

## **4.9 NOISE**

This section provides information on ambient noise conditions in the vicinity of the Project and identifies potential impacts with noise as a result of the construction and operation of the Project. The noise modeling output is included in this Draft EIR as Appendix I.

### **4.9.1 Noise Terminology**

#### **Noise Fundamentals**

Noise is defined as unwanted or objectionable sound. The effect of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the “A-weighted” noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written as dB(A) or dBA. Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling a traffic volume, would increase the noise level by 3 dBA; a halving of the energy would result in a 3-dBA decrease.

A given level of noise may be more or less tolerable depending on the duration of exposure experienced by an individual. A number of measures of noise exposure consider not only the A-level variation of noise but also the duration of the disturbance. The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 10 decibels to sound levels at night between 10 p.m. and 7 a.m. The Community Noise Equivalent Level (CNEL) is similar to the Ldn except that another 4.77 decibels is added to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, ambient noise levels are decreased, which creates an increased sensitivity of the receptors to sounds. For this reason sound appears louder in the evening and nighttime hours and is weighted accordingly. The County of Imperial Noise Element uses the Day-Night Sound Level (Ldn).

It is widely accepted that the average healthy ear can barely perceive either an increase or decrease of 3 dBA, that a change of 5 dBA is readily perceptible, and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (Caltrans 2013).

### **4.9.2 Existing Environmental Setting**

#### **Regional Setting**

The Proposed Project would be located in County of Imperial, which is situated in the southeasternmost portion of the state of California. The County encompasses an approximately 4,597-square-mile area and is bordered by Riverside County to the north, the state of Arizona on the east, Mexico to the south, and San Diego County to the west. Principal noise sources in County of Imperial are transportation (aircraft, railway lines, and motor vehicles), industrial (rail switching yards, utilities, and manufacturing facilities), and agricultural operations. Existing industrial sources, including geothermal and manufacturing plants, are generally located away from concentrations of sensitive receptors in the County.

Land uses in the Imperial Valley around the Salton Sea and the Salton Sea Known Geothermal Resource Area (KGRA) reflect the development trends of the County with respect to existing agricultural uses and development of renewable energy projects. In recent years, a number of solar and geothermal energy projects have been proposed for development in the County. Approximately 12 percent (347,941 acres) of the land area in County of Imperial has been designated by the USGS as a KGRA. The County of Imperial has several KGRAs.

### **Project Site**

The Project site is located on private land within the Salton Sea KGRA in the unincorporated area of Imperial County, about 2.3 miles west-southwest of the Town of Niland and 1.1 mile directly east of the existing HRI Geothermal Power Plant. The nearest sensitive receptor to the Project site is located on the north side of Pound Road, just over a mile north of the Project site.

### **Ambient Noise Levels**

The primary sources of noise within the study area consist of noise generated from the existing HR1 as well as from vehicle noise on McDonald Road. The *Background Noise Measurements for the Hudson Ranch II EIR* prepared by Ecology and Environment, Inc. for the *Hudson Ranch II and Simbol Calipatria II Final EIR*, took noise measurements in the vicinity of the Project site when HR1 was operational and found that the noise level along McDonald Road east of the Project site measured at 58.2 Leq (the sound level in decibels equivalent to the total sound energy measured over a stated period of time). This noise level was produced primarily by vehicles on McDonald Road as well as from nearby agricultural activity and natural sources of noise (HDR 2012). Since HR1 was over 2 miles away from this noise measurement, it is unlikely to have contributed quantitatively to this noise measurement. Another noise measurement was taken at the Sonny Bono National Wildlife Refuge, which recorded a noise level of 48.5 dBA Leq, which due to its location, was primarily due to natural sources (HDR 2012). Since HR1 was over a mile away from this noise measurement, it is unlikely to have contributed quantitatively to this noise measurement. Although these noise measurements are almost 10 years old, only limited development has occurred in the Project area over the last 10 years; as such, these noise measurements still provide an accurate representation of the existing noise environment.

### **4.9.3 Regulatory Setting**

The Project would be constructed in the County of Imperial, within the state of California. The following subsections present a summary of noise-related regulatory requirements for the Project.

#### **Federal**

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the

Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The USDOT assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the Proposed Project is not under the jurisdiction of the FTA, the FTA is the only agency that has defined what constitutes a significant noise impact from implementing a project. **Error! Reference source not found.** provides the thresholds utilized by the FTA for permanent noise level increase at the project level. As shown in **Error! Reference source not found.**, the allowable cumulative noise level increase created from a project would range from 0 to 7 dBA based on the existing (ambient) noise levels in the project vicinity. The justification for the sliding scale is that people already exposed to high levels of noise should be expected to tolerate only a small increase in the amount of noise in their community. In contrast, if the existing noise levels are quite low, it is reasonable to allow a greater change in the community noise for the equivalent difference in annoyance.

**Table 4.9-1: FTA Project Effects on Cumulative Noise Exposure**

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

**Source:** Federal Transit Administration, 2006.

**State**

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix,” which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

### California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

### Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

### California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds, noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

### California Vehicle Code Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California as follows: 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

### **Local**

The Noise Element of the Imperial County General Plan provides the applicable noise standards for the Proposed Project. The Noise Element also contains plans and policies to protect the public from noise intrusion. Table 4.9-2 identifies applicable General Plan policies, goals, and objectives applicable to the Projects' consistency with the General Plan Noise Element.

**Table 4.9-2: Consistency with County General Plan**

Goals, Objectives, and Polices	Consistency with General Plan	Analysis
<b>Noise Element</b>		
Goal 1 – Provide an acceptable noise environment for existing and future residents in County of Imperial.	Consistent	The Project would provide an acceptable noise environment for future residents in the County. Currently, no residences exist in the Project’s vicinity. Thus, the Project is consistent with this goal.
Objective 1.3 – Control noise at the source where feasible.	Consistent	The noise analysis performed for the Project determined that the Project would not result in excessive noise levels. Therefore, the Project is consistent with this objective.
Objective 1.4 – Coordinate with airport operators to ensure operations are in conformance with approved Airport Land Use Compatibility Plans.	Consistent	The Project is not located within the planning area of any Airport Land Use Compatibility Plans and is, thus, consistent with this objective.
Objective 2.2 – Provide acoustical analysis guidelines which minimize the burden on project proponents and project reviewers.	Consistent	The noise analysis performed for the Project follows all County guidelines and is therefore consistent with this objective.
Objective 2.3 – Work with project proponents to utilize site planning, architectural design, construction, and noise barriers to reduce noise impacts as projects as proposed.	Consistent	The noise analysis performed for the Project determined that the Project would not result in excessive noise levels. Therefore, no noise barriers are required, and the Project is consistent with this objective.
Policy 1 – Acoustical Analysis of Proposed Projects. The County shall require the analysis of proposed discretionary projects which may be impacted by excessive noise levels.	Consistent	A noise analysis was performed for the Project which determined that the Project would not result in excessive noise levels. Therefore, the Project is consistent with this policy.
Policy 2 – Noise/Land Use compatibility. When acoustical analysis of a proposed project is required, the County shall identify and evaluate potential noise/land use conflicts that could result from the implementation of the Project.	Consistent	A noise analysis was performed for the Project which determined that the Project would not result in land use conflicts. Therefore, the Project is consistent with this policy.

**Table 4.9-2: Consistency with County General Plan**

Goals, Objectives, and Polices	Consistency with General Plan	Analysis
Policy 4 – Interior Noise Environment. Where acoustical analysis of a proposed project is required, the County shall identify and evaluate projects to ensure compliance to the California (Title 24) interior noise standards and additional requirement of this Element. Prior to the issuance of a building permit, an acoustical analysis, or equivalent documentation, must be submitted that demonstrates compliance with the standard for all buildings to be located in an area of exterior noise level greater than 60 dB CNEL. No formal analysis may be required if the standard can be achieved by the minimum noise reduction indicated in Table 10 of the General Plan Noise Element.	Consistent	The noise analysis performed for the Project follows all County guidelines and is therefore consistent with this policy.
Policy 5 – New Noise Generating Projects. The County shall identify and evaluate projects which have the potential to generate noise in excess of the Property Line Noise Limits. An acoustical analysis must be submitted which demonstrates the Project’s compliance.	Consistent	The noise analysis performed for the Project would be submitted to the County as part of this EIR and is therefore consistent with this policy.

**Noise Impact Zone**

A noise impact zone is an area that is likely to be exposed to significant noise. The County of Imperial defines a Noise Impact Zone as an area that may be exposed to noise greater than 60 dB CNEL or 75 dB Leq. The purpose of the noise impact zone is to define areas and properties where an acoustical analysis of a proposed project is required to demonstrate project compliance with land use compatibility requirements and other applicable environmental noise standards. The County of Imperial Noise Element defines any property meeting one of the following criteria as being in a noise impact zone:

- Within the noise impact zone distances to classified roadways, as indicated in Table 4.9-3
- Within 1,000 feet of the boundary of any railroad switching yard
- Within the existing or projected 60-dB CNEL contour of any airport, as shown in the County of Imperial Airport Land Use Compatibility Plan (ALUCP) or an approved airport master plan which supersedes the ALUCP. Note: Land use compatibility analysis, which may include an acoustical analysis, is required for projects proposed within the “airport vicinity” of each airport, as defined on the Compatibility Maps shown in the ALUCP. This may encompass a much larger area than the 60-dB CNEL contour.
- Within one-quarter mile (1,320 feet) of existing farmland that is in an agricultural zone

**Table 4.9-3: Roadway Noise Impact Zones**

Roadway Classification	Distance From Centerline (feet)
Interstate Highway	1,500
State Highway or Prime Arterial	1,100
Major Arterial	750
Secondary Arterial	450
Minor Collector	150
<b>Source:</b> General Plan County of Imperial	

Construction Noise Standards

The County of Imperial General Plan Noise Element requires that construction noise from a single piece of equipment or a combination of equipment shall not exceed 75 dB Leq when averaged over an 8-hour period and measured at the nearest sensitive receptor. This standard assumes a construction period of days or weeks. In cases where construction times are of extended length, the standard may be tightened so as not to exceed 75 dB Leq when averaged over a 1-hour period.

Noise Ordinance

The standards prescribed in the County Noise Element also establish that operation of construction equipment shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday, unless the County Planning and Development Services Director authorizes otherwise. No commercial construction operations are permitted on Sunday or holidays.

Property Line Standards

The property line noise limits listed in Table 4.9-4 apply to noise generation from one property to an adjacent property. The standards imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. These standards do not apply to construction noise. These standards are intended to be enforced through the County's code enforcement program on the basis of complaints received from persons impacted by excessive noise. It must be acknowledged that a noise nuisance may occur even though an objective measurement with a sound level meter is not available. In such cases, the County may act to restrict disturbing, excessive, or offensive noise that causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

**Table 4.9-4: Property Line Noise Limits**

Zone	Time	Applicable Limit One-Hour Average Sound Level (DB)
Residential Zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-Residential Zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial Zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55

**Table 4.9-4: Property Line Noise Limits**

Zone	Time	Applicable Limit One-Hour Average Sound Level (DB)
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75

**Source:** General Plan County of Imperial

**Note:** When the noise-generating property and the receiving property have different uses, the more restrictive standard shall apply. When the ambient noise level is equal to or exceeds the property line noise standard, the increase of the existing or proposed noise shall not exceed 3 dB  $L_{eq}$ .

New Noise-Generating Projects

The County shall identify and evaluate projects that have the potential to generate noise in excess of the property line noise limits specified in Table 4.9-4. An acoustical analysis must be submitted that demonstrates the projects’ compliance with the property line noise limits and/or required mitigation measures to reduce noise to acceptable levels. Mitigation may include a greater property line setback than required by the Land Use Ordinance, use of solid building walls without openings, noise-attenuation walls and/or landscaped earth berms, alternative construction materials or design, alternative traffic patterns, or other noise-reduction techniques.

Agricultural Noise/Right to Farm Ordinance

In recognition of the role of agriculture in the County, the Board of Supervisors has adopted a Right to Farm Ordinance (No. 1031). This ordinance requires a disclosure to owners and purchasers of property that is near agricultural lands or operations or included in an area zoned for agricultural purposes. The disclosure advises persons that discomfort and inconvenience from machinery and aircraft noise resulting from conforming and accepted agricultural operations are a normal and necessary aspect of living in the agricultural areas of the County.

If any residential or other noise-sensitive land use is proposed within one-quarter mile (1,320 feet) of existing farmland that is in an agricultural zone, such proposed project shall be required to prepare an acoustical analysis to evaluate potential noise impacts from farm operations on the proposed project. This may include an analysis of impact of operating farm machinery or trucks hauling farm products on public roads.

County of Imperial Land Use Ordinance Drilling Standards Applicable to Geothermal Projects

The County of Imperial Land Use Ordinance includes general drilling standards specific to geothermal projects (Division 17). This ordinance requires the implementation of County-specified noise control measures, including:

1. The drilling operator shall limit drilling noise to a sound level equivalent to CNEL 60 dBA as measured at the nearest human receptor location outside the parcel boundary. This level may be exceeded by 10 percent if the noise is intermittent and during daylight hours (Land Use Ordinance 91702.01[B]).



2. Diesel equipment used for drilling within 300 feet of any residence shall have hospital-type mufflers. Well-venting and testing at these wells shall be accompanied by the use of an effective muffling device or silencer (Land Use Ordinance 91702.01[D]).
3. Heavy truck traffic, well site preparation, pipe stacking, and hydroblasting (used for descaling operations) shall be limited to the hours between 7:00 a.m. and 7:00 p.m. for any wells within 300 feet of any residence. Exceptions may be made where soundproofing is provided or during summer hours to minimize effects of heat with notice to the planning director and approval thereof (Land Use Ordinance 91702.01[I and M]).
4. Impulse noises such as sudden steam venting shall be controlled by discharge through a muffler or other sound-attenuating system, as appropriate (Land Use Ordinance 91702.01[O]).
5. Drilling may be on a 24-hour basis provided the standards above are met (Land Use Ordinance 91702.01[S]).

#### **4.9.4      Thresholds of Significance**

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have a noise impacts if it would:

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|---------------------|--|
| <b>Threshold a)</b> | <b>Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</b>                            |
| <b>Threshold b)</b> | <b>Result in generation of excessive groundborne vibration or groundborne noise levels?</b>  |
| <b>Threshold c)</b> | <b>For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public us airport, expose people residing or working in the project area to excessive noise levels?</b> |

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR.

#### **4.9.5      Project Impact Analysis**

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|---------------------|---|
| <b>Threshold a)</b> | <b>Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</b> |
|---------------------|---|

The Proposed Project would consist of constructing and operating a commercial lithium hydroxide production plant that will utilize post-secondary clarifier brine produced from the geothermal fluid management activities on the neighboring HR1 power plant site as the resource process stream for the commercial production of lithium hydroxide monohydrate (LiOH), and zinc, and manganese products.

Noise would be created from construction of the facility as well as from operational activities that include noise created from onsite equipment as well as from movement and loading of materials. In addition, both construction and operation of the Proposed Project would generate additional worker and truck trips to the Project site that would create additional roadway noise. The onsite (construction and operational noise) and offsite roadway noise impacts have been analyzed separately below.

## **Onsite Noise Impacts**

### Onsite Construction Noise Impacts

Project construction would begin when all necessary permits are obtained, which is expected to be Quarter Three (Q3) of 2021. Construction is expected to be complete in Quarter Two (Q2) of 2023. All work would occur in one phase, with approximately 90 percent of work occurring during daylight hours over five or six days per week over an intermittent 24-month period. The remaining 10 percent of work would occur during nighttime hours to avoid extreme summer temperatures. Approximately 200 to 250 construction workers are anticipated at peak periods.

The General Plan Noise Element exempts construction activities from the applicable noise standards, provided that construction activities are limited to between 7 a.m. and 7 p.m. Monday thru Friday and between 9 a.m. and 5 p.m. on Saturday and do not exceed 75 dBA Leq at the nearby homes. All construction activities for the Proposed Project would occur within the allowable times for construction.

In order to determine the construction noise impacts at the nearest home that is located just over a mile (approximately 5,500 feet) north of the proposed construction activities, the construction equipment noise levels compiled by the FHWA have been utilized. The FHWA compiled noise level data regarding the noise-generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table 4.9-5 below provides a list of the construction equipment that would be utilized during construction of the Proposed Project that was obtained from the Project Description (Section 2.4.1 of this EIR), along with the associated measured noise emissions and measured percentage of typical equipment use per day. From this acquired data, FHWA developed the Roadway Construction Noise Model (RCNM). The RCNM, has been used to calculate the construction equipment noise emission levels at the nearest home (see Appendix I).

**Table 4.9-5: Construction Equipment Noise Characteristics and Noise Levels at Nearest Home**

Equipment	Acoustical Use Factor <sup>1</sup> (Percent)	Maximum Sound Level at 50 feet (dBA $L_{max}^*$ )	Maximum Sound Level at Nearest Home <sup>2</sup> (dBA $L_{max}$ )
Off-Highway Trucks (Flatbed Truck)	40	74.3	33.4
Rollers	20	80.0	39.2
Crawler Tractor (Dozer)	40	81.7	40.8
Excavators	40	80.7	39.9
Graders	40	85.0	44.2
Water Trucks (Dump Truck)	40	76.5	35.6
Compactors	40	83.2	42.4
Rubber-Tired Loaders (Front End Loader)	40	79.1	38.3
Scrapers	40	83.6	42.8
Cranes	16	80.6	39.7
Generator Sets	50	80.6	39.8
Concrete Pump (Pump)	50	80.9	40.1
Plate Compactors (Compactor)	20	83.2	42.4
Rough Terrain Forklifts (Gradall)	40	83.4	42.6
Skid Steer Loaders (Front End Loader)	40	79.1	38.3
Tractor/Loader/Backhoe (Tractor)	40	84.0	43.2
Aerial Lifts (Man Lift)	20	74.7	33.9
Welders	40	74.0	33.2
Air Compressors	40	77.7	36.8
Pavers	50	77.2	36.4
Paving Equipment	50	77.2	36.4

<sup>1</sup> Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.

<sup>2</sup> The nearest home is located as near as 5,500 feet to the north of the proposed construction activities.

\*  $L_{max}$  is the maximum sound level during a measurement period or a noise event.

Source: RCNM Version 1.1 (see Appendix I).

Table 4.9-5 shows that a grader would create the highest noise level of all anticipated equipment to be used during construction of the Proposed Project, with a maximum noise level of 44.2 dBA  $L_{max}$  (maximum sound level during a measurement period or a noise event) at the nearest home. The proposed construction activities would be below the County's 75-dBA noise standard at the nearest home. Additionally, the construction noise levels would be below the lowest measured ambient noise level in the Project vicinity of 48.5 dBA  $L_{eq}$  and would be below both the residential sound level limits provided in Section 90702.00 of the County's Municipal Code of 50 dB between 7 a.m. and 10 p.m. and 45 dB between 10 p.m. and 7 a.m. Therefore, construction activities for the Proposed Project are not limited to the allowable construction times as detailed in the General Plan Noise Element, since construction-related noise would be below both the ambient noise and allowable noise levels detailed in the Municipal Code at the nearest sensitive receptor. Therefore, onsite construction activities for the Proposed Project would

not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

#### Onsite Operation Noise Impacts

The operation of the Proposed Project would include the use of machinery to separate and purify the minerals obtained from the geothermal fluid management activities on the neighboring HR1 power plant. After the minerals are dried they will be packaged, palletized, staged, and loaded into truck for distribution. Most of the material processing activities would occur within structures and pipelines that would create nominal noise. The exact equipment that will be utilized in the Proposed Project has not yet been determined, so it is not possible to obtain noise specifications from the manufacturers. However, in general, operational activities would be less noise-intensive than what occurs in the adjacent HR1 power plant or the proposed HR2 power plant. According to the *Hudson Ranch II and Simbol Calipatria II Final EIR*, operation of the proposed HR2 power plant would create a noise level of 38 dBA at the nearest home, which is well below both the residential sound level limits provided in Section 90702.00 of the County's Municipal Code of 50 dB between 7 a.m. and 10 p.m. and 45 dB between 10 p.m. and 7 a.m. (HDR 2012). Since the Proposed Project would create lower operational noise levels than the proposed HR2 power plant, it can be reasonably concluded that operation of the Proposed Project would also be below the County's operational noise standards of 50 dB between 7 a.m. and 10 p.m. and 45 dB between 10 p.m. and 7 a.m. at the nearest home to the north. Therefore, onsite operational activities for the Proposed Project would not create a substantial permanent increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

#### **Offsite Roadway Noise Impacts**

Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires of moving vehicles. The level of traffic noise depends on three primary factors: (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The Proposed Project does not propose any uses that would require a substantial number of truck trips and would not alter the speed limit on any existing roadway. As such, the Proposed Project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the Project.

The County of Imperial General Plan Noise Element defines Noise Impact Zone as an area that is likely to be exposed to significant noise and details that the Roadway Noise Impact Zones exist within 1,100 feet of a State Highway or within 150 feet of a Collector Street. However, neither the General Plan nor the CEQA Guidelines define what constitutes a "substantial permanent increase to ambient noise levels"; as such, this impact analysis has utilized guidance from the FTA for a moderate impact that has been detailed above in Table 4.9-1.

The potential offsite traffic noise impacts created by the ongoing operations of the Proposed Project have been analyzed through utilization of the FHWA model. The FHWA model noise calculation spreadsheets that show the parameters utilized in the FHWA model are provided in Appendix I. The Proposed Project's offsite traffic noise impacts have been analyzed for the roadways studied in the Traffic Impact Analysis (Linscott, Law & Greenspan Engineers 2021) and the homes located within 1,100 feet of the roadway. The noise impacts have been calculated for the existing with construction, existing with Project operations, and cumulative with Project operations conditions, which are discussed below.

Existing Year with Project Construction Traffic Conditions

The proposed Project’s potential offsite noise impacts have been calculated through a comparison of the Existing scenario with the Existing with Project Construction traffic scenario. The results of this comparison are shown in Table 4.9-6.

**Table 4.9-6: Existing Year with Project Construction Traffic Noise Contributions**

Roadway	Segment	dBA CNEL at Nearest Receptor <sup>a</sup>			Increase Threshold <sup>b</sup>
		Existing	Existing With Project Construction	Project Contribution	
Highway 111	North of Hazard Road	60.5	60.6	0.1	+2 dBA
Highway 111	South of McDonald Road	62.2	62.2	0.0	+2 dBA
Highway 111	South of Sinclair Road	64.5	64.7	0.2	+1 dBA

**Notes:**

- a. Distances to nearest residential uses are shown in Appendix I. Noise levels do not take into account existing noise barriers.
- b. Increase Threshold obtained from the FTA’s allowable noise impact exposures.

**Source:** FHWA Traffic Noise Prediction Model FHWA-RD-77-108 (see Appendix I).

Table 4.9-6 shows that for the existing conditions, the Proposed Project’s temporary noise increases to the nearby homes from the generation of additional vehicular traffic during construction activities would not exceed the FTA’s allowable increase thresholds detailed above. Therefore, construction of the Proposed Project would not result in a substantial temporary increase in ambient noise levels for the existing conditions. Impacts would be less than significant.

Existing Year with Operational Traffic Conditions

The Proposed Project’s potential offsite noise impacts have been calculated through a comparison of the existing year without Project scenario to the existing year with Project operations scenario. The results of this comparison are shown in Table 4.9-7.

**Table 4.9-7: Existing Year with Project Operational Traffic Noise Contributions**

Roadway	Segment	dBA CNEL at Nearest Receptor <sup>a</sup>			Increase Threshold <sup>b</sup>
		Existing	Existing With Project Operations	Project Contribution	
Highway 111	North of Hazard Road	60.5	60.5	0.0	+2 dBA
Highway 111	South of McDonald Road	62.2	62.4	0.2	+2 dBA
Highway 111	South of Sinclair Road	64.5	64.6	0.1	+1 dBA

**Notes:**

- a. Distances to nearest residential uses are shown in Appendix I. Noise levels do not take into account existing noise barriers.
- b. Increase Threshold obtained from the FTA’s allowable noise impact exposures.

**Source:** FHWA Traffic Noise Prediction Model FHWA-RD-77-108 (see Appendix I).

Table 4.9-7 shows that for the existing year conditions, the effects of the Proposed Project’s permanent noise increases to the nearby homes from the generation of additional vehicular traffic during operation of the Project would not exceed the FTA’s allowable increase thresholds detailed above. Therefore, operation of the Proposed Project would not result in a substantial permanent increase in ambient noise levels for the existing year conditions. Impacts would be less than significant.

Therefore, roadway vehicle noise impacts resulting from both construction and ongoing operation of the Proposed Project would be less than significant.

**4.9.6 Cumulative Impacts**

Cumulative impacts are defined in CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Stated in another way, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts” (CEQA Guidelines Section 15130 [a])[1]).

Due to the localized nature of noise and due to the fact that the nearest sensitive receptor to the Project site is a single-family home located over a mile north of the Project site, cumulative noise impacts would be limited to offsite roadway noise impacts. The cumulative roadway noise impacts have been analyzed in the same manner detailed above for the Project roadway noise impacts that included utilization of the FHWA model. The FHWA model noise calculation spreadsheets that show the parameters utilized in the FHWA model are provided in Appendix I.

**Cumulative Projects Operational Traffic Conditions**

The Proposed Project’s potential offsite noise impacts have been calculated through a comparison of the existing year plus cumulative projects without Project scenario to the existing year plus cumulative projects with Project operations scenario. The results of this comparison are shown in Table 4.9-8.

**Table 4.9-8: Cumulative Projects with Project Operational Traffic Noise Contributions**

Roadway	Segment	dBA CNEL at Nearest Receptor <sup>a</sup>			Increase Threshold <sup>b</sup>
		Existing	Existing With Project Operations	Project Contribution	
Highway 111	North of Hazard Road	60.9	61.0	0.1	+2 dBA
Highway 111	South of McDonald Road	62.7	62.8	0.1	+2 dBA
Highway 111	South of Sinclair Road	64.9	65.0	0.1	+1 dBA

**Notes:**

- a. Distances to nearest residential uses are shown in Appendix I. Noise levels do not take into account existing noise barriers.
- b. Increase Threshold obtained from the FTA’s allowable noise impact exposures.

**Source:** FHWA Traffic Noise Prediction Model FHWA-RD-77-108 (see Appendix I).

Table 4.9-8 shows that for the existing year plus cumulative projects conditions, the Proposed Project’s permanent noise increases to the nearby homes from the generation of additional vehicular traffic during operation of the Project would not exceed the FTA’s allowable increase thresholds detailed above.

Therefore, operation of the Proposed Project would not result in a substantial permanent increase in ambient noise levels for the existing year with cumulative projects conditions. Impacts would be less than significant.

**4.9.7 Mitigation Measures**

No mitigation measures are required, as all Project impacts regarding noise are less than significant.

**4.9.8 Level of Significance After Mitigation**

No mitigation measures are required; impacts related to noise would remain less than significant.