work in the proximity of any single general location on the power line will likely last between a few hours when topping or removing an existing pole to a few days to one week when installing new poles or removing/installing new conductor. Therefore, single receptors will not be exposed to significant noise levels for extended periods of time.

In the event that construction noise is anticipated to exceed 75 dBA at adjacent residential properties, SDG&E will meet and confer with the City of San Diego and/or the City of Del Mar to discuss temporarily deviating from the local noise standards. This meet and confer process has been included as a Project Design Feature and Ordinary Construction Restriction in Chapter 3 – Project Description. If requested by the local agency, SDG&E will evaluate the potential relocation of residents. To further reduce noise levels at the surrounding residential parcels, SDG&E evaluated the use of temporary noise barriers. These barriers were determined to be infeasible due to the reliance on mobile construction equipment to complete the pole removal, installation, and topping activities. To provide attenuation to the surrounding residences while maintaining safe clearances for mobile equipment, any temporary noise barriers will be placed outside of the planned construction areas. In addition, construction at most of the pole locations will last less than one day. The setup and removal of a temporary noise barrier will result in construction crews spending significant additional time in each location, delaying construction and increasing the noise exposure to these residents. As a result, the use of temporary noise barriers was determined to be infeasible. Due to the short-term nature of this work (with construction typically lasting less than one day in each location), and the implementation of ordinary construction restrictions, impacts associated with overhead power line construction and removal will be less than significant.

Underground Power Line Construction

As described in Chapter 3 – Project Description, three segments of new underground power line—the TL674A reconfiguration, C510 conversion, and C738 conversion—will be installed as part of the Proposed Project. As shown in Table 4.12-6: Typical Eight-Hour Average Construction Sound Levels, the concrete saw used to cut existing pavement prior to excavating the required trenches will be the loudest piece of equipment utilized during construction of the underground segments. This saw will generate an eight-hour average noise level of 75 dBA at a distance of approximately 125 feet. As a result, any residences located within 125 feet of these underground segments may be temporarily exposed to noise levels in excess of the local ordinances. Of the three underground segments, the C510 conversion is the only one with residential parcels (approximately 12) located within 125 feet of the proposed alignment.

Table 4.12-6: Typical Eight-Hour Average Construction Sound Levels

Equipment	Eight-Hour Noise Level from Source (dBA)				
	50 feet	100 feet	200 feet	500 feet	1,000 feet
Air Compressor	73	67	61	53	46
Aerial Bucket Truck	73	67	61	53	46
Backhoe	76	70	64	56	49
Crane	76	70	64	56	49
Drill Rig/Truck-Mounted Augur	78	72	66	58	51
Grader	75	69	63	55	48
Mower	75	69	63	55	48
Portable Generator	70	64	58	50	43
Rock Drill/Rock-Drilling Equipment	74	68	62	54	47
Backhoe	74	68	62	54	47
Concrete Saw	83	77	71	63	56
Crane	73	67	61	53	46
Excavator	77	71	65	57	50
Jackhammer	78	72	66	58	51
Loader	75	69	63	55	48
Paver	74	68	62	54	47
Truck (Dump Truck, Flatbed Truck)	76	70	64	56	49
Vacuum Truck	81	75	69	61	54
Wire-Pulling Machine	74	68	62	54	47

As described previously and as part of SDG&E’s Project Design Features and Ordinary Construction Restrictions, SDG&E will meet and confer with the City of San Diego and the City of Del Mar to discuss temporarily deviating from the local noise standards and evaluate the potential relocation of residents. As described previously, the use of temporary noise barriers for this Proposed Project has been determined to be infeasible. The underground construction process along the C510 conversion is anticipated to last approximately seven weeks and will progress in a linear fashion at a pace of up to 500 feet per day; therefore, each of the 12 residences will be exposed to construction noise for a limited period of time. With the implementation of the identified ordinary construction restrictions, impacts will be less than significant.

Staging Areas/Fly Yards

In addition to construction areas used to install and remove the overhead and underground power line facilities, four staging areas/fly yards will be used during construction of the Proposed Project. These sites will be used for refueling construction vehicles, pole assembly, open storage of material and equipment, trailers, portable restrooms, and construction personnel parking. These sites may also be used for the staging and refueling of helicopters during the conductor installation/removal processes and during pole removal and topping activities. Noise generated at these sites will be intermittent, and typically associated with periodic movement of equipment in and out of the staging area and helicopter operation. The staging areas/fly yards and the distance to the nearest residential parcel line for each are listed in Table 4.12-7: Anticipated Staging Area/Fly Yard Noise Levels.

Table 4.12-7: Anticipated Staging Area/Fly Yard Noise Levels

Staging Area/Fly Yard	Approximate Distance and Direction to Closest Residential Parcel Line (feet)	Anticipated Eight-hour Average Noise Level (dBA)
Pumpkin Patch	450 south	70.9
Del Mar Fairgrounds	2,400 southwest	56.4
Del Mar Heights	420 east	71.5
Torrey Pines State Beach	640 northeast	67.9

To evaluate the potential impacts associated with the use of these locations, the eight-hour average noise levels were calculated at the nearest residential parcel line for each staging area/fly yard. This calculation assumed, conservatively, that helicopter use could occur at the edge of the construction area using a typical helicopter reference noise level of 90 dBA at 50 feet, as indicated in Table 4.12-5: Typical Construction Sound Levels. The resulting average noise levels are presented in Table 4.12-7: Anticipated Staging Area/Fly Yard Noise Levels. As shown, noise levels at the adjacent residences will be below the 75-dBA limit presented in the local noise ordinances, and impacts will be less than significant.

Operation and Maintenance – No Impact

O&M activities for the Proposed Project will continue to be conducted in the same manner as they have been prior to construction of the Proposed Project. As described in Chapter 3 – Project Description, O&M of the proposed underground duct banks within Via De La Valle will be installed parallel to existing facilities where O&M activities are currently being conducted. The removal of an approximately six-mile segment of TL666D will eliminate all future O&M activities associated with these facilities. The conversion of C510 and C738 will eliminate O&M requirements associated with approximately 4,530 feet of existing overhead distribution line. Although these conversions will introduce approximately 4,230 feet of new underground duct bank, SDG&E currently owns and operates existing underground distribution facilities in the vicinity of these Proposed Project components. Based on the removal of existing overhead facilities and the installation of Proposed Project components in areas already covered by existing O&M activities, post-construction O&M requirements in the Proposed Project area will be reduced, and no new impacts will occur.

Question 4.12b – Groundborne Vibration and Noise

Construction – Less-than-Significant Impact

Construction activities can generate varying degrees of ground-borne vibration, depending on the construction procedure and the construction equipment used. Operating construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. Table 4.12-1: Human Response to Transient Vibration states that vibrations become perceptible by humans at an amplitude of approximately 0.035 inch per second.

Table 4.12-8: Typical Construction Equipment Vibration Levels provides vibration levels for some construction equipment (or representative equipment) expected to be utilized for the Proposed Project at a reference distance of 25 feet, which is approximately the closest any one single residence will be to any new pole location or trenching activities.

Table 4.12-8: Typical Construction Equipment Vibration Levels

Equipment	PPV at 25 Feet (inches per second)
Caisson Drill (drilling rig)	0.089
Loaded Truck (flatbed)	0.076

Source: FHWA, 2006

Notes: Vibration levels listed are for typical equipment used during construction, and not all potential equipment used for the Proposed Project is listed herein. The equipment used is considered to be representative of the equipment that will be used during construction of the Proposed Project.

Because of the close proximity of some construction activities (e.g., new pole installation and material delivery/removal) to residential receptors, construction could potentially produce vibration levels at approximately 0.09 inch per second PPV. At these levels, the vibration will exceed the threshold for perceptibility by humans and could be considered as potentially significant. However, drilling associated with new pole installation will be limited to approximately one day at each of the eight new pole locations. In addition, as described in Table

4.12-7: Anticipated Staging Area/Fly Yard Noise Levels, there are no receptors located in close proximity to any of the proposed staging areas where loaded truck traffic is expected to be concentrated. Further, construction will take place during daytime hours, when most people will be away from their homes (i.e., the least sensitive portion of the day). Because of the short-term vibration exposure to these activities and due to the fact that these activities will take place during the least sensitive time of the day, the vibration annoyance from the construction will be less than significant.

Operation and Maintenance – No Impact

With the removal of TL666D, all previously occurring O&M activities required for this facility, and thus the associated vibration, will cease to occur. In these locations, there will be a reduction in permanent vibration. As described in response to Question 4.12a, O&M activities will continue to be conducted following construction for the remaining Proposed Project components. Because these activities are ongoing and will not be changed as a result of Proposed Project construction, there will be no change in vibration levels and there will be no impact.

Question 4.12c – Substantial Permanent Ambient Noise Increases

Construction – No Impact

Construction activities will occur over a finite period; therefore, no permanent increase in noise will occur, and there will be no impact.

Operation and Maintenance – No Impact

The Proposed Project will not involve the construction of any new noise-generating facilities. The removal of TL666D and the conversion of portions of TL674A, C510, and C738 from an overhead to underground configuration will result in a reduction in existing corona noise as underground power line facilities are not audible. As a result, there will be no impact.

Question 4.12d – Substantial Temporary or Periodic Ambient Noise Level Increases

Construction – Less-than-Significant Impact

As described in response to Question 4.12a, construction activities will typically comply with the relevant local noise ordinances from the City of San Diego and City of Del Mar. There may be some instances during pole installation/removal and underground duct bank construction where eight-hour average noise levels may exceed 75 dBA at nearby residences and other noise-sensitive receptors (e.g., parks and other recreational uses). Because of the linear nature of the Proposed Project, construction at each location will range from a few hours to up to one week at a time. Due to the short-term nature of the construction at each location, the number of residents that will be exposed to noise levels in excess of 75 dBA will be limited, and SDG&E will meet and confer with the local agencies to discuss additional measures that may be implemented to reduce impacts. As a result, impacts will be less than significant.

The Proposed Project will also utilize workspaces within or directly adjacent to two schools—Del Mar Hills Elementary School and Del Mar Heights School. The majority of these workspaces will be used to top or remove existing TL666D poles. Heavy equipment, including bucket trucks and aerial lifts, will be used in these locations. In addition, a staging area/fly yard

will be located within the athletic field at Del Mar Heights School. This landing zone will require construction crews to utilize the school’s parking lot and internal roadways for access. These activities could generate temporary noise levels in excess of 75 dBA, which has the potential to disrupt school activities. To ensure that these schools are not disrupted during construction, SDG&E will implement APM-PS-01, which will require that all construction activities be coordinated with schools to minimize potential impacts from noise. With the implementation of this APM, impacts will be less than significant.

Operation and Maintenance – No Impact

As described in response to Question 4.12a, O&M activities will continue to be conducted following construction. Because these activities are ongoing and will not be changed as a result of Proposed Project construction, there will be no change in periodic ambient noise levels, and no impact will occur.

Question 4.12e – Air Traffic Noise from Public Airports – No Impact

The Proposed Project is not located within two miles of any public airports. The nearest public airport—McClellan-Palomar Airport—is located approximately 10.4 miles southeast of the Proposed Project. As a result, the Proposed Project will not expose residents or workers in the Proposed Project area to excessive noise levels, and there will be no impact.

Question 4.12f – Air Traffic Noise from Private Airstrips – No Impact

The Proposed Project is not located within two miles of any private airstrips. The nearest private airport—Marine Corps Air Station Miramar—is located approximately 6.25 miles southeast of the Proposed Project. As a result, the Proposed Project will not expose residents or workers in the Proposed Project area to excessive noise levels, and there will be no impact.

4.12.4 Applicant-Proposed Measures

SDG&E incorporated APM-PS-01 into the Proposed Project to avoid or minimize potential impacts from noise. No additional APMs are proposed.

4.12.5 References

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