

## 2.11 Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>11. NOISE—Would the project result in:</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located 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, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 2.11.1 Setting

#### Noise Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).<sup>1</sup>

### **Noise Exposure and Community Noise**

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. In fact, community noise varies continuously with time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

- $L_{eq}$ : The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The  $L_{eq}$  is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).
- $L_{max}$ : The instantaneous maximum noise level measured during the measurement period of interest.
- $L_x$ : The sound level that is equaled or exceeded x percent of a specified time period. The  $L_{50}$  represents the median sound level.
- DNL: The energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises. DNL is sometimes referred to as  $L_{dn}$ .

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<sup>1</sup> All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

CNEL: Similar to the DNL, the Community Noise Equivalent Level (CNEL) adds a 5-dBA “penalty” for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to a 10-dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.

### ***Effects of Noise on People***

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual’s past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called “ambient noise” level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- a change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- a 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a *linear* scale: it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A *logarithmic* scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1, 10, 100, 1000, 10000, etc. doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion, hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

## Noise Attenuation

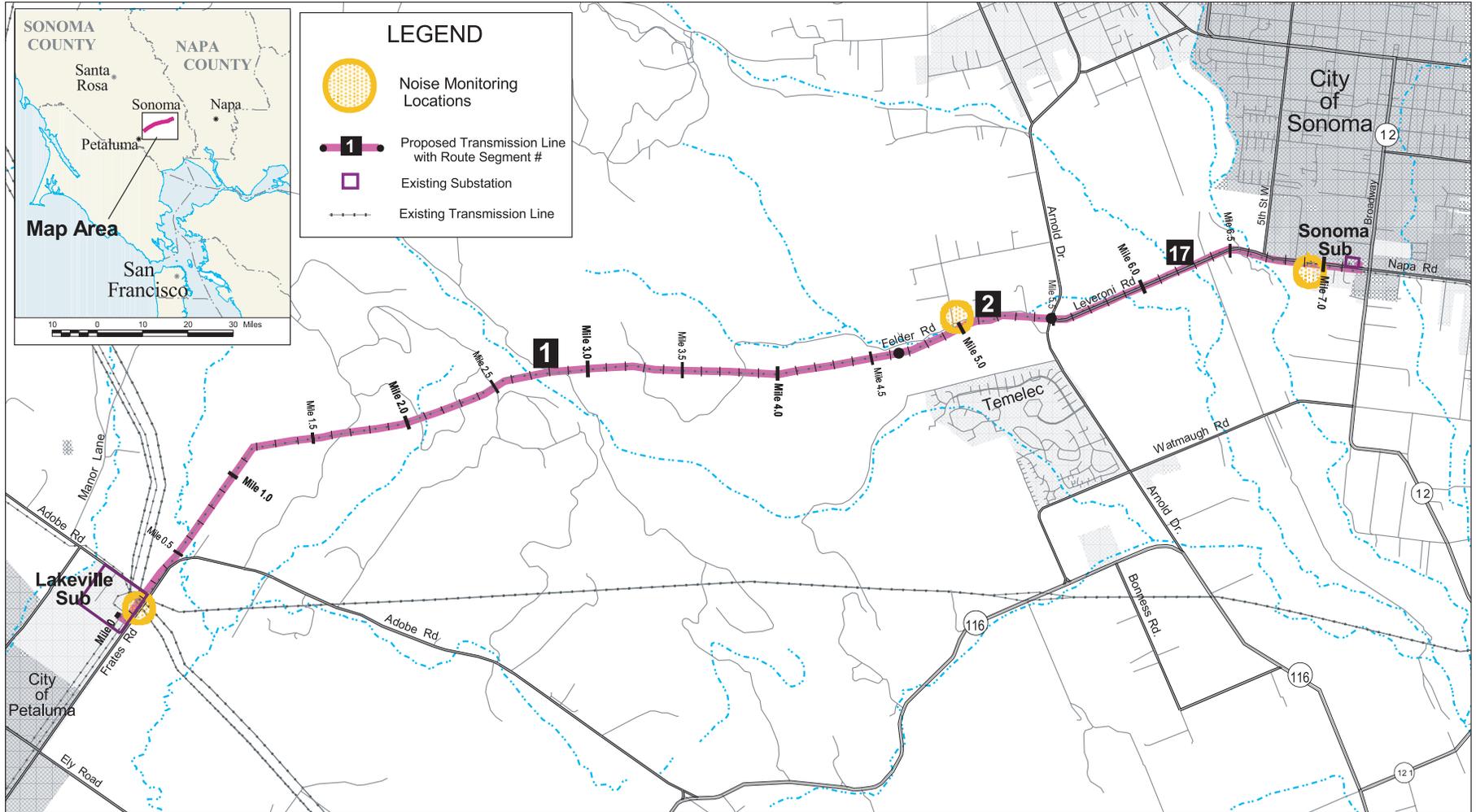
Stationary “point” sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 dBA to 7.5 dBA per doubling of distance from the source, depending upon environmental conditions (i.e., atmospheric conditions and noise barriers, either vegetative or manufactured, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles (a “line” source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling distance from the source (also dependent upon environmental conditions) (Caltrans, 1998). Noise from large construction sites (or a landfill with heavy equipment moving dirt and solid waste daily and trucks entering and exiting the main gate daily - activities similar to construction sites) would have characteristics of both “point” and “line” sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance.

## Existing Ambient Noise Environment

The project area encompasses an approximately 7.23-mile corridor of residential, agricultural, commercial and open space areas. The primary contributors to the project area’s noise environment include vehicle traffic on highways and city streets; airplane over flights; sounds emanating from residential neighborhoods, including voices, noises from household appliances, and radio and television broadcasts; and naturally occurring sounds such as wind and wind-generated rustling. Additional noise sources may include electrical and industrial devices and other man-made localized sources in the project area. Generally, intermittent short-term noises do not significantly contribute to longer-term noise averages.

Noise measurements were taken by PG&E at three locations in the project area to characterize the ambient noise environment along the transmission line route and at the substation sites. The measurements were taken during both weekend and weekday periods in September and October 2003. All measurements were taken for multiple 24-hour periods, and hourly average noise data were calculated for each measurement location. Long-term noise data were obtained using calibrated microphones and integrating sound level meters/statistical data loggers (Larson Davis, Models 820 and 700). Short-term noise measurements were obtained using a calibrated microphone and sound-level meter (Bruel and Kjaer, Type 2236), in conjunction with a digital audio tape recorder. Measurement locations were selected to best represent the typical noise environment along the alignment and at the two substations. In some cases, monitoring locations were also selected for ease and safety of access and the availability of PG&E-owned facilities and properties on which to mount long-term sound measuring devices, such as transmission poles and property line fences.

**Figure 2.11-1** shows the locations in the project area at which noise measurements were taken, and **Table 2.11-1** shows the results of those noise measurements. **Table 2.11-1** summarizes noise monitoring results in terms of the average equivalent noise level ( $L_{eq}$ ), minimum  $L_{eq}$ , and maximum  $L_{eq}$ ; day-night noise equivalent ( $L_{dn}$ ); and the statistical descriptors  $L_{50}$  and  $L_{90}$ . Values given in **Table 2.11-1** are representative of noise levels along the length of the route and at the Lakeville and Sonoma Substations. Noise measurements were taken at these locations during



SOURCE: EDW (2004)

Lakeville-Sonoma 115 kV Transmission Line Project / 204202 ■

**Figure 2.11-1**  
Noise Monitoring Locations

**TABLE 2.11-1  
NOISE MEASUREMENT RESULTS (dBA)**

<b>Area Represented (Segments and Substations)</b>	<b>Monitoring Location</b>	<b>Average Hourly (L<sub>eq</sub>)</b>	<b>Minimum Hourly (L<sub>eq</sub>)</b>	<b>Maximum Hourly (L<sub>eq</sub>)</b>	<b>Average (L<sub>50</sub>)</b>	<b>Average (L<sub>90</sub>)</b>	<b>DNL</b>
Segment 1 Lakeville Substation	Lakeville Substation	68.2	44.5	84.3	72.0	65.7	71.3
Segment 2	Felder Road	51.0	46.1	73.9	51.9	46.9	58.3
Segment 17 Sonoma Substation	Sonoma Substation	64.5	43.8	86.1	68.2	50.7	67.7

SOURCE: PG&E PEA (2004)

both weekend and weekday periods in September and October 2003. The measurements show that the baseline noise environment complies with applicable local noise standards discussed under the Regulatory Context below.

## Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive.

**Figures 1-4(a)** through **1-4(d)** in Chapter 1 show sensitive receptor land uses and residential and commercial developments in the project area. Over the length of the transmission route, some sensitive receptors lie as close as 45 feet from the transmission line corridor. The majority of the route, however, traverses agricultural and open space areas, where the project would have no impact on sensitive receptors. Though few sensitive receptors lie close to the transmission line route or substation locations, project construction would include materials transport and other activities in direct proximity to many additional sensitive receptors.

The Sonoma Substation is located within the City of Sonoma in a commercial/residential land use area. At this location, the nearest the sensitive receptors are people in the adjacent apartment building, hotel, and a business office located approximately 300 feet away.

The Lakeville Substation site is located off Frates Road in an agricultural and open space area. Measurements were taken at the substation entrance on Adobe Road. The nearest sensitive receptor is located more than 800 yards from the substation location.

## 2.11.2 Regulatory Context

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities. The City of Sonoma and the County of Sonoma have developed general plan policies, goals, and guidelines regarding the ambient noise environment, which would be applicable to the Proposed Project, as discussed below.

### Sonoma County

Goal NE-1 of the Sonoma County General Plan Noise Element is to “[p]rotect people from the harmful effects of exposure to excessive noise and to achieve an environment in which people and land uses may function without impairment from noise.” This goal aims to protect persons from existing or future excessive levels of noise that interfere with sleep, communication, relaxation, health or legally permitted use of property. Noise sensitive areas include residences, schools, hospitals, other medical care facilities and other uses deemed noise sensitive by the local jurisdiction.

To achieve this goal, the Noise Element contains the following policies that would be applicable to the Proposed Project:

- Policy NE-1a: Designate areas within Sonoma County as noise impacted if they are exposed to existing or projected exterior noise levels exceeding 60 dB  $L_{dn}$ , 60 dB CNEL, or the performance standards of Table NE-2 of the Noise Element shown below as **Table 2.11-2**.

**TABLE 2.11-2  
SONOMA COUNTY NOISE LEVEL PERFORMANCE STANDARDS**

Category	Maximum Exterior Noise Level Standards, dBA		
	Cumulative Duration of Noise Event in any one-hour period	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
1	30 - 60 minutes	50	45
2	15 – 30 minutes	55	50
3	5 – 15 minutes	60	55
4	1 – 5 minutes	65	60
5	0 – 1 minute	70	65

**NOTE:**

- If the ambient noise level exceeds the standard in Table NE-2, adjust the standard to equal the ambient level.
- Reduce the applicable standards in Table NE-2 by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.
- Reduce the applicable standards in Table NE-2 by 5 decibels if they exceed the ambient level by 10 or more decibels.

SOURCE: Sonoma County PRMD (1989)

- Policy NE-1b: Avoid noise sensitive land use development in noise impacted areas unless effective measures are included to reduce noise levels.
- Policy NE-1c: Control non transportation related noise from new projects such that the total noise level resulting from new sources and ambient noise shall not exceed the standards in Table NE-2 (**Table 2.11-2** in this Initial Study).
- Policy NE-1e: Establish building permit procedures to ensure that requirements based upon the acoustical analysis are implemented.
- Policy NE-1f: Require development projects which do not include or affect residential uses or other noise sensitive uses to include noise mitigation measures where necessary to maintain noise levels compatible with activities planned for the project site and vicinity.
- Policy NE-1g: Enforce the State Noise Insulation Standards and Chapter 35 of the Uniform Building Code concerning new multiple occupancy dwellings.
- Policy NE-1j: Encourage the California Highway Patrol to actively enforce sections of the California Vehicle Code relating to adequate vehicle mufflers and modified exhaust systems.

The General Plan Noise Element does not specifically address intermittent or short-term construction noises and the County currently does not have a noise control ordinance for short-term or long-term noise.

## City of Sonoma

The goal of the City of Sonoma General Plan Noise Element is to “[a]chieve noise compatibility between new and existing developments to ensure the continuation of the prevailing quiet country atmosphere that residents associate with living in Sonoma. Relevant policies contained in the Noise Element include:

- Policy 1: To achieve this, the following standards for maximum  $L_{dn}$  will apply to citywide development:
  - 45  $L_{dn}$  – For interior environments in all residential units (consistent with Title 24 standards)
  - 60  $L_{dn}$  – Exterior environments around all residential developments and outdoor public facilities
  - 65  $L_{dn}$  – Exterior environments around commercial and public buildings
  - 70  $L_{dn}$  – Exterior environments around industrial buildings.
- Policy 2: The city may impose more restrictive noise standards in neighborhood that may be sensitive to noise levels below the accepted State standards. (City of Sonoma, 1995)

The City Sonoma's Municipal Code 9.56.011 states that "no person, firm or corporation shall cause, or permit to be caused, any noise or sound which, by reason of its raucous or nerve wracking nature or intensity, disturbs the peace or comfort or is injurious to the health of any person or persons." The Code restricts construction activity to the hours of 8:00 a.m. to 7:00 p.m. local time during weekdays and weekends (City of Sonoma, 1986).

### 2.11.3 Noise Impacts and Mitigation Measures

Equipment noise during project construction is the primary concern in evaluating short-term noise impacts. During operation, noise from corona discharge along high-voltage transmission lines during wet conditions and noise from operation of additional circuit breakers at substations would contribute incrementally to the ambient noise environment.

Temporary impacts during construction are considered significant if they would substantially interfere with affected land uses. Substantial interference could result from a combination of factors including: the generation of noise levels substantially greater than existing ambient noise levels; construction efforts lasting over long periods of time; or construction activities that would affect noise-sensitive uses during the nighttime. For assessment of temporary construction noise impacts, "substantially greater" means more than three dBA (hourly  $L_{eq}$ , DNL, or CNEL) resulting in noise levels above 65 dBA- $L_{eq}$  in residential areas, or above 70 dBA- $L_{eq}$  in commercial areas, at the nearest sensitive receptor.

The project's operational impact on the ambient noise environment would be considered substantial if it would result in ambient noise levels above 60 dBA (DNL) if the existing noise environment is below 60 dBA. In areas where the existing ambient noise environment is already greater than 60 dBA, an ambient noise level increase of 3 dBA or more at a sensitive receptor would be considered substantial.

Evaluation of potential noise impacts from project construction and operation included reviewing relevant city and county noise standards and policies, characterizing the existing noise environment throughout the project area, and projecting noise from construction and operation of project facilities. Noise monitoring was conducted at three locations throughout the project area to accurately represent the area's ambient noise environment. Following the characterization of the project area noise environment, published construction-and operation-related noise data was used to determine construction and operational impacts. Impacts were assessed by comparing the published noise levels of construction equipment and operational activities to the ambient noise environment and significance criteria, based on applicable noise regulations.

- 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: *less than significant impact with mitigation incorporated.* See discussion under d).**

- d) **A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project: *less than significant impact with mitigation incorporated.***

### ***Proposed Project***

Potential noise impacts associated with project construction and operation include noise from construction equipment, corona discharge associated with high-voltage transmission lines, and operation of additional circuit breakers at the substations.

### **Construction**

The project would involve temporary noise sources associated with construction along the transmission line alignment and at the Lakeville and Sonoma Substations.

Construction of the transmission line would include installation of new tubular steel poles, installation of wood poles, removal of existing wood poles and conductor, topping of some existing wood poles, installation / removal of safety structures at road crossings, and stringing of new conductor for the 115 kV circuits. The majority of the transmission line construction activities would take place in open space and agricultural areas and vineyards, though some construction activities would be in and adjacent to residential areas. The entire alignment is expected to be constructed over a period of nineteen months while work at each of the substations would take fourteen months.

Construction noise sources are typically regulated on the local level through enforcement of noise ordinances, implementation of general plan policies, and imposition of conditions of approval for permits. Sonoma County does not have any standards in the General Plan or the Municipal Code that addresses construction noise. The City of Sonoma Noise Ordinance requires construction to be limited to the hours of 8:00 a.m. to 7:00 p.m.

Construction of transmission lines and upgrading of substations would require a variety of equipment. During the construction period, noise levels generated by project construction would vary depending on the particular type, number, and duration of use of various pieces of construction equipment. Equipment would not be operated at night except as necessary, such as operation of generators as emergency power back-up contingencies for essential safety purposes. Typical noise levels for construction equipment at 45 feet (15 yards) from the source are listed in **Table 2.11-3**.

As shown in **Table 2.11-3**, intermittent and continuous use of construction equipment would generate noise levels in excess of 65 dBA in or adjacent to residential areas. The duration of noise impacts would be relatively brief, approximately one to three days at any one location along the construction routes. Given this short duration of impacts at any location, construction noise would not be considered significant by affected residences if the residents are given advance notice and if construction is limited to daytime hours. Implementation of the Mitigation Measures 2.11-1a and 2.11-1b would ensure that the impact of construction noise would be less than significant.

**TABLE 2.11-3  
TYPICAL NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT**

<b>Equipment</b>	<b>Range of Noise Level (dBA) at 45 feet</b>
<b>Earthmoving</b>	
Front loaders/Excavators	72-84
Backhoes	72-93
Tractors, dozers	76-96
Scrapers/ graders	80-93
Pavers	86-88
Trucks	82-94
Helicopter	110-113
<b>Materials Handling</b>	
Concrete mixers/Millers	75-88
Concrete pumps/Spreaders	81-83
Cranes (movable)	75-86
Cranes (derrick)	86-88
<b>Stationary</b>	
Pumps	69-71
Generators	71-82
Compressors	74-86
Drill rigs	70-85

SOURCE: WIA (1998)

**Impact 2.11-1: The project could generate noise levels in excess of local standards during project construction. This would be a less than significant impact with implementation of Mitigation Measures 2.11-1a and 2.11-1b.**

**Mitigation Measure 2.11-1a:** Construction activity shall be limited to the least noise-sensitive daytime hours between 8:00 a.m. and 7:00 p.m., with some exceptions (as approved by the CPUC) as required for safety considerations or certain construction procedures that cannot be interrupted.

**Mitigation Measure 2.11-1b:** The following noise reduction and suppression techniques shall be employed during project construction to minimize the impact of temporary construction-related noise on nearby sensitive receptors:

- Comply with manufacturers' muffler requirements.
- Notify residences in advance of the construction schedule and how many days they may be affected. Provide a phone number for a construction supervisor who would handle construction noise questions and complaints.

- Minimize idling of engines; turn off engines when not in use, where applicable.
- Shield compressors and other small stationary equipment with portable barriers when within 100 feet of residences.
- Route truck traffic away from noise-sensitive areas where feasible.

**Significance after Mitigation:** Less than Significant.

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### Operation

Project operation would include the operation and maintenance of project facilities, including transmission lines and substations. Operation of project facilities would include maintaining voltage across transmission lines and substations, which generate noise associated with corona discharge. In addition, maintenance activities would include the occasional use of light-duty trucks and ATVs to transport maintenance workers to and from the project and the occasional use of landscaping equipment, such as mechanical trimmers, mowers, and chainsaws, for vegetation management along the transmission line route.

Operation of the transmission line would generate random crackling or hissing noise associated with corona discharge, which occurs under high voltages. Corona discharge occurs when the voltage of the line exceeds the insulating capability of air. Corona is higher on misty days because the air has a lower insulating ability when wet. Also, particles such as dust or water droplets that may come in contact with a conductor tend to increase corona discharge. Therefore, the potential for noise from corona discharge is greatest during wet weather. The sound generated by a 115-kV transmission line during adverse weather conditions such as fog or rain is typically between 30 and 40 dBA at 30 yards from the outer conductor. In this case, noise generated from corona activity could be as high as 46 dBA at the closest sensitive receptors (45 feet distance) under adverse weather conditions (WIA, 1998). As operation of the transmission lines would not result in the generation of noise levels above 60 dBA  $L_{dn}$  or an increase in existing ambient noise levels of 3 dBA or more at a sensitive receptor, this would constitute a less than significant impact.

Operation of the Lakeville and Sonoma substations would not result in any appreciable increase to the existing average ambient noise levels at either substation site. The operation of additional circuit breakers at each site would result in only momentary noise as they are activated. This momentary noise would not result in a statistical increase to ambient noise levels and would therefore not be a significant impact.

### **Mitigation Measure 2.1-1**

As a result of the Land Use analysis (see Section 2.1), Mitigation Measure 2.1-1 would require the new 115 kV single-circuit transmission line to be undergrounded beneath Leveroni Road from approximately Fifth Street West to the Sonoma Substation (see **Figure 2.1-4**). The underground portion of the transmission line would be about 1/2 mile in length.

Implementation of Mitigation Measure 2.1-1 would extend the construction schedule by about 2.5 months. Residential uses along Leveroni Road are located just 45 to 50 feet from the transmission line corridor and would experience increased noise due to the extended construction schedule. Several businesses at the intersection of Leveroni Road and Broadway would also experience extended construction noise. This could create a temporary but potentially significant impact to nearby residents and workers. However, implementation of Mitigation Measures 2.11-1a and 2.11-1b would reduce additional noise impacts to a less than significant level. Operation of the underground portion of the transmission line along Leveroni Road would not increase ambient noise levels in the vicinity. Corona noise for the underground transmission line would not be audible.

- b) **Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels: *less than significant impact.***

### **Proposed Project**

The use of blasting and/or pile drivers would not be included as part of the project. The project would involve temporary sources of groundborne vibration and groundborne noise during construction from operation of heavy equipment. During project construction, operation of heavy equipment would generate localized groundborne vibration and groundborne noise that could be perceptible at residences or other sensitive uses in the immediate vicinity of the construction route. However, since the duration of impact at any one location would be very brief (from one to three days) and since the impact would occur during less sensitive daytime hours, the impact from construction-related groundborne vibration and groundborne noise would not be significant. Implementation of Mitigation Measures 2.11-1a and 2.11-1b would further ensure that this impact would remain less than significant.

### **Mitigation Measure 2.1-1**

As stated above, implementation of Mitigation Measure 2.1-1 would extend the construction schedule by about 2.5 months. Residential uses and businesses along Leveroni Road would experience increased noise due to the extended construction schedule. While the construction period for undergrounding this portion of the transmission line would be longer than under the Proposed Project, construction would only occur during daytime hours and the 2.5-month construction period would still be relatively short. Implementation of Mitigation Measures 2.11-1a and 2.11-1b would

ensure that impacts from construction-related groundborne vibration and groundborne noise would be less than significant.

- c) **A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project: *less than significant impact.***

As discussed in a), above, the only permanent noise source that would be introduced by the project would be the hissing or crackling noise associated with corona discharge during wet weather conditions. However, this increase would not be considered significant, as it would not increase ambient noise levels by 3 dBA or more. Therefore, the long-term impact of the project on ambient noise levels in the project area would be less than significant.

- e) **For a project located 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, would the project expose people residing or working in the project area to excessive noise levels: *no impact.***

The project does not involve the development of a noise-sensitive land uses, and thus, would not expose people to excessive aircraft noise.

- f) **For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels: *no impact.***

The project does not involve the development of a noise-sensitive land uses, and thus, would not expose people to excessive aircraft noise.

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## References – Noise

Caltrans, 1998. *Technical Noise Supplement*, 1998.

City of Sonoma Community Development Department, 1995. *City of Sonoma 1995-2005 General Plan*, adopted August 30, 1995.

City of Sonoma, 1986. *City of Sonoma Municipal Code*, Chapter 9.56 “Excessive Noise,” Sections 9.56.011 “Disturbing or Injurious Noise” and 9.56.020, “Penalty for violation,” 1986.

Pacific Gas and Electric Company (PG&E), 2004. *Proponent’s Environmental Assessment, Lakeville-Sonoma 115 kV Transmission Line Project*, November 2004. Prepared by EDAW.

Sonoma County Permit and Resource Management Department (Sonoma County PRMD), 1989. *1989 Sonoma County General Plan*, adopted March 23, 1989.

Wilson, Ihrig & Associates, Inc. (WIA), 1998. *Northeast San Jose Transmission Reinforcement Project Proponents Environmental Assessment*, 1998.