
4.11 - Noise

4.11.1 - Introduction

This section describes the existing ambient noise setting and potential effects from project implementation on the sites and their surrounding areas. It also considers impacts likely to be incurred in the future if additional sites are proposed or if existing sites are modified.

4.11.2 - Existing Conditions

Definitions

Noise is defined as unwanted or objectionable sound. Sound is usually considered unwanted when it interferes with normal activities, when it causes physical harm, and when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. Because noise plays a major role in the quality of life, and physical health, the regulation of noise is important, especially when considering noise in relation to sensitive receptors. Sensitive receptors are defined as activities or land uses that may be subject to the stress of significant interference from noise. Land uses associated with sensitive receptors often include residential dwellings, hotels, hospitals, nursing homes, schools, and libraries.

A decibel (dB) is the unit of measure used to describe the loudness of sound. Because the range of sound that humans can hear is quite large, the dB scale is logarithmic, making calculations more manageable. In addition, the human ear is not equally sensitive to all sound frequencies, so “A-weighting” is used. A-weighting units are written as dBA. In general, the average healthy ear can barely perceive changes of 3 dBA, whether the change be increases or decreases. A change of 5 dBA, is readily perceptible. However, a distinction must be drawn between rural (e.g., deserts, mountains, etc.) and suburban and urban settings. In a very quiet rural setting a 3 dBA increase may be readily perceptible, whereas a 3 dBA increase in a suburban or urban setting may not be perceptible at all due to existing background noise. In a suburban or urban setting, an increase of 5 dBA may be required to be readily perceived. For this reason, 3 dBA is usually used to assess impacts in rural areas, and 5 dBA is used to assess impacts in suburban or urban areas.

Regulations

The County of Riverside has an adopted a Noise Ordinance (Ordinance No. 847) that establishes Countywide standards to regulate noise. The ordinance allows for different levels of acceptable noise depending on land use. For open space and residential areas, the acceptable threshold is much lower than for areas used for commercial and industrial areas. Activities in any area that surpass applicable thresholds would be in violation of the ordinance and thus subject to sanction.

The Ordinance also provides a list of activities that are exempt from the Ordinance’s requirements. For purposes of this project, those exemptions include noise produced by facilities owned or operated

by or for a governmental agency, and noise generated in the construction of capital improvement projects of a governmental agency.

Existing Noise Environment

There is no substantial noise currently generated at any of the proposed sites. The only exceptions to this condition are the Big Maria, Box Springs, Elsinore Peak, Red Mountain, Santa Rosa Peak, and Whitewater sites, which currently house existing County communication facilities. The only noise generated at these sites are from the onsite standby generators that are housed inside the equipment shelters. Except for Santa Rosa Peak, these generators only operate for 30 minutes each week as part of their testing and maintenance regimes. Due to the lack of commercial electrical power at Santa Rosa Peak, the generators there are the primary source of power and must operate continuously. Occasional noise may also be created by technicians visiting the sites, which usually occurs on a monthly basis. The noise generated during these visits would be maintenance related noise, which could be considered negligible and infrequent.

The remainder of the proposed sites are currently vacant and do not house any activities that produce noise. For sites in rural areas where there is no human activity for perhaps miles in any direction, these sites are truly without noticeable sound. For the majority of the sites, however, some level of existing noise is present. This noise could emanate from surrounding homes, traffic, construction, or the normal activities of human life that tend to occur in urban or semi-rural environments. So while the sites themselves may not produce any noise, a person standing at the site would certainly hear some level of ambient noise from the surrounding area.

4.11.3 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G, Environmental Checklist, to determine whether noise impacts are significant environmental effects, the following questions are analyzed and evaluated:

- 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.) 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?

- 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?

4.11.4 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Noise Levels in Excess of Standards

Impact N-1	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?
	[CEQA Noise Threshold 11(a)]

Impact Analysis

Noise produced from each of the sites must be considered separately during both the construction phase of the project and the operational phase. The construction phase will be temporary in nature, typically 60 to 120 days. Once a site is completed, the operational phase of the project will begin and will extend for the life of the project, which will likely be many years and for all intents and purposes can be considered permanent.

Construction Noise

Short-term construction noise impacts would occur during construction activities either from the transport of workers and movement of construction materials to and from the project sites, or from the noise generated onsite during ground clearing, grading, and construction activities. Construction activities are carried out in discrete steps, each of which has a unique mix of equipment and, consequently, unique noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction sites as work progresses.

Several of the sites are within areas that are relatively close (less than 300 feet) from sensitive receptors, specifically homes. These sites include Arlington, Corona, El Cariso, Homeland, Lake Riverside, Mead Valley, Menifee, and Sunnyslope. Residents at these locations will likely experience some periods during construction when noise levels will exceed the thresholds provided in the County ordinance (55 dBA during daytime hours). Owing to the small size of each site, the amount of time when these conditions will be present will be somewhat brief, and construction equipment will not operate at full power for prolonged periods of time. Nevertheless, the thresholds provided in the ordinance will be surpassed from time to time during the construction phase and this will be unavoidable.

The County Noise Ordinance, however, provides a list of activities that are exempt from the Ordinance's requirements. For purposes of this project, those exemptions include noise produced by facilities owned or operated by or for a governmental agency, and noise generated in the construction of capital improvement projects of a governmental agency (Sections 2 (a) and 2 (b), respectively).

These two exemptions have direct application to this project. The towers will be owned and operated by a governmental agency (the County), and will be part of capital improvement construction project being undertaken by the County. Therefore, the project is exempt from the requirements of the Noise Ordinance and the impact of the project will be less than significant.

Operational Noise

Once completed, the only noise that will be generated at the sites will be made during the operation of onsite electrical generators. All of the sites but two (Santa Rosa Peak and Spring Hill) will be supplied with commercial power and will be equipped with standby generators only. Under normal conditions, these standby units will operate for only 30 minutes per week as part of their testing and lubricating regime. During a prolonged power outage, of course, the units would be required to operate for the duration of the outage. The two sites that will require fulltime generator power (Santa Rosa Peak and Spring Hill) will house generators that will run 24 hours per day, 7 days per week. Both of these sites, however, are in extremely isolated portions of the County and are thus several miles from the nearest sensitive receptor.

Regardless of the type of generator that will be installed at any given site, all of the generators will be housed inside the equipment shelters. The generators themselves will have mufflers installed, and the buildings in which they will be installed will have walls of adequate thickness to provide a substantial amount of soundproofing. The noise level experienced outside one of these shelters during operation of a generator will be roughly equivalent to the noise that would be experienced by someone standing outside of a closed garage with a running automobile inside. This level of noise is not generally considered to be loud and would be less than significant.

Exemptions from the County Noise Ordinance also apply to the operational phases of a project, specifically the exemption that applies to facilities operated by or for a governmental agency. Therefore, impacts from the project in this regard will be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Excessive Groundborne Vibration

**Impact N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
 [CEQA Noise Threshold 11(b)]**

Impact Analysis

Neither the County nor the State of California have adopted criteria or regulations for groundborne vibration. However, the U.S. Department of Transportation’s Federal Transit Administration (FTA) provides criteria for acceptable levels of groundborne vibration for various types of buildings that are susceptible to vibration. The human reaction to vibration is highly subjective, and varies from person to person, but generally speaking, 65 VdB (vibration decibels) is considered to be the threshold of perception. Vibrations beyond that amount can be annoying to some people. Vibrations below that amount can have secondary audible effects, such as slight rattling of doors, fixtures, and dishes.

Table 4.11-1 shows the FTA groundborne vibration and noise impact criteria.

Table 4.11-1: Groundborne Vibration and Noise Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB)		Groundborne Noise Impact Levels (dBA)	
	Frequent Events ¹	Infrequent Events ²	Frequent Events ¹	Infrequent Events ²
Category 1: Buildings where low ambient vibration is essential for interior vibrations	65 VdB ³	65 VdB ³	NA ⁴	NA ⁴
Category 2: Residences and buildings where people normally sleep	72 VdB	80 VdB	35 dBA	43dBA
Category 3: institutional land uses with primarily daytime use	75 VdB	83 VdB	40 dBA	48 dBA
Notes: ¹ “Frequent Events” is defined as more than 70 vibration events per day ² “Infrequent Events” is defined as fewer than 70 vibration events per day ³ This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes ⁴ NA – Not Applicable Source: United States Department of Transportation, Federal Transit Administration, <i>Transit Noise and Vibration Assessment</i> , 1995.				

With the exception of onsite generators, sources of vibration will not be located at the sites during the operational phase. Generators will be mounted on rubber, vibration-resistant cushions, so the vibration from the generators will be negligible. Activities during the construction phase, however, will produce some level of vibration. Construction activities at each site will vary, but they will typically require at least one piece of large equipment to be operating at fairly regular intervals, especially during the earlier stages when grading and/or drilling will be taking place. A large bulldozer or a loaded truck can create ground vibration in excess of 80 VdB at 25 feet from the

vibration source. However, the nearest sensitive receptor to any of the proposed sites is approximately 100 feet away (Arlington being the closest site). Vibration decreases the further away the receptor gets from the source. According to the FTA's groundborne vibration criteria presented in Table 4.11-1, the vibration threshold in residential settings for infrequent vibration events (less than 70 events per day) is 80 VdB. Considering the distance of the nearest sensitive receptor to the potential vibration source (100 feet), the vibration experienced at that location would be well below 80 VdB. Further, impacts at the site of the closest sensitive receptor are unlikely to be sustained during the entire construction period, but rather only during the times that heavy construction equipment is operating. Construction on the sites will typically be restricted to daylight hours (7:00 a.m. to 7:00 p.m.), thus eliminating impacts during evening hours. Considering these findings, the impact of the project in regards to excessive vibration will be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Permanent Increase in Ambient Noise Levels

Impact N-3	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
	[CEQA Noise Threshold 11(c)]

Impact Analysis

Once completed and operational, the only noise that will be generated at the sites will be made during the operation of onsite electrical generators. All of the sites but two of the sites (Santa Rosa Peak and Spring Hill) will be supplied with commercial power and will be equipped with standby generators only. Under normal conditions, these standby units will operate for only 30 minutes per week as part of their testing and lubricating regime. During a prolonged power outage, of course, the units would be required to operate for the duration of the outage. The two sites that will require fulltime generator power (Santa Rosa Peak and Spring Hill) will house generators that will run 24 hours per day, 7 days per week. Both of these sites, however, are in extremely isolated portions of the County and are thus several miles from the nearest sensitive receptor.

Regardless of the type of generator that will be installed at any given site, all of the generators will be housed inside the equipment shelters. The generators themselves will have mufflers installed, and the buildings in which they will be installed will have walls of adequate thickness to provide a substantial amount of soundproofing. The noise level experienced outside one of these shelters during operation of a generator will roughly be equivalent to the noise that would be experienced by someone standing

outside of a closed garage with a running automobile inside. This level of noise is not generally considered loud and would be less than significant.

Exemptions from the County Noise Ordinance also apply to the operational phases of a project, specifically the exemption that applies to facilities operated by or for a governmental agency (Section 2 (a)). Therefore, impacts from the project in this regard will be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Temporary or Periodic Increase in Ambient Noise Levels

Impact N-4	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? [CEQA Noise Threshold 11(d)]
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Impact Analysis

Temporary construction noise impacts could occur during construction activities either from the noise impacts created from the transport of workers and movement of construction materials to and from the project sites, or from the noise generated onsite during ground clearing, grading, and construction activities. Construction activities are carried out in discrete steps, each of which has a unique mix of equipment and, consequently, unique noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction sites as work progresses.

Several of the sites are within areas that are relatively close (less than 300 feet) from sensitive receptors, specifically homes. These sites include Arlington, Corona, El Cariso, Homeland, Lake Riverside, Mead Valley, Menifee, and Sunnyslope. Residents at these locations will likely experience some periods during construction when noise levels will exceed the thresholds provided in the County ordinance (55 dBA during daytime hours). Owing to the small size of each site, the amount of time when these conditions will be present will be somewhat brief, and construction equipment will not operate at full power for prolonged periods of time. Nevertheless, the thresholds provided in the ordinance will be surpassed from time to time during the construction phase and this will be unavoidable.

The County Noise Ordinance, however, provides a list of activities that are exempt from the Ordinance's requirements. For purposes of this project, those exemptions include noise produced by facilities owned or operated by or for a governmental agency, and noise generated in the construction of capital improvement projects of a governmental agency (Sections 2 (a) and 2 (b), respectively).

These two exemptions have direct application to this project. The towers will be owned and operated by a governmental agency (the County), and will be part of a capital improvement construction project being undertaken by the County. Therefore, the project is exempt from the requirements of the Noise Ordinance and the impact of the project will be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Airport Noise Levels

Impact N-5	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? 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? [CEQA Noise Threshold 11(e) and 11(f)]
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Impact Analysis

Four proposed project sites are located within two miles of an airport or private airstrip facility (Arlington, Green River, Sunnyslope, Winchester). However, the tower sites themselves will not contain any habitable residential structures, so no one will reside at any of the project sites. Thus, no residents will be exposed to excessive noise from aircraft. Technicians will access the sites occasionally to service the equipment being operated at each site. These visits will typically be brief in duration and, regardless, workers will not be subjected to excessive noise from aircraft. Impacts in this regard are, therefore, less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.