

# Noise

## Chapter 3.12

### SUMMARY OF FINDINGS

The proposed Project will result in less than significant impacts related to Noise. No mitigation measures will be required. A detailed review of potential impacts is provided in the analysis below.

### INTRODUCTION

#### California Environmental Quality Act (CEQA) Requirements

This section of the Draft Environmental Impact Report (DEIR) addresses potential impacts related to Noise. As required in Section 15126, all phases of the proposed Project will be considered as part of the potential environmental impact.

As noted in 15126.2 (a), “[a]n EIR shall identify and focus on the significant environmental effects of the proposed Project. In assessing the impact of a proposed Project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the Project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the Project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there. Similarly, the EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas.”<sup>1</sup>

The environmental setting provides a description of the Noise Setting in Tulare County. The regulatory setting provides a description of applicable Federal, State, and Local regulatory policies that were developed in part from information contained in the Tulare County 2030

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<sup>1</sup> 2012 CEQA Guidelines, Section 15126.2 (a)

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General Plan, the Tulare County General Plan Background Report and/or the Tulare County General Plan Revised DEIR incorporated by reference and summarized below. Additional documents utilized are noted as appropriate. A description of the potential impacts of the proposed Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

Thresholds of Significance

- Exceed Tulare County Standards for Noise Levels
- Expose people of excessive groundborne vibration
- Expose people to excessive airport/airstrip noise

**ENVIRONMENTAL SETTING**

“Noise in the community has often been cited as being a health problem, not in terms of actual damage such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation, and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being are the bases for land use planning policies preventing exposure to excessive community noise levels.”<sup>2</sup>

“Noise sources are commonly grouped into two major categories: transportation and non-transportation noise sources. Transportation noise sources include surface traffic on public roadways, railroad line operations, and aircraft in flight. Non-transportation (or fixed), noise sources, commonly consist of industrial activities, railroad yard activities, small mechanical devices (lawnmowers, leaf blowers, air conditioners, radios, etc.), and other sources not included in the traffic, railroad and aircraft category.”<sup>3</sup>

“Noise level data collected during continuous monitoring included the hourly Leq and Lmax and the statistical distribution of noise levels over each hour of the sample period. The community noise survey results indicate that typical noise levels in noise-sensitive areas of the unincorporated areas of Tulare County are in the range of 29-65 dB Ldn. As would be expected, the quietest areas are those that are removed from major transportation-related noise sources and industrial or stationary noise sources.”<sup>4</sup>

“The Safety section of the Tulare County General Plan Background Report and the Tulare County General Plan 2030 Update serve as the primary policy statement by the County for implementing policies to maintain and improve the noise environment in Tulare County. The

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<sup>2</sup> TCAG 2011 Regional Transportation Plan Draft Subsequent EIR, page 151

<sup>3</sup> Ibid., page 153

<sup>4</sup> General Plan Background Report, page 8-77

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General Plan presents Goals and Objectives relative to planning for the noise environment within the County. Future noise/land use incompatibilities can be avoided or reduced with implementation of the Tulare County noise criteria and standards. Tulare County realizes that it may not always be possible to avoid constructing noise sensitive developments in existing noisy areas and therefore provides noise reduction strategies to be implemented in situations with potential noise/land use conflicts.

**Table 3.12-1** shows Tulare County’s Maximum Acceptable Ambient Noise Exposure for Various Land Uses. During preparation of this NSR, conformance of the proposed project with the County’s Maximum Acceptable Ambient Noise Exposure for Various Land Uses is used to evaluate potential noise impacts and provides criteria for environmental impact findings and conditions for project approval.”<sup>5</sup>

**Table 3.12-1  
Maximum Acceptable Ambient Noise Exposure for Various Land Uses**

Land Use	Suggested Maximum Ldn
Residential – Low Density	60
Residential – High Density	65
Transient Lodging	65
Schools, libraries, churches, hospitals	65
Playgrounds, park	65
Commercial	70
Industrial	75

Notes: Ldn = Day-Night Average Sound Level

Source: Noise Report

## **REGULATORY SETTING**

### ***Federal Agencies & Regulations***

#### Federal Highways Administration (FHWA) Highway Traffic Noise Prediction methodology

“In March 1998, the Federal Highway Administration (FHWA) released the Traffic Noise Model, Version 1.0 (FHWA TNM®). It was developed as a means for aiding compliance with policies and procedures under FHWA regulations. Since its release in March 1998, Version 1.0a was released in March 1999, Version 1.0b in August 1999, Version 1.1 in September 2000, Version 2.0 in June 2002, Version 2.1 in March 2003 and the current version, Version 2.5 in April 2004. The FHWA TNM is an entirely new, state-of-the-art computer program used for predicting noise impacts in the vicinity of highways. It uses advances in personal computer hardware and software to improve upon the accuracy and ease of modeling highway noise, including the design of effective, cost-efficient highway noise barriers.”<sup>6</sup>

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<sup>5</sup> Noise Study Report, VRPA Technologies, pages 8 to 9

<sup>6</sup> Federal Highway Administration website, Traffic Noise Model, [http://www.fhwa.dot.gov/environment/noise/traffic\\_noise\\_model/](http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/)

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Federal Aviation Administration (FAA)

“Aircraft operated in the U.S. are subject to certain federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight, and number of engines. Pursuant to the federal Airport Noise and Capacity Act of 1990, the FAA established a schedule for complete transition to Part 36 "Stage 3" standards by year 2000. This transition schedule applies to jet aircraft with a maximum takeoff weight in excess of 75,000 pounds, and thus applies to passenger and cargo airlines, but not to operators of business jets or other general aviation aircraft.”<sup>7</sup>

Federal Railway Administration (FRA) and the Federal Transit Administration (FTA)

“The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to groundborne vibration levels of 0.5 PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 VdB.”<sup>8</sup>

***State Agencies & Regulations***

California Noise Insulation Standards

“The California Noise Insulation Standards found in the California Code of Regulations, Title 24, set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is DNL 45 dB in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dB.”<sup>9</sup>

California's Airport Noise Standards

“The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts on land uses in their vicinities. The State of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations, identify a noise exposure level of CNEL 65 dB as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.”<sup>10</sup>

California Department of Transportation (Caltrans)

“The State of California establishes noise limits for vehicles licensed to operate on public roads.

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<sup>7</sup> TCAG 2011 Regional Transportation Plan Draft Subsequent EIR, page 152

<sup>8</sup> Ibid., page 152

<sup>9</sup> Ibid., page 153

Ibid.R, page 152

For heavy trucks, the State passby standard is consistent with the federal limit of 80 dB. The State passby standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline.”<sup>11</sup>

### ***Local Policy & Regulations***

#### **Tulare County General Plan Policies**

The General Plan has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the proposed Project are listed below.

#### **HS-8.1 Economic Base Protection**

The County shall protect its economic base by preventing the encroachment of incompatible land uses on known noise-producing industries, railroads, airports, and other sources.

#### **HS-8.2 Noise Impacted Areas**

The County shall designate areas as noise-impacted if exposed to existing or projected noise levels that exceed 60 dB Ldn (or Community Noise Equivalent Level (CNEL)) at the exterior of buildings.

#### **HS-8.3 Noise Sensitive Land Uses**

The County shall not approve new noise sensitive uses unless effective mitigation measures are incorporated into the design of such projects to reduce noise levels to 60 dB Ldn (or CNEL) or less within outdoor activity areas and 45 dB Ldn (or CNEL) or less within interior living spaces.

#### **HS-8.4 Airport Noise Contours**

The County shall ensure new noise sensitive land uses are located outside the 60 CNEL contour of all public use airports.

#### **HS-8.6 Noise Level Criteria**

The County shall ensure noise level criteria applied to land uses other than residential or other noise-sensitive uses are consistent with the recommendations of the California Office of Noise Control (CONC).

#### **HS-8.8 Adjacent Uses**

The County shall not permit development of new industrial, commercial, or other noise-generating land uses if resulting noise levels will exceed 60 dB Ldn (or CNEL) at the boundary of areas designated and zoned for residential or other noise-sensitive uses, unless it is determined to be necessary to promote the public health, safety and welfare of the County.

#### **HS-8.10 Automobile Noise Enforcement**

The County shall encourage the CHP, Sheriff's office, and local police departments to actively enforce existing sections of the California Vehicle Code relating to adequate vehicle mufflers, modified exhaust systems, and other amplified noise.

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<sup>11</sup> TCAG 2011 Regional Transportation Plan Draft Subsequent EIR, page 152

**HS-8.11 Peak Noise Generators**

The County shall limit noise generating activities, such as construction, to hours of normal business operation (7 a.m. to 7 p.m.). No peak noise generating activities shall be allowed to occur outside of normal business hours without County approval.

**HS-8.13 Noise Analysis**

The County shall require a detailed noise impact analysis in areas where current or future exterior noise levels from transportation or stationary sources have the potential to exceed the adopted noise policies of the Health and Safety Element, where there is development of new noise sensitive land uses or the development of potential noise generating land uses near existing sensitive land uses. The noise analysis shall be the responsibility of the project applicant and be prepared by a qualified acoustical engineer (i.e., a Registered Professional Engineer in the State of California, etc.). The analysis shall include recommendations and evidence to establish mitigation that will reduce noise exposure to acceptable levels (such as those referenced in Table 10-1 of the Health and Safety Element).

**HS-8.14 Sound Attenuation Features**

The County shall require sound attenuation features such as walls, berming, heavy landscaping, between commercial, industrial, and residential uses to reduce noise and vibration impacts.

**HS-8.15 Noise Buffering**

The County shall require noise buffering or insulation in new development along major streets, highways, and railroad tracks.

**HS-8.16 State Noise Insulation**

The County shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.

**HS-8.18 Construction Noise**

The County shall seek to limit the potential noise impacts of construction activities by limiting construction activities to the hours of 7 am to 7pm, Monday through Saturday when construction activities are located near sensitive receptors. No construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors.

**HS-8.19 Construction Noise Control**

The County shall ensure that construction contractors implement best practices guidelines (i.e. berms, screens, etc.) as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

## IMPACT EVALUATION

### Would the project:

- 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?**

Project Impact Analysis:                    *No Impact*

“A continuous sound can be described by its frequency (pitch) and its amplitude (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch, like the low notes on a piano, whereas high-frequency sounds are high in pitch, like the high notes on a piano. Frequency is expressed in terms of oscillations, or cycles, per second. Cycles per second are commonly referred to as Hertz (Hz). A frequency of 250 cycles per second is referred to as 250 Hz. High frequencies are sometimes more conveniently expressed in units of kilo-Hertz (kHz), or thousands of Hertz. The extreme range of frequencies that can be heard by the healthiest human ear spans from 16–20 Hz on the low end to about 20,000 Hz (or 20 kHz) on the high end.”<sup>12</sup>

“Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces an SPL of 70 dBA as it passes an observer, two cars passing simultaneously would not produce 140 dBA; they would, in fact, combine to produce 73 dBA. When two sounds of equal SPL are combined, they will produce a combined SPL 3 dBA greater than the original individual SPL. In other words, sound energy must be doubled to produce a 3 dBA increase. If two sound levels differ by 10 dBA or more, the combined SPL is equal to the higher SPL; in other words, the lower sound level does not increase the higher sound level.”<sup>13</sup>

“Because of the ability of the human ear to detect a wide range of sound pressure fluctuations, sound pressure levels are expressed in logarithmic units called decibels. The sound pressure level in decibels is calculated by taking the log of the ratio between the actual sound pressure and the reference sound pressure squared. The reference sound pressure is considered the absolute hearing threshold. In addition, because the human ear is not equally sensitive to all sound frequencies, a specific frequency-dependent rating scale was devised to relate noise to human sensitivity. A dBA scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. The basis for comparison is the faintest sound audible to the average ear at the frequency of maximum sensitivity. This dBA scale has been chosen by most authorities for purposes of environmental noise regulation.”<sup>14</sup>

“To assess existing noise conditions, VRPA Technologies’ staff compiled current traffic counts and existing geometric conditions. Staff conducted noise level measurements at the project site and tabulated the results. The weather during the time of the noise measurements

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<sup>12</sup> Noise Study Report, VRPA Technologies, page 6

<sup>13</sup> Ibid., page 6

<sup>14</sup> Ibid., page 4

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consisted of sunshine and wind speeds of less than 5 mph. The purpose of the measurements was to evaluate the accuracy of the model in describing traffic noise exposure within the project site.

The locations for each field receptor location are described below in **Table 3.12-2** and are geographically depicted in Figure 4. Receptors 3, 4, 5, and 6 were added to the analysis and represent an existing school site and residential homes. These locations were not measured in the field but were evaluated for potential impacts from the proposed improvements at the Project site. It is anticipated that the Project site will experience an increase of approximately 35 daily trips, which will consist of heavy trucks, rendering dump trucks and liquid tanker trucks. For purposes of this analysis, it was assumed that 18 additional trips will enter and exit the site during the afternoon peak hour. This represents approximately half of the overall trips anticipated to be added to the daily traffic operations.

In addition to the increase in Project traffic, the Harvest Power site is proposing to add two (2) loaders, one (1) natural gas compressor, and possibly one (1) electric crane. During the site evaluation, it was determined that with the current equipment, the site experiences noise levels of approximately 56.8 Leq(h) dB at the entrance to the facility staging area. The following is a list of equipment that currently exists on the Project site:

- ✓ Five (5) loaders (4 Volvo / 1 Cat)
- ✓ 4600 Morbark Grinder
- ✓ 830 Power Screen
- ✓ Komptech L-3 Screen
- ✓ Komptech Hurricane Screen
- ✓ Two (2) Water Tractors
- ✓ Two (2) Roll Off Trucks

The equipment that is currently being used is not operated continuously during operation hours, but used as necessary for Project operations. The Tulare County General Plan Update has identified a sound level of 88 dBA for front-end loaders at a distance of 50 feet. The natural gas compressor will produce a decibel reading of approximately 70 dBA at a distance of 50 feet. Typically, cranes can generate sound levels of approximately 85 dBA at a distance of 50 feet. The Project is anticipated to add an electric crane, which is much quieter than a typical crane. However, for purposes of analyzing the Project's potential impacts, noise from a typical crane will be utilized.”<sup>15</sup>

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<sup>15</sup> Noise Study Report, VRPA Technologies, pages 12 to 13

Figure 3.12-1  
Map of Sensitive Receptors

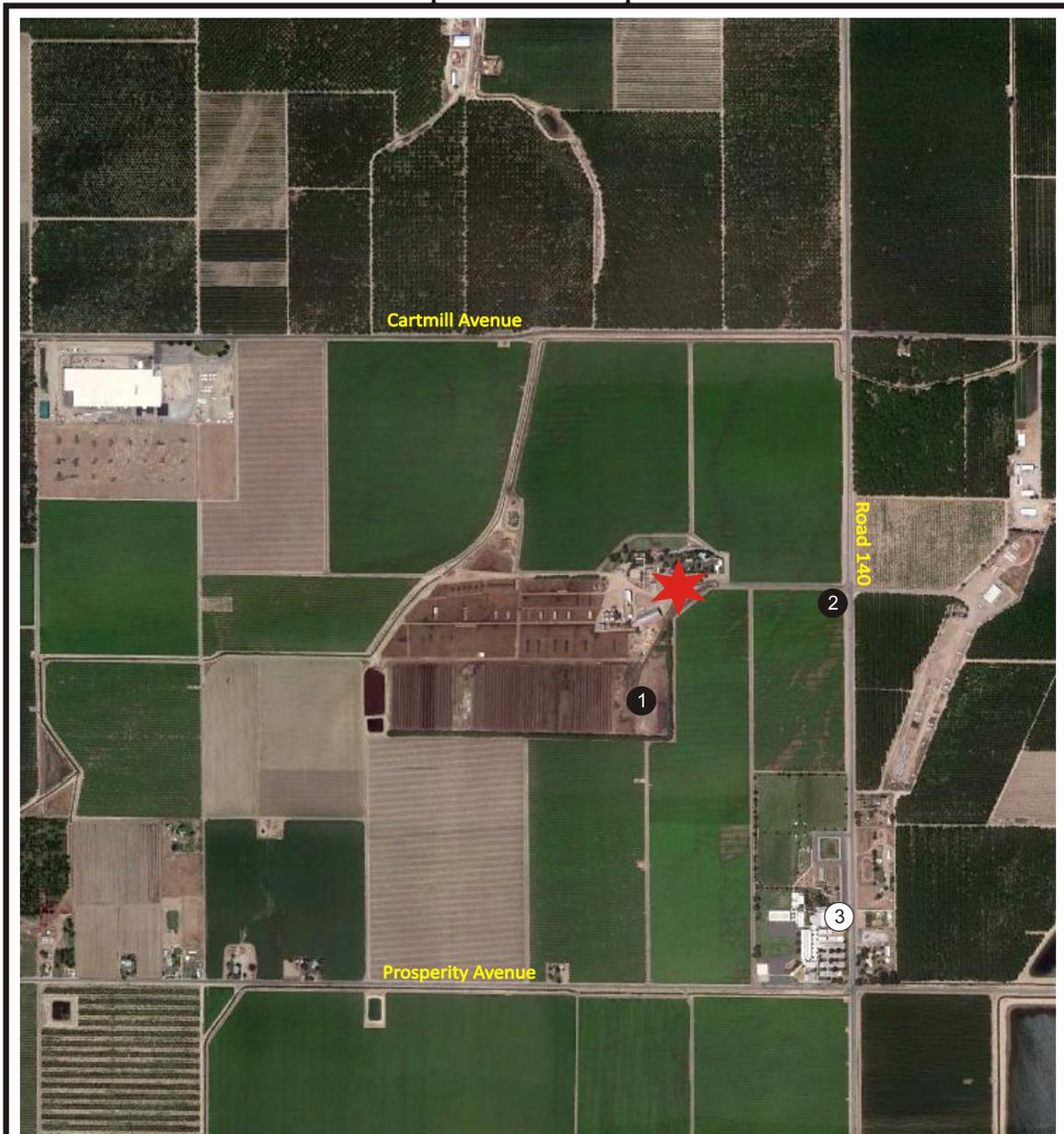


FIGURE 4  
Noise Receptor Locations

- LEGEND
- ★ Project Location
  - # Field Receptor Locations
  - ⊕ Modeled Receptor Locations



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“There are three (3) homes located approximately 700 feet to the north of the entrance of the facility staging area as depicted in [Figure 3.12-1]. FHWA has identified that when buildings or trees/shrubs break the line of sight from the sound source to the receiver a decibel reduction of 3 – 5 dBs is plausible. Figure 6 also shows the approximate line of sight from the staging area entrance to the residential homes. There are several buildings between the staging area entrance and the homes in addition to the vast amount of trees/shrubs that surround the homes. A decibel reduction of 3 dB’s was applied to noise levels at the residential locations as a result of the building structures and trees/shrubs that exist between the staging area entrance and the residential homes. Based on the distance from the source area, it is anticipated that the noise levels experienced at the residential homes from the new equipment will reach approximately 53 dBs.”<sup>16</sup>

**Table 3.12-2  
Noise Impacts**

Receptor Type	Receptor Number	Existing Noise Level Leq(h) dBA	Existing Noise Level Modeled Leq(h) DbA	Existing Plus Project Noise Level Leq(h) dBA	Impact
Project Site	1	56.8	42.1	70.4	None
Agricultural Site	2	64.8	72.0	66.0	None
School Site	3	--*	66.4	60.5	None
Residence	4	--**	40.4	58.1	None
Residence	5	--**	37.9	57.4	None
Residence	6	--**	37.2	57.1	None
* Was not measured in the field					

Source: Noise Report

VRPA Technologies established existing traffic noise levels based on previously collected traffic data (Table 3.12-2) and Traffic Noise Model (TNM) Version 2.5. TNM 2.5 is an FHWA Traffic Noise Prediction Program calculates both existing noise level and the maximum acceptable noise based on expected traffic growth. Locations of potential sensitive receptors are shown on Figure 3.12-1. Noise levels were estimates at various receptors that will be affected by the proposed Project. As noted in the Table 3.12-2, the proposed Project will not result in noise impacts. No project specific impacts related to this checklist item will occur.

<sup>16</sup> Noise Study Report, VRPA Technologies, page 14

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Cumulative Impact Analysis:     ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

When the project is added to the background or existing noise levels, an increase in noise level is expected to occur. **Table 3.12-3** shows that the sensitive receptors will experience an increase of no more than 3 L<sub>eq</sub> dBA as a result of the proposed Project. Under Future Year conditions, none of the sensitive receptor locations in both the with and without Project scenarios exhibit predicted noise impacts that exceed Tulare County’s Maximum Acceptable Ambient Noise Exposure for Various Land Uses. No cumulative impacts related to this checklist item will occur.

**Table 3.12-3  
Noise Impacts for Future Conditions**

Receptor Type	Receptor Number	Year 2035 No Project Leq(h) dBA	Year 2035 Plus Project Noise Level Leq(h) dBA	Impact
Project Site	1	57.2	70.4	None
Agricultural Site	2	67.1	67.5	None
School Site	3	61.5	61.9	None
Residence	4	56.9	58.6	None
Residence	5	55.0	57.8	None
Residence	6	54.5	57.0	None

Source: Noise Report

Mitigation Measures:

**None Required.**

Conclusion:                             ***No Impact***

As noted earlier, no Project specific or cumulative impacts related to this checklist item will occur.

**b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

Project Impact Analysis:             ***Less than Significant Impact***

Typical outdoor sources of perceptible ground borne vibration consists of construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be

transient, random, or continuous. The proposed Project will consist of composting, and anaerobic digester, and a natural gas station. None of these elements will create significant vibration during operations. Although some vibration may occur during construction, any construction vibration will be temporary, short-term, and will not be perceptible by receptors outside the project site. Less than significant impacts Project specific impacts will occur.

Cumulative Impact Analysis:     ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

Operations of the proposed Project will not result in any long-term vibration impacts. As such, cumulative impacts related to this checklist item will not occur.

Mitigation Measures:

**None Required.**

Conclusion:                             ***Less than Significant Impact***

As noted above, less than significant Project specific impacts related to this checklist item will occur and no cumulative impacts related to this checklist item will occur.

**c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

Project Impact Analysis:             ***Less than Significant Impact***

The proposed Project site is set in a rural area, east of the City of Tulare. The site is predominately surrounded by agriculture, including row crops and a dairy. There are three residences near the Project site that will be located approximately 700 feet from the anaerobic digester. The Sundale Preschool and Elementary School is less than one (1) mile from the proposed site. The ambient noise environment in the vicinity of the proposed Project site is dominated by agricultural-related uses.

As noted above in the response to 3.12 a), the proposed Project will increase ambient noise levels; however, the increase in noise levels will not exceed Tulare County's Maximum Acceptable Ambient Noise Exposure for Various Land Uses. Therefore, less than significant Project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis:     ***Less than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As noted earlier in the response to 3.12 a), the proposed Project will increase ambient noise levels; however, the increase in noise levels will not exceed Tulare County's Maximum Acceptable Ambient Noise Exposure for Various Land Uses. Therefore, less than significant cumulative impacts related to this checklist item will occur.

Mitigation Measures:

**None Required.**

Conclusion:                             ***Less than Significant Impact***

As noted above, less than significant Project specific and cumulative impacts will occur.

**d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

Project Impact Analysis:             ***Less than Significant Impact***

Temporary and short-term construction noise will occur as the anaerobic digester and natural gas station is built. This construction noise will not involve pile drivers or other construction activities that will significantly impact off-site receptors.

In terms of periodic operational noise, composting operations will require equipment use. This equipment use was evaluated in the noise analysis and it was determined that noise levels will not exceed Tulare County Noise level Standards. As such, less than significant Project specific impacts will occur.

Cumulative Impact Analysis:       ***Less than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

Temporary construction related noise will not have a cumulative impact unless significant temporary noise levels from multiple sources will occur at the same time. There are no projects that will significantly increase temporary noise levels in the vicinity of the Project site.

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Periodic operational noise levels will increase; however, this increase will not exceed thresholds. In addition, cumulative periodic noise levels will not exceed threshold. Therefore, a less than significant impact related to this checklist item will occur.

Mitigation Measures:

**None Required.**

Conclusion: ***Less than Significant Impact***

As noted above, less than significant Project specific and cumulative impacts related to this checklist item will occur.

- 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?**

Project Impact Analysis: ***No Impact***

The Visalia Municipal Airport is located approximately nine (9) miles northwest of the proposed Project site. Mefford Field (in the City of Tulare) is located approximately six (6) miles southwest of the proposed Project site. The Project site is located far enough away from these airports that exposure to airport noise is not an issue. No Project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As noted earlier, the Project site is not located within 2 miles of an airport. No cumulative impacts related to this checklist item will occur.

Mitigation Measures:

**None Required.**

Conclusion: ***No Impact***

As noted earlier, the proposed Project will not result in either Project specific or cumulative impacts related to this checklist item.

**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?**

Project Impact Analysis:            *No Impact*

The Project site is not near any known operating airstrips. Potential exposure to private airstrip noise is not an issue as there are no private airstrips near the Project site. No Project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis:    *No Impact*

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As noted earlier, the Project site is not located near a private airstrip. No cumulative impacts related to this checklist item will occur.

Mitigation Measures:

**None Required.**

Conclusion:                            *No Impact*

As noted earlier, the proposed Project will not result in either Project specific or cumulative impacts related to this checklist item.

## **DEFINITIONS/ACRONYMS**

### Definitions

“Noise is often described as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. Researchers have generally agreed that A-weighted sound pressure levels (sound levels) are well correlated with subjective reaction to noise. Variations in sound levels over time are represented by statistical descriptors, and by time-weighted composite noise metrics such as the Day/Night Average Level (Ldn).”<sup>17</sup> In addressing noise impacts, the following key terms are outlined and explained below:

#### **Ambient Noise**

“The total noise associated with a given environment and usually comprising sounds from many sources, both near and far.”

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<sup>17</sup> TCAG 2011 Regional Transportation Plan Draft Subsequent EIR, page 150

**Attenuation**

“Reduction in the level of sound resulting from absorption by the topography, the atmosphere, distance, barriers, and other factors.

**A-weighted decibel (dBA)**

A unit of measurement for noise based on a frequency weighting system that approximates the frequency response of the human ear.

**Community Noise Equivalent Level (CNEL)**

Used to characterize average sound levels over a 24-hour period, with weighting factors included for evening and nighttime sound levels. Leq values (equivalent sound levels measured over a 1-hour period - see below) for the evening period (7:00 p.m. to 10:00 p.m.) are increased by 5 dB, while Leq values for the nighttime period (10:00 p.m. to 7:00 a.m.) are increased by 10 dB. For a given set of sound measurements, the CNEL value will usually be about 1 dB higher than the Ldn value (see below). In practice, CNEL and Ldn are often used interchangeably.

**Decibel (dBA)**

A unit of measurement describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure (which is 20 micronewtons per square meter).

**Day-Night Average Sound Level (Ldn)**

Average sound exposure over a 24-hour period. Ldn values are calculated from hourly Leq values, with the Leq values for the nighttime period (10:00 p.m. to 7:00 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime noises.”

**Equivalent Sound Level (Leq)**

The level of a steady-state sound that, in a stated time period and at a stated location, has the same sound energy as the time-varying sound (approximately equal to the average sound level). The equivalent sound level measured over a 1-hour period is called the hourly Leq or Leq (h).

**Lmax and Lmin**

The maximum and minimum sound levels, respectively, recorded during a measurement period. When a sound meter is set to the “slow” response setting, as is typical for most community noise measurements, the Lmax and Lmin values are the maximum and minimum levels recorded typically for 1-second periods.

**Percentile-Exceeded Sound Level (Lx)**

The sound level exceeded during a given percentage of a measurement period. Examples include L10, L50, and L90. L10 is the A-weighted sound level that is exceeded 10% of the measurement period, L50 is the level exceeded 50% of the period, and so on. L50 is the median sound level measured during the measurement period. L90, the sound level exceeded 90% of the time, excludes high localized sound levels produced by nearby sources such as single car passages or bird chirps. L90 is often used to represent the background sound level. L50 is also used to provide a less conservative assessment of the background sound level.

**Sensitive Receptors**

Sensitive receptors are defined to include residential areas, hospitals, convalescent homes and facilities, schools, and other similar land uses.”<sup>18</sup>

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<sup>18</sup> General Plan Background Report, pages 8-46 to 8-47

## **REFERENCES**

Tulare County 2030 General Plan, August 2012

Tulare County General Plan Background Report, February 2010

TCAG 2011 Regional Transportation Plan Draft Subsequent Environmental Impact Report, April 30, 2010

Noise Study Report , VRPA Technologies, Inc., November 30, 2012

2012 CEQA Guidelines

Federal Highway Administration website, Traffic Noise Model,  
[http://www.fhwa.dot.gov/environment/noise/traffic\\_noise\\_model/](http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/)