4.12 Noise

The purpose of this Section is to identify existing noise environment within the Project area, analyze potential noise impacts associated with the development of the proposed Project, and identify mitigation measures that would avoid or reduce the significance of any identified impacts. Thresholds of significance for the impact analysis are derived from Appendix G of the 2011 *CEQA Guidelines*.

4.12.1 Environmental Setting

Environmental Noise Fundamentals

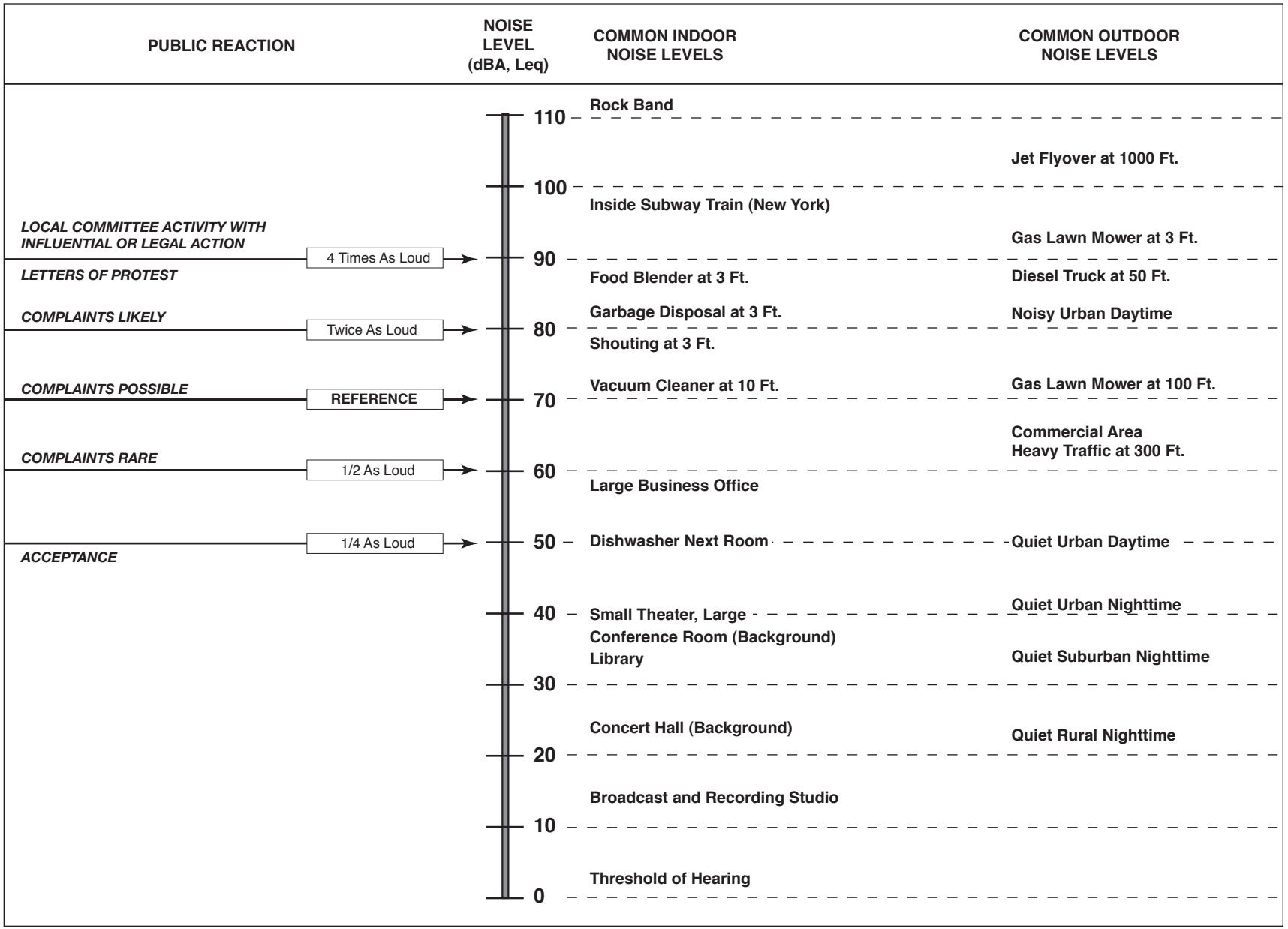
Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

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 frequencies 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 extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown in **Figure 4.12-1**.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in Figure 4.12-1 are representative of measured noise at a given instant in time, however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of 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.



SOURCE: Caltrans Transportation Laboratory Noise Manual, 1982; and modification by ESA.

Cadiz Valley Water Conservation, Recovery, and Storage Project

Figure 4.12-1

Effects of Noise on People

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 vary from instant to instant requiring the measurement of noise exposure over a period of time in order 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:

Leq — 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 Leq 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).

Lmax — The instantaneous maximum noise level for a specified period of time.

L50 — The noise level that is equaled or exceeded 50 percent of the specified time period. The L50 represents the median sound level.

L90 — The noise level that is equaled or exceeded 90 percent of the specified time period. The L90 is sometimes used to represent the background sound level.

Ldn — 24-hour day and night A-weighted noise exposure level 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 PM and 7:00 AM is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

CNEL — Community Noise Equivalent Level (CNEL) is similar to the Ldn, which adds a 5-dBA penalty during the evening hours between 7:00 PM and 10:00 PM in addition to a 10-dBA penalty between the hours of 10:00 PM and 7:00 AM

As a general rule, in areas where the noise environment is dominated by traffic, the Leq during the peak-hour is generally equivalent to the Ldn at that location (within +/- 2 dBA).[1]

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 can experience noise in the last category. There is no completely satisfactory way to measure

[1] California Department of Transportation, *Technical Noise Supplement*, October 1998, page 52.

the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists, 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;
- 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. 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 between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.[2]

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, hotels, schools, rest homes, and hospitals are generally more sensitive to noise than commercial and industrial land uses. The Project facilities proposed would be located in the Cadiz Valley in eastern San Bernardino County. The water conveyance pipeline, which would connect Cadiz Property with the CRA near Rice, CA, would be buried within the ARZC ROW along the railroad tracks. The nearest sensitive receptors are

[2] California Department of Transportation, *Technical Noise Supplement*, October 1998, page 15.

residences located approximately 3.3 miles north of the Project site near the corner of Cadiz Road and National Trails Highway. Wildlife in the area may be sensitive to loud or persistent noises as well. Refer to Section 4.4, Biological Resources for further discussion on noise impacts to wildlife.

Existing Noise Environment

The noise surrounding the Project site would be expected to be typical of open space and agricultural areas. The predominant sources of noise include railroad noise, roadway traffic, and equipment noise from existing agricultural operations. Military operations including explosions and low-flying aircraft also generate noise in the valley. Average noise levels in these types of environments typically are in the range of 35-55 dBA.[3] In this naturally quiet environment, trains traversing the valley (10 to 20 per day on the BNSF and 2 or 3 on the ARZC) are the primary source of non-wildlife noises.

4.12.2 Regulatory Framework

Federal

Federal Code of Regulations, Part 205(B)

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR, Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

The National Park Service has established internal orders, Director's Order #47: Soundscape Preservation and Noise Management, that outline operating procedures for assessing noise effects from Park management actions. The Order establishes internal operating and management protocols but do not apply to neighboring land uses.

State

California Government Code Section 65302(f)

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of their comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services.

State of California OPR Noise Element Guidelines

The State of California Office of Planning and Research (OPR) Noise Element Guidelines include recommended interior and exterior standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The OPR Guidelines describe the compatibility of various land uses with a range of environmental noise levels in terms of dBA CNEL.

In California, most cities and counties have adopted noise ordinances, which serve as enforcement mechanisms for controlling noise, and general plan noise elements, which are used

[3] Cunniff, P.F., *Environmental Noise Pollution*, 1977, page 131.

as planning guidelines to ensure that long-term noise generated by a source is compatible with adjacent land uses. The California Department of Health Services' Office of Noise Control studied the correlation of noise levels and their effects on various land uses and published land use compatibility guidelines for the noise elements of local general plans. The guidelines are the basis for most noise element land use compatibility guidelines in California.

The land use compatibility for a community noise environment chart identifies the normally acceptable range for several different land uses, as shown in **Figure 4.12-2** below. Persons in low-density residential settings are most sensitive to noise intrusion, with noise levels of 60 dBA CNEL and below considered "acceptable." For land uses such as schools, libraries, churches, hospitals, and parks, acceptable noise levels go up to 70 dBA CNEL.

The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB at 15 meters. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by State and local law enforcement officials.

Local

San Bernardino County Municipal Code

The State of California Government Code establishes an exemption for "the location or construction of facilities for the production, generation, storage, treatment, or transmission of water…." from county or city building and zoning ordinances. (Gov. Code §§ 53091(d), (e)) The implementation of the Project by SMWD would be covered under this exemption for the construction and operation of facilities that are used to produce, store and transmit water. The following discussion on the County Municipal Code is provided for context to assess the Project's consistency with the County policies.

Table 4.12-1 describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties.

TABLE 4.12-1
SAN BERNARDINO COUNTY STATIONARY NOISE STANDARDS

Affected Land Uses Receiving Noise	7:00 am – 10:00 pm dBA Leq	10:00 pm – 7:00 am dBA Leq
Residential	55	45
Professional Services	55	55
Other Commercial	60	60
Industrial	70	70

SOURCE: County of San Bernardino, *County of San Bernardino 2007 Development Code*, *As Amended,* September 2010, page 3-12.

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, *General Plan Guidelines*, 2003.

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Figure 4.12-2
Land Use Compatibility For Community Noise Environment

Exemptions to noise and vibration thresholds include temporary construction, maintenance, repair, or demolition activities between 7:00 am and 7:00 pm, except Sundays and Federal holidays. For discussion of the applicability of the County General Plan and Development Code policies to the Project, please see Section 4.10.3 (*Consistency with Land Use Plans*) of the Land Use and Planning Chapter.

4.12.3 Impact and Mitigation Analysis

Significance Criteria

Based on the *CEQA Guidelines,* Appendix G, a project may be deemed to have a significant effect on the environment with respect to noise if it would:

- Expose persons to or generated noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose persons to or generated excessive ground-borne vibration or ground-borne noise levels;
- Create a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- Create a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- Expose people residing or working in the Project area to excessive noise levels 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; or
- Expose people residing or working in the Project area to excessive noise levels for a project located in the vicinity of a private airstrip.

Methodology

The methodology for determining a significant impact related to noise is the same whether applied to the proposed Project on a programmatic or a project level. Noise impacts are assessed based on a comparative analysis of the noise levels resulting from the Project and the noise levels under existing conditions. The primary short-term sources of noise associated with the proposed Project would be temporary construction noise effects and are based on typical construction phases, equipment noise levels, attenuation of those noise levels due to distances, and any barriers between the construction activity and the sensitive receptors near the sources of construction noise.

Groundwater Conservation and Recovery Component

Sensitive Receptors

Significance Threshold

Would the proposed Project expose persons, or sensitive receptors, to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact Analysis

Construction of Wellfield and Conveyance Facilities

Noise levels associated with the installation of pipelines and construction of the wellfield would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. **Tables 4.12-2** and **4.12-3** show typical noise levels during different construction stages and those produced by various types of construction equipment. Noise would be generated within the wellfield during the drilling of each new well. Multiple construction zones along the pipeline corridor would generate noise along the railroad alignment.

TABLE 4.12-2
TYPICAL NOISE LEVELS FROM CONSTRUCTION ACTIVITIES

Construction Phase	Noise Level[a] (dBA, Leq)
Ground clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89
Rock Blasting	111-115

a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, December 1971, page 26, Table I-A; Cunniff, P.F., *Environmental Noise Pollution*, 1977, page 131.

TABLE 4.12-3
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level[a] (dBA, Leq at 50 Feet)
Dump truck	88
Portable air compressor	81
Concrete mixer (truck)	85
Scraper	88
Jackhammer	88
Dozer	87
Paver	89
Generator	76
Backhoe	85
Rock Drilling	98

a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, December 1971, page 26, Table I-A; Cunniff, P.F., *Environmental Noise Pollution*, 1977, page 131.

The loudest portion of typical construction would be during excavation of the pipeline trenches and when blasting or drilling through rock. As shown in Table 4.12-2, excavation noise levels are 89 dBA at 50 feet and blasting can generate noise levels of 115 dBA at 50 feet. The nearest sensitive receptors to construction activities are approximately 3.3 miles (17,424 feet) to the north. Wildlife in the immediate vicinity would be much closer. (The effect of noise on wildlife is addressed in Section 4.4.) Assuming an attenuation rate of 7.5 dBA per doubling of distance, a receptor at 3.3 miles would experience noise levels of approximately 25 dBA Leq during excavation. If drilling were to be used at this distance during construction, then the sensitive receptor would be exposed to noise levels of approximately 34 dBA Leq. If blasting is needed, then the sensitive receptor would be exposed to noise levels of approximately 52 dBA. Other sensitive receptors located further away from construction would be exposed to construction noise at incrementally lower levels. Basting would occur only once or twice per day for up to three days at a time and would be similar to the military exercises conducted on the western edge of the valley.

Noise would also increase during construction near the worker housing areas. The nearest residences to the worker housing areas are approximately one mile to the north. At this distance, worker housing area noise would attenuate to less than significant levels.

San Bernardino County Municipal Code has exemptions to noise and vibration thresholds for construction activities between 7:00 am and 7:00 pm, except Sundays and federal holidays. However, wellfield drilling would occur 24 hours a day. Nevertheless, the loudest construction activities would not exceed San Bernardino County nighttime noise ordinance levels of 45 dBA at the nearest sensitive receptor. Therefore, construction noise would be less than significant.

Operations

Noise during Project operations would be generated by the well pump motors and from maintenance vehicles. The well pumps would be housed in acoustical covers to minimize noise generation. The noise would attenuate to imperceptible levels at the nearest residences due to the remoteness of the wellfield. The dominant noise in the valley is from the frequent trains and the vehicle traffic on Route 66. Maintenance vehicle trips would be infrequent and would not substantially alter the existing condition in the valley from dirt-road traffic. Wildlife in the immediate vicinity of the wellfield may experience audible noise from the pumps. (The effect of noise on wildlife is discussed in Section 4.4). Operation of the proposed Project would not result in significant noise impacts to sensitive receptors.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Ground-Borne Vibrations and Ground-Borne Noise

Significance Threshold

Would the proposed Project expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?

Impact Analysis

Construction of Wellfield and Conveyance Facilities

Ground borne vibration (GBV) created by construction activity, notably grading and excavation utilizing large bulldozers, would fall within the range of readily perceivable vibration at 25 feet from source but would not exceed the threshold at which continuous vibration would begin to annoy people. Ground borne vibration would attenuate at a rate of approximately 6 VdB per doubling of distance. The ground-borne vibration generated during construction activities would therefore primarily impact sensitive uses that are located adjacent to or within 25 feet of specific Project-related activity.

Vibration that takes the form of oscillatory motion, can be described in terms of acceleration, velocity, and displacement. There are several different methods that are used to quantify vibration. The PPV is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The RMS amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. The FTA's threshold of architectural damage for conventional sensitive structures is 0.2 in/sec PPV, and the FTA threshold of human annoyance to ground-borne vibration is 80 RMS.[4]

The Project would result in a significant impact if buildings would be exposed to the Federal Transit Administration (FTA) building damage ground-borne vibration threshold level of 0.2 Peak Particle Velocity (PPV) or if sensitive individuals would be exposed to the FTA human annoyance response ground-borne vibration threshold of 80 Root Mean Square (RMS) velocity level.

Construction of the Project would require drilling during well and pipeline installation. As shown in **Table 4.12-4** below, caisson drilling generates vibration levels of up to 0.089 PPV or 87 RMS at a distance of 25 feet. The nearest sensitive receptors to construction activities in the wellfield are approximately 3.3 miles (17,424 feet) to the north of the wellfield. (Project effects on wildlife are discussed in Section 4.4 Biological Resources.) At this distance, the nearest sensitive receptor would be exposed to vibration levels of approximately 0.000005 PPV and 1.7 RMS. These levels would not exceed FTA standards. Similarly, construction activities to install the pipeline could generate minimal vibration along the railroad that would be well below any damage threshold as shown in Table 4.12-5. Therefore vibration impacts from construction would be less than significant.

4 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006, page 8-2.

TABLE 4.12-4
VIBRATION FROM CONSTRUCTION EQUIPMENT

Construction Equipment	PPV at 25 feet (inches/second)[a]	RMS at 25 feet (VDB)[b]
Loaded Trucks	0.076	86
Caisson Drilling	0.089	87
Large Bulldozer	0.089	87
Jackhammer	0.035	79

a. Buildings can be exposed to ground-borne vibration levels of 0.2 PPV without experiencing structural damage.
b. The human annoyance response level is 80 RMS.

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006, page 12-12, Table 12-2.

Operations

Operation of the Project would not result in substantial vibration. Localized vibration may be experienced near well pump motors and along access roads used by maintenance vehicles, but vibration would attenuate and would not damage structures or reach annoyance levels of significance. Operation would result in less than significant vibration effects.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Ambient Noise Levels

Significance Threshold

Would the proposed Project create a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Would the proposed Project create a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Impact Analysis

Construction of Wellfield and Conveyance Facilities

Ambient noise levels in the desert are low, typically near 40-45 dBA. Noise levels associated with the installation of pipelines and construction of the wellfield would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Tables 4.12-3 and 4.12-4 show typical noise levels during different construction stages and those produced by various types of construction equipment. Noise would be generated within the wellfield during the drilling of each new well. Multiple construction zones along the pipeline corridor would generate noise along the railroad alignment. If blasting is needed in certain locations along the pipeline alignment, noise from blasting would be audible in the valley.

Nighttime and daytime construction would increase the ambient noise levels in the local construction area.

Since the construction zone is in a remote area, the temporary noise would not be audible to many receptors. Some visitors in the wilderness areas and wildlife may hear construction and the noise may alter the ambient quietness, however, the existing condition includes train noises and traffic. Airplane noises are also audible. The temporary construction noise would modify the ambient noise levels in the immediate vicinity of the construction, but once construction is complete, the site would return to existing conditions. Blasting noise would be similar to the military exercises that occur periodically in the valley. Blasting may be required once or twice per day over a three day period. This would be a less than significant impact.

Operations

Project operations that would generate noise include maintenance vehicle trips and the operation of certain mechanical equipment such as stationary pumps, fans, and generators. Maintenance inspection of the wellfield, pipelines, and pump stations would occur infrequently, less than one per day. Therefore operational vehicle trip increases would be minimal and would not generate a substantial increase in noise along local roadways.

The loudest stationary noise at the Project site would be from the power generators and pump stations. As shown in Table 4.12-4 above, generator noise levels are 76 dBA at 50 feet. The nearest sensitive receptors to potential generator activity are approximately 3.3 miles (17,424 feet) to the north. Assuming an attenuation rate of 7.5 dBA per doubling of distance, a receptor at 3.3 miles would experience noise levels of approximately 12 dBA Leq from generator operation. These noise levels would not exceed San Bernardino County nighttime noise ordinance levels of 45 dBA at the nearest sensitive receptor. Effects to ambient noise levels on wildlife are evaluated in Section 4.3 Biological Resources. Therefore, due to the remote nature of the Project area and the moderate noise generation, operational noise would be less than significant.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Exposure to Excessive Noise Levels

Significance Threshold

Would the proposed Project expose people residing or working in the Project area to excessive noise levels 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 proposed Project expose people residing or working in the Project area to excessive noise levels if the Project is located in the vicinity of a private airstrip?

Impact Analysis

Construction of Wellfield and Conveyance Facilities

The Project site would be located in close proximity to the private airstrip owned and maintained by Cadiz Inc. This airstrip is used approximately five times a month and is not available to the public. During construction, there may be a minor increase in the number of flights into and out of the airstrip associated with various contractor personnel visiting the Project area as needed (less than five per week). But it is expected that the increase would amount to less than five visits per week and would be temporary, only lasting throughout construction. As a result, impacts would be considered less than significant and no mitigation is required.

Operations

Ongoing travel to and from the Project site for ongoing maintenance of the new wellfield facilities and pump stations would occur infrequently and should be on par with current airstrip operations. Therefore, future employees on the Project site would not be subjected to excessive noise levels from airstrip activity, and exposure to airport noise would be a less than significant impact. Similarly, since the Project would not create noise-sensitive land uses in the area,. No other potential excessive noise sources exist in the vicinity.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Imported Water Storage Component

This component is analyzed on a programmatic basis.

Sensitive Receptors

Significance Threshold

Would the proposed Project expose persons, or sensitive receptors, to or generate noise levels in excess of standards established by any applicable plan, noise ordinance, or applicable standards of other agencies?

Impact Analysis

Construction activities required for the Imported Water Storage Component would emit noise at levels similar to the Groundwater Conservation and Recovery Component. Construction of the spreading basins would be temporary and would not result in significant amounts of noise experienced by sensitive receptors. Operations would increase the number of extraction well pumps, but would not significantly increase noise levels at sensitive receptors due to the low level of noise generated and the long distance from the well sites to the sensitive receptors.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Ground-borne Vibrations and Ground-borne Noise

Significance Threshold

Would the proposed Project expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?

Impact Analysis

The Project would result in a significant impact if buildings would be exposed to the FTA building damage ground-borne vibration threshold level of 0.2 PPV or if sensitive individuals would be exposed to the FTA human annoyance response ground-borne vibration threshold of 80 RMS velocity level. Similar to the Groundwater Conservation and Recovery Component, construction of the spreading basins, existing natural gas pipeline appurtenances, and expanded wellfield would not result in vibration that could affect neighboring structures. The impact would be less than significant.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Ambient Noise Levels

Significance Threshold

Would the proposed Project create a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Would the proposed Project create a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Impact Analysis

Similar to the Groundwater Conservation and Recovery Component, Project operations that would generate noise include maintenance vehicle trips and the operation of certain mechanical equipment such as stationary pumps, fans, and generators. Maintenance inspection of the wellfield, pipelines, pump stations, and existing natural gas pipeline appurtenances would occur infrequently. Therefore, operational vehicle trip increases would be minimal and would not

generate a substantial increase in noise along local roadways. Noise levels would not exceed San Bernardino County nighttime noise ordinance levels of 45 dBA at the nearest sensitive receptor. Therefore, operational noise would be less than significant.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Exposure to Excessive Noise Levels

Significance Threshold

Would the proposed Project expose people residing or working in the Project area to excessive noise levels 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 proposed Project expose people residing or working in the Project area to excessive noise levels if the Project is located in the vicinity of a private airstrip?

Impact Analysis

Similar to the Groundwater Conservation and Recovery Component, the Imported Water Storage Component would not locate people near excessive noise sources. The closest neighboring noise sources include the airstrip, trains, and highway. Since the Project would not create noise-sensitive land uses in the area, impacts from existing and Project-related noise sources would be less than significant during construction and operations.

The existing natural gas pipeline alignment is not located within an airport land use plan. However, the pipeline alignment is located in proximity to the Barstow-Daggett Airport which is a county-owned public-use airport, located between the community of Daggett and City of Bartow. The airport consists of two paved runways. The pipeline currently exists and construction would be conducted within the existing right-of-way. The Project would not place noise-sensitive land uses in the area. Thus, impacts from existing and Project-related noise sources would be less than significant during construction and operations.

Mitigation Measures

None required.

Significance Conclusion

Less than significant.

Mitigation Measure Summary Table

Table 4.12-5 presents the impacts and mitigation summary for Noise.

TABLE 4.12-5
IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance Conclusion
Groundwater Conservation and Recovery Component		
Sensitive Receptors	None required	Less than significant
Ground-borne Vibrations and Ground-borne Noise	None required	Less than significant
Ambient Noise Levels	None required	Less than significant
Exposure to Excessive Noise Levels	None required	Less than significant
Imported Water Storage Component		
Sensitive Receptors	None required	Less than significant
Ground-borne Vibrations and Ground-borne Noise	None required	Less than significant
Ambient Noise Levels	None required	Less than significant
Exposure to Excessive Noise Levels	None required	Less than significant