

Noise

Chapter 3.12

SUMMARY OF FINDINGS

The proposed Project will result in *Less Than Significant Impacts with Mitigation* related to Noise. A Noise Study conducted by consultant AMBIENT Air Quality and Noise Consulting is included as Appendix F of this document which is used as the basis for determining that the proposed Project will result in less than significant impacts. A detailed review of potential impacts is provided in the following analysis.

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 Section 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.”¹

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 General Plan, Tulare County General Plan Background Report, and/or Tulare County 2030 General Plan EIR incorporated by reference and summarized below. Additional documents

¹ CEQA Guidelines, Section 15126.2 (a)

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.”²

“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.”³

“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.”⁴

A noise assessment has been prepared by AMBIENT Air Quality & Noise Consulting (AMBIENT), to determine if significant noise impacts would be expected to occur as a result of the proposed Project, and to describe mitigation measures for noise if significant impacts are determined. The noise study, “Noise Impact Assessment For Papich Construction Asphalt Batch Plant Project, Tulare County, CA,” in its entirety, is included as Appendix F of this DEIR.

Land uses located in the vicinity of the proposed project site consist predominantly of agricultural lands. The nearest noise-sensitive land uses are rural residential dwellings, the nearest of which is located approximately 1,000 feet (0.2 miles) north of the proposed Project site, adjacent to and east of Road 68. Other nearby rural residential dwellings are located in

² Tulare County Association of Governments., 2011 Regional Transportation Plan Draft Subsequent EIR, Page 151

³ Ibid. Page 153

⁴ Tulare County General Plan 2030 Update Background Report, page 8-77

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excess of approximately 1,500 feet from the project site. Nearby noise-sensitive land uses are depicted in Figure 3.12-1.

Measured Off-Site Ambient Noise Levels

To document existing ambient noise levels in the project area, ambient noise measurements were conducted on July 16th and 17th, 2014. Noise measurements were conducted using a Larson Davis Laboratories, Type I, Model 820 integrating sound-level meter positioned at a height of approximately 5 feet above ground level. The meter was calibrated before use and is certified to be in compliance with ANSI specifications.

Short-term (i.e., 10 minute) noise measurement surveys were conducted at four locations, near the southern, western, eastern, and northern boundaries of the project site. Noise measurement locations are depicted in Figure 3.12-1. Short-term noise measurement data corresponding to these measurement locations are summarized in Table 3.12-1. Based on the measurements conducted, ambient noise levels at the measurement locations generally range from approximately 63 to 73 dBA L_{eq} . Maximum intermittent noise levels were primarily associated with vehicle passbys near area roadways and ranged from approximately 76 to 84 dBA L_{max} .

Table 3.12-1
Summary of Short-Term Ambient Noise Measurement Data

Site	Location	Date	Time Period	Measured Noise Levels (dBA)	
				L_{eq}	L_{max}
NM-1	Road 68. Approximately 48 feet from road centerline.	07/16/14	16:15-16:40	65.2	79.9
		07/16/14	20:30-20:50	64.2	81.4
		07/17/14	05:10-05:20	60.4	76.6
NM -2	Highway 198. Approximately 51 feet from road centerline.	07/16/14	16:50-17:00	71.8	83.8
		07/16/14	17:38-17:48	72.7	81.6
		07/16/14	21:00-21:20	68.5	80.7
NM -3	Road 68 at Avenue 298. Approximately 48 feet from road centerline.	07/16/14	18:05-18:10	63.1	78.4

Refer to Figure 3.12-1 for noise monitoring locations.

A long-term (24-hour) noise measurement survey was also conducted at Measurement Site NM-1 for the purpose of documenting average-daily noise levels at the nearest noise-sensitive receptor. Site NM-1 was located near the western property line of the residence, approximately 48 feet from the centerline of Road 68. Noise monitoring locations are depicted in Figure 3.12-1. Based on the monitoring conducted, average-hourly noise levels in the vicinity of the nearest noise-sensitive receptor range from a low of 50.2 during the nighttime hours to a high of 66.2 dBA L_{eq} during the daytime hours. Instantaneous noise levels ranged from 74.3 to 81.6 dBA

Figure 3.12-1
Noise Monitoring Locations & Nearby Land Uses



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L_{max} . The measured average-daily noise level was approximately 65.9 dBA CNEL and was generally equivalent to (within approximately 0.3 dB) the measured peak-hour L_{eq} noise levels⁵.

Measured On-Site Noise Levels

Noise measurements of on-site operations were conducted on July 16, 2014 using a Larson Davis Laboratories, Type I, Model 820 integrating sound-level meter. The microphone was positioned at a height of approximately 5 feet above ground level. The meter was calibrated prior to use and is certified to be in compliance with ANSI specifications.

Noise levels generated by on-site sources were predominantly influenced with the operation of the batch plant, including the drum mixer, conveyor belts, material screens, and material handling activities. The intermittent operation of warning buzzers/alarms, the loading/unloading of haul trucks, and on-site truck travel also contribute to onsite noise levels. Based on noise measurement surveys conducted at the facility, operational on-site noise levels generally ranged from the mid 60's to upper 80's (in dBA L_{eq}) depending on location and distance from onsite sources and the activities being conducted. The highest measured noise levels of approximately 90 dBA L_{max} were obtained in the vicinity of the truck loading area associated with the activation of the air valve during batch drops.

Existing Noise Environment

The noise environment in the proposed Project area is defined primarily by vehicular traffic on area roadways, including SR 198, which is adjacent to the southern boundary of the Project site, and to a lesser extent Road 64, Road 68, Avenue 298, and SR 99. To a lesser extent, nearby non-transportation noise sources, including existing agricultural activities and equipment and occasional aircraft overflights also contribute to ambient noise levels in the Project area. Existing noise sources in the Project area are discussed in greater detail, as follows:

Roadway Traffic

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to determine noise levels associated with existing vehicle traffic on area roadways. The FHWA model used California vehicle reference noise emission factors (CALVENO) for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. Traffic data used in the modeling effort was obtained from the traffic analysis prepared for this Project (see Appendix G).

Table 3.12-2 depicts predicted existing average-daily traffic noise levels (in CNEL/ L_{dn}) for primarily affected area roadways. Traffic noise levels were predicted at a distance of 50 feet from the near travel-lane centerline for major roadways, as well as distances to the predicted 70, 65, and 60 dBA CNEL/ L_{dn} traffic noise contours. The extent to which nearby land uses are affected by existing traffic noise depends on multiple factors, including their respective proximity to the roadways, shielding provided by intervening terrain and structures, and their individual sensitivity to noise.

⁵ AMBIENT Report, Page 13.

Table 3.12-2
Existing Roadway Traffic Noise Levels

Segment	Existing ADT ⁽¹⁾	CNEL/L _{dn} at 50 Feet from Near-Travel-Lane Centerline ⁽²⁾	Distance (feet) to Noise Level Contours (dBA CNEL/L _{dn}) from Roadway Centerline ⁽²⁾		
			70	65	60
Avenue 304, East of Road 68	1,200	63.5	WR	WR	95
Road 68, North of Avenue 298	1,520	64.5	WR	52	111
Road 68, South of Avenue 298	1,200	63.5	WR	WR	95
Avenue 298, Road 68 to Site Entrance	700	61.1	WR	WR	64
Avenue 298, Site Entrance to Road 64	610	60.5	WR	WR	61
Road 64, North of Avenue 298	420	58.9	WR	WR	WR
Road 64, South of Avenue 298	950	62.4	WR	WR	82
SR 198, West of Road 64	22,560	73.5	114	243	522
SR 198, East of Road 64	22,610	73.5	114	243	523
<p><i>Source: Ambient 2014</i></p> <p>1. ADT=Average Daily Traffic. Calculated based on pk-hr volumes assuming pk-hr volumes represent approximately 10 percent of the ADT volumes.</p> <p>2. Traffic noise levels and contour distances were calculated using the FHWA roadway noise prediction model and do not include shielding from existing structures, sound barriers, or intervening terrain.</p> <p>WR=Within roadway right-of-way</p> <p>Refer to Appendix B of Appendix F for modeling assumptions and results.</p>					

Existing Asphalt Batch Plant

Predicted operational noise levels associated with on-site operations were calculated using the *SoundPlan*, version 3.0, computer program. Modeling was conducted for average-hourly (in L_{eq}) and average-daily (in CNEL/L_{dn}) operational conditions. The model was calibrated based on plant operational noise sources and associated noise level data obtained at the project site during the noise measurement surveys conducted on July 16, 2014.

Predicted average-hourly noise levels were calculated assuming that all on-site equipment would be operating continuously. Predicted average-daily noise levels were calculated based on this same assumption assuming continuous 24-hour operations. Truck volumes were adjusted in the model to reflect an existing peak-hour volume of 25 truck trips, including incoming and outgoing trucks. Predicted average-daily noise levels assumed a total of 364 truck trips distributed equally over a 24-hour period. Predicted average-hourly and average-daily noise levels for existing on-site operations are depicted in Figure 3.12-2 and Figure 3.12-3, respectively.

Aircraft Noise

Airports located within approximately two miles of the Project site include the Visalia Municipal Airport, which is located approximately one mile southeast of the Project site. No private airstrips are located within two miles of the Project site.

Figure 3.12-2
Existing Onsite Average - Hourly Noise Levels

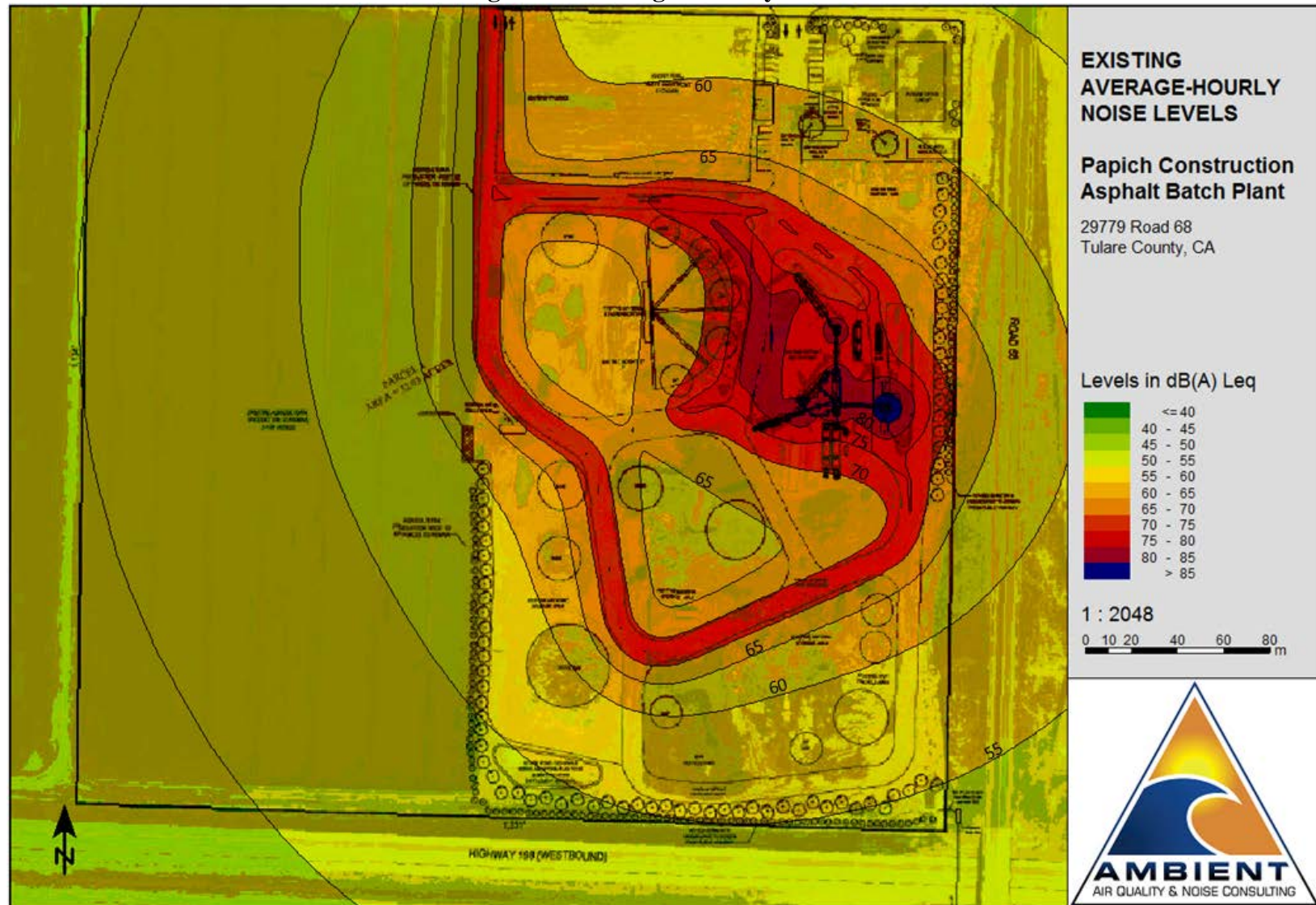
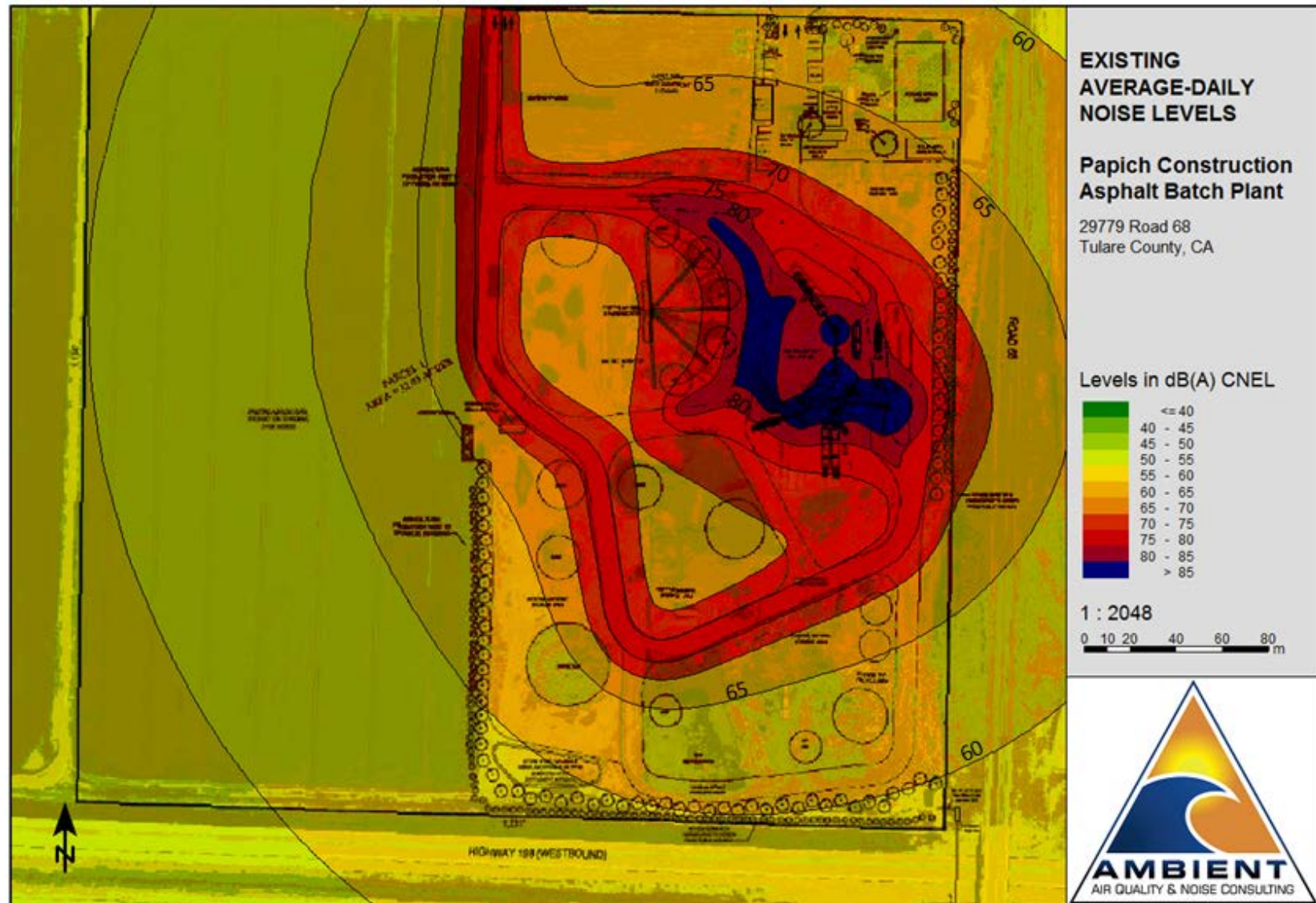


Figure 3.12-3
Existing Onsite Average –Daily Noise Levels



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Aircraft operations at Visalia Municipal Airport are projected to increase to 33,000 annual aircraft operations by 2019. The forecasted 55, 60, and 65 CNEL aircraft noise exposure contours for 2019 are illustrated on Figure 3.12-4. As depicted, the Project site is not located within the forecasted 60 dBA CNEL aircraft noise exposure contour of Visalia Municipal Airport.

Groundborne Vibration

No major existing sources of groundborne vibration have been identified in the proposed Project area. Roadway vehicle traffic on area roadways are generally not considered to result in significant levels of groundborne vibration that would adversely impact nearby land uses.⁶

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.”⁷

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.”⁸

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.”⁹

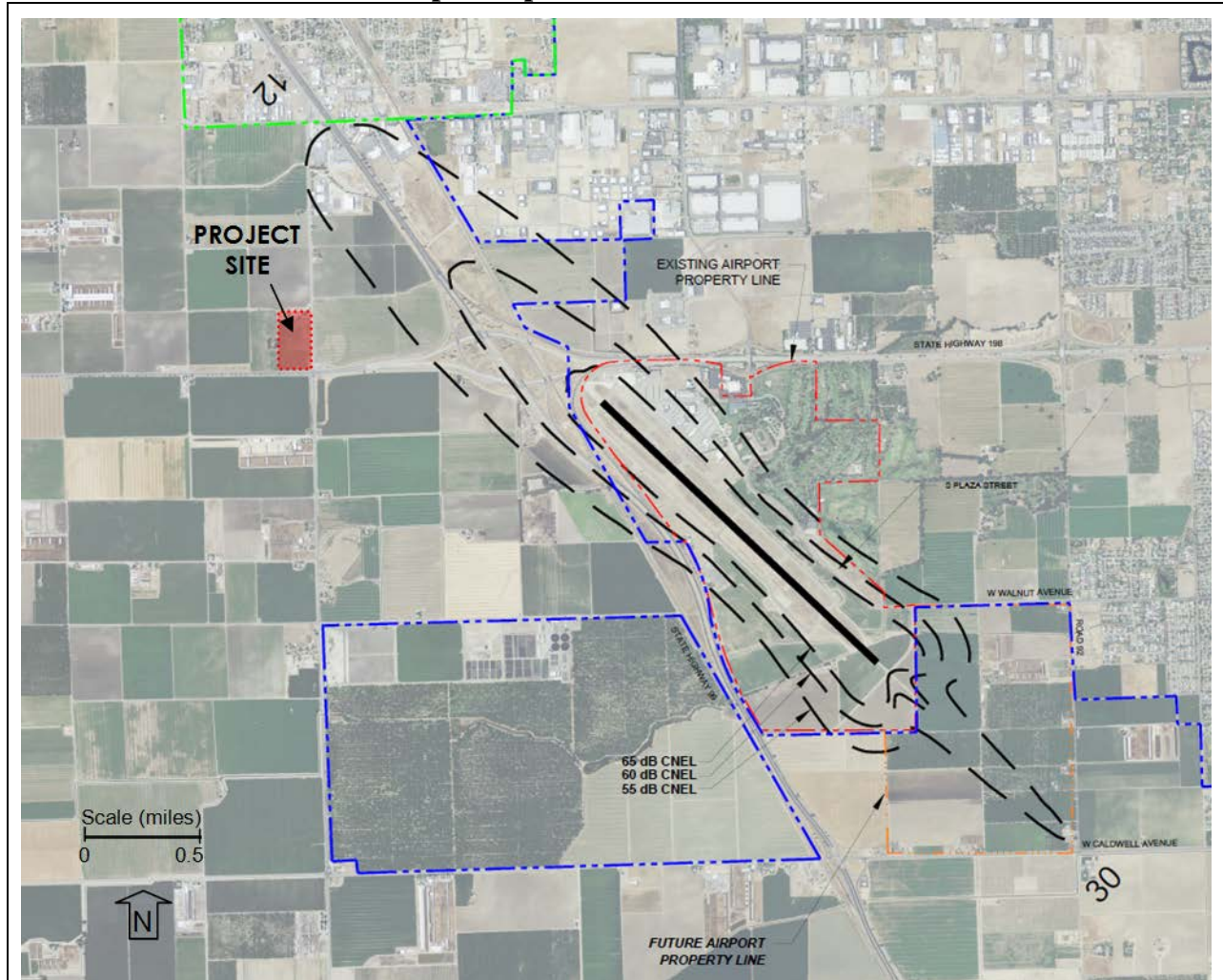
⁶ California Department of Transportation. 1976. *Survey of Earthborne Vibrations Due to Highway Construction and Highway Traffic*.

⁷ U.S. Department of Transportation. Federal Highway Administration website, Traffic Noise Model, http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/. Accessed September, 2014.

⁸ Tulare County Association of Governments 2011 Regional Transportation Plan Draft Subsequent EIR, page 152

⁹ Ibid.

Figure 3.12-4
Visalia Municipal Airport – 2019 Aircraft Noise Contours



Project Site.

Project site boundaries are approximate.

Image Source: Tulare County Comprehensive Airport Land Use Plan December 2012

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.”¹⁰

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.”¹¹

California Department of Transportation (Caltrans)

“The State of California establishes noise limits for vehicles licensed to operate on public roads. 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.”¹²

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 and the Tulare County noise compatibility criteria for various land uses are depicted in Table 3.12-3.

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.

¹⁰ Tulare County Association of Governments 2011 Regional Transportation Plan Draft Subsequent EIR. Page 153.

¹¹ Ibid. Page 152

¹² Ibid.

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-8.11 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-8.16 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.

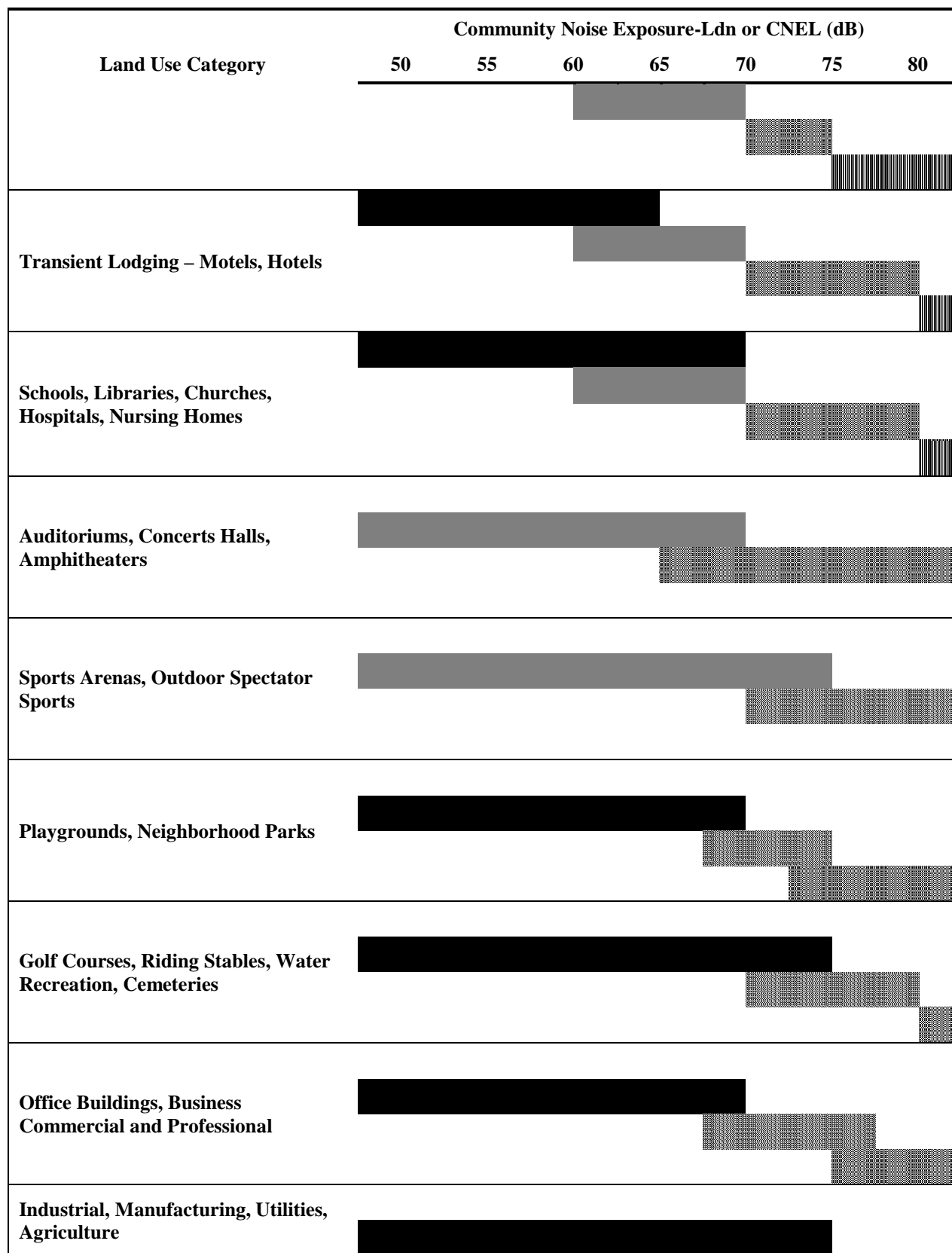
HS-8.19 Construction Noise Control - The County shall ensure that construction contractors implement best practices guidelines (i.e. berms, screens, etc.) as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

Table 3.12-3
Land Use Compatibility for Community Noise Environments¹³

Land Use Category	Community Noise Exposure-Ldn or CNEL (dB)							
	50	55	60	65	70	75	80	
Residential - Low Density Single Family, Duplex, Mobile Homes	Solid Black		Solid Grey			Cross-hatched		
	Solid Black			Cross-hatched				
Residential – Multi-Family	Solid Black			Cross-hatched				

¹³ AMBIENT Report, Page 9

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Land Use Category		Community Noise Exposure-Ldn or CNEL (dB)						
		50	55	60	65	70	75	80
	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 generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.						
	Clearly Unacceptable	New construction or development generally should not be undertaken.						

IMPACT EVALUATION

Would the project result in:

- 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: ***Less Than Significant Impact***

“Implementation of the proposed Project would result in short-term increases in ambient noise levels associated with onsite construction and demolition activities; as well as, increased on-site and off-site vehicle traffic. As noted in Impact C, projected increases in operational noise levels would not exceed applicable noise standards. This impact is considered ***Less Than Significant***. Refer to Impact C for additional discussion of Project-related noise impacts.”¹⁴

Mitigation Measure(s):

None Required.

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* (2012), *Tulare County 2030 General Plan Draft Environmental Impact Report* (2010).

¹⁴ AMBIENT Report, Page 21

As discussed in Impact C, implementation of the proposed Project would not contribute to a significant increase in projected future cumulative traffic noise levels along area roadways. In addition, no major off-site stationary sources of noise were identified in the Project area that would adversely affect nearby land uses. As a result, the proposed Project would not result in a cumulative contribution to noise levels that would adversely affect nearby land uses. This impact would be considered ***Less Than Significant***.

Conclusion: ***Less Than Significant Impact***.

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

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

“Increases in groundborne vibration levels attributable to the proposed Project would be primarily associated with the operation of off-road equipment associated with demolition of the existing on-site residential dwelling, construction of the proposed office building, and on-site operational activities. Such activities would likely require the use of various off-road equipment, such as tractors, concrete mixers, and haul trucks. The use of major groundborne vibration-generating construction equipment, such as pile drivers, would not be required for this Project.

Groundborne vibration levels associated with representative off-road equipment are summarized in Table 3.12-4. Based on the vibration levels presented in Table 3.12-4, ground vibration generated by off-road equipment would not be anticipated to exceed approximately 0.08 inches per second ppv at 25 feet. Predicted vibration levels at the nearest structures would not exceed the minimum recommended criteria for structural damage or human annoyance (0.2 in/sec ppv). As a result, this impact would be considered ***Less Than Significant***.”¹⁵

**Table 3.12-4
Vibration Levels for Varying Construction Equipment¹⁶**

Type of Equipment	Peak Particle Velocity @ 25 Feet (inches/second)
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003
Jackhammer	0.035
Vibratory Hammer	0.070
Vibratory Compactor/roller	0.210

¹⁵ AMBIENT Report, Page 22

¹⁶ Ibid.

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* (2012), *Tulare County 2030 General Plan Draft Environmental Impact Report* (2010).

Project-generated ground-borne vibration levels would not result in a significant impact to nearby land uses. No existing sources of ground-borne vibration or proposed projects that would adversely affect nearby land uses were identified in the Project area. As a result, the proposed Project would not result in a cumulative contribution to ground-borne vibration levels that would adversely affect nearby land uses. This impact would be considered ***less than significant***.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

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***

“Potential long-term increases in ambient noise levels within the proposed Project area would be associated with increases in vehicle traffic on area roadways; as well as, on-site operational activities. Potential increases in ambient noise levels associated with on-road vehicle traffic and on-site operational activities are discussed separately, as follows:

On-Road Vehicular Traffic

Project-Level Impact Analysis

Implementation of the proposed Project would result in increased traffic volumes on nearby area roadways. Predicted increases would primarily occur on nearby segments of Road 68, Avenue 298, and Road 64. Increases in traffic volumes resulting from implementation of the proposed project would, therefore, contribute to increases in traffic noise levels along these same roadway segments. The Project’s contribution to traffic noise levels along nearby roadways was determined by comparing the predicted noise levels with and without project-generated traffic and are summarized in Table 3.12-5.

As depicted in Table 3.12-5, predicted increases in traffic noise levels along nearby roadways would range from approximately 0.1 to 3.1 dBA. Predicted increases at the nearest residential land uses, which are located north of the Project site, adjacent to and east of Road 68, would be approximately 1.3 dBA. No significant increases in traffic noise levels along

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area roadways would occur with project implementation. This impact would be considered ***Less Than Significant***.

Table 3.12-5
Predicted Traffic Noise Levels
Existing Plus Approved Development – With & Without the Proposed Project

Roadway	CNEL/L _{dn} at 50 Feet from Near-Travel-Lane Centerline ¹		Predicted Noise Level Increase	Substantial Noise Level Increase?
	Without Project	With Project		
Avenue 304, East of Road 68	63.5	63.5	0	No
Road 68, North of Avenue 298	63.8	65.1	1.3	No
Road 68, South of Avenue 298	63.3	63.3	0	No
Avenue 298, Road 68 to Site Entrance	59.3	62.4	3.1	No
Avenue 298, Site Entrance to Road 64	59.3	61.1	1.8	No
Road 64, North of Avenue 298	58.8	58.8	0	No
Road 64, South of Avenue 298	61.7	62.8	1.1	No
SR 198, West of Road 64	73.5	73.5	0	No
SR 198, East of Road 64	73.5	73.6	0.1	No
<i>1. Traffic noise levels were calculated using the FHWA roadway noise prediction model and do not include shielding from existing structures, including sound barriers, or intervening terrain.</i>				
<i>2. Substantial increases defined as an increase of 5.0, or greater, where existing noise levels are less than the County's normally acceptable minimum noise level of 60 dBA CNEL/L_{dn}; 3 dBA, or greater, where existing noise levels range from 60 to 65 dBA CNEL; and 1.5 dB, or greater, where the existing noise level exceeds 65 dBA CNEL, without the proposed project.</i>				
<i>Refer to Appendix B of Appendix F for modeling assumptions and results.</i>				

Cumulative Impact Analysis

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information obtained from the traffic analysis prepared for this Project (see Appendix G). Future cumulative impacts were analyzed taking into account future traffic conditions for year 2040, with and without implementation of the proposed Project.

Predicted future cumulative (year 2040) traffic noise levels are summarized in Table 3.12-6. As indicated, predicted increases in traffic noise levels would range from approximately 0.1 to 1.5 dBA. No significant increases in future cumulative traffic noise levels along area roadways would occur with project implementation. This impact would be considered ***Less Than Significant***.

Noise Generated by On-Site Sources

Project-Level Impact Analysis

Less Than Significant. Noise generated by on-site sources are predominantly associated with the operation of the batch plant, including the drum mixer, conveyor belts, material screens, and material handling activities. The intermittent operation of warning buzzers/alarms, water pumps, and the loading/unloading of haul trucks, also contribute to onsite noise levels. Based

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on noise measurement surveys conducted at the facility, operational on-site noise levels generally ranged from the mid 60's to upper 80's (in dBA L_{eq}) depending on location, distance from onsite sources, and the activities being conducted. The highest measured noise levels of approximately 90 dBA L_{max} were obtained in the vicinity of the truck loading area associated with the activation of the air valve during batch drops. Predicted on-site average-hourly and average-daily noise levels for proposed Project operations are depicted in Figure 3.12-5 and Figure 3.12-6, respectively.

Table 3.12-6
Predicted Traffic Noise Levels
Future Cumulative (Year 2040) Conditions – With & Without the Proposed Project

Roadway	CNEL/ L_{dn} at 50 Feet from Near-Travel-Lane Centerline ¹		Predicted Noise Level Increase	Substantial Noise Level Increase?
	Without Project	With Project		
Road 68, North of Avenue 298	65.1	65.1	0	No
Road 68, South of Avenue 298	64.6	64.6	0	No
Avenue 298, Road 68 to Site Entrance	61.1	61.1	0	No
Avenue 298, Site Entrance to Road 64	62.4	63.6	1.2	No
Road 64, North of Avenue 298	61.4	62.8	1.5	No
Road 64, South of Avenue 298	63.3	63.4	0.1	No
SR 198, West of Road 64	74.6	74.6	0	No
SR 198, East of Road 64	74.7	74.7	0	No
<i>1. Traffic noise levels were calculated using the FHWA roadway noise prediction model and do not include shielding from existing structures, including sound barriers, or intervening terrain.</i>				
<i>2. Substantial increases defined as an increase of 5.0, or greater, where existing noise levels are less than the County's normally acceptable minimum noise level of 60 dBA CNEL/L_{dn}; 3 dBA, or greater, where existing noise levels range from 60 to 65 dBA CNEL; and 1.5 dB, or greater, where the existing noise level exceeds 65 dBA CNEL, without the proposed project.</i>				
<i>Refer to Appendix B of Appendix F for modeling assumptions and results.</i>				

Predicted noise levels associated with onsite operations were calculated using the *SoundPlan*, version 3.0, computer program. The modeling included noise levels associated with the onsite movement of heavy-duty trucks based on peak onsite truck volumes of 57 trucks/hour and 880 trucks/day. As noted earlier, the nearest residential land use is located approximately 1,000 feet north of the proposed Project site. Predicted average-hourly operational noise levels at the property line of this nearest residence are summarized in Table 3.12-7. As indicated, predicted average-hourly noise levels at this nearest residence would be 45.5 dBA L_{eq} . Maximum instantaneous noise levels would be 53.3 dBA L_{max} and average-daily noise levels would be 50.4 dBA CNEL/ L_{dn} . In comparison to ambient noise levels, onsite operational activities associated with the proposed project would not result in an increase in ambient noise levels at this nearest residence and would be largely masked by existing traffic noise emanating from area roadways. Predicted operational noise levels at other nearby rural

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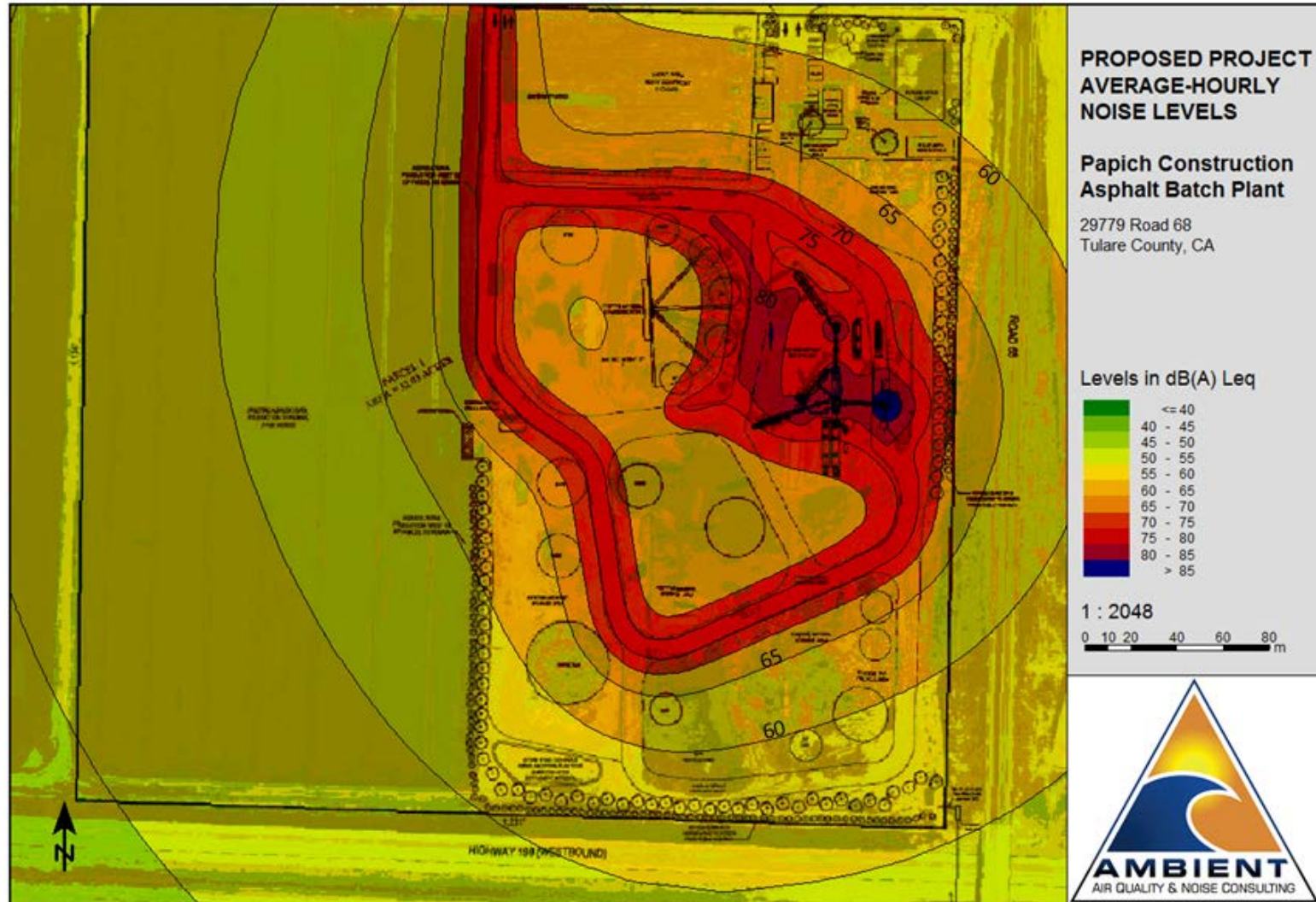
residential dwellings would be less and, likewise, would be masked by existing traffic noise emanating from area roadways. This impact would be considered *Less Than Significant*.¹⁷

Table 3.12-7
Predicted Non-transportation Operational Noise Levels at the Nearest Noise-Sensitive Land Use

	Noise Level (dBA)				
	Daytime		Nighttime		CNEL/L _{dn}
	L _{eq}	L _{max}	L _{eq}	L _{max}	
Predicted Operational Noise Levels:	45.5	53.3	44.5	53.3	50.4
Ambient Noise Levels:	61.4-66.2	76.2-82.4	50.2-66.2	74.3-80.2	65.9
Exceeds Ambient Noise Levels:	No	No	No	No	No

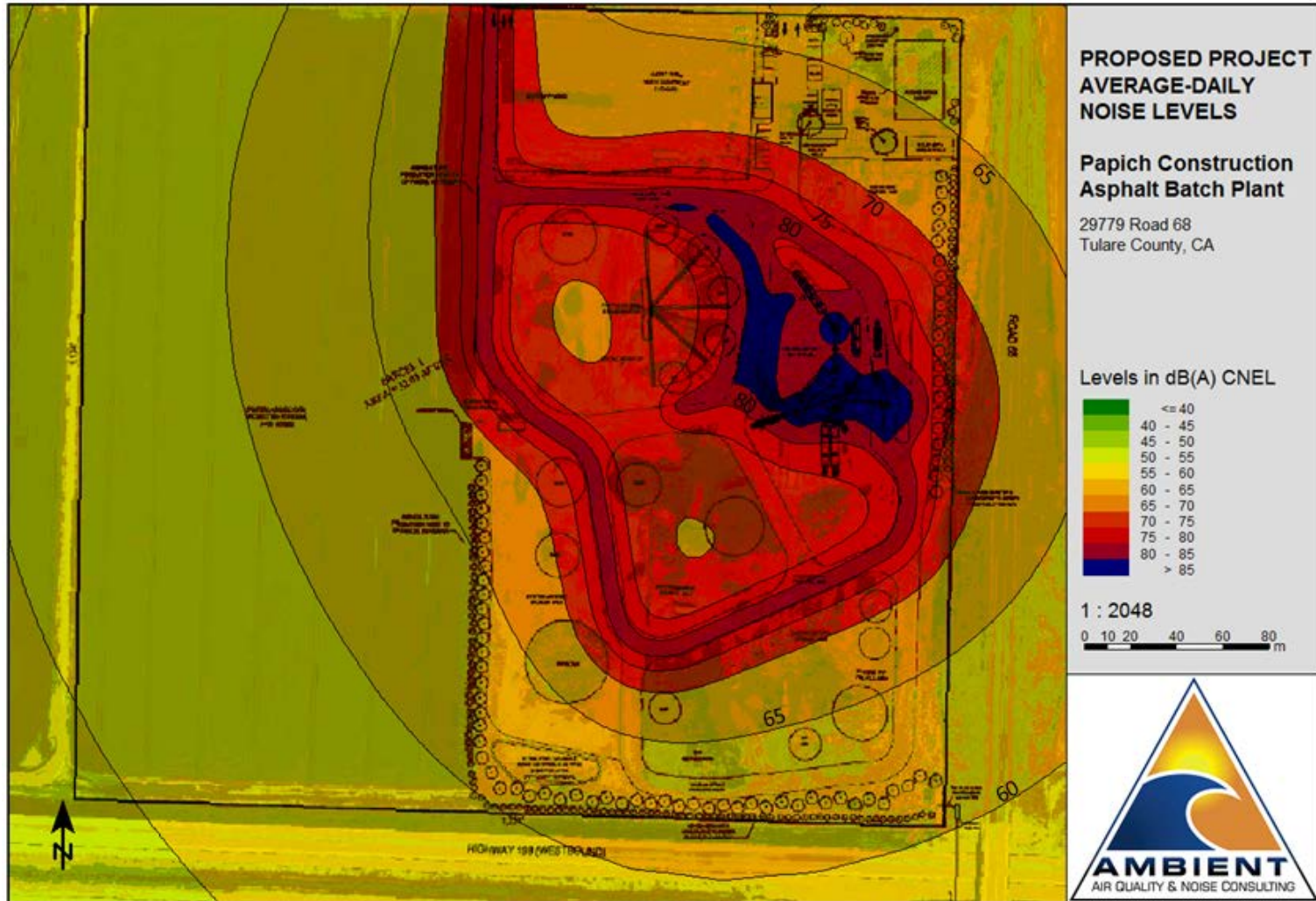
¹⁷ AMBIENT Report, Page 23-25. Appendix "F" of this DEIR.

Figure 3.12-5
Proposed Project Onsite Average-Hourly Noise Levels



Includes onsite non-transportation and transportation noise sources. Assumes a peak-hour volume of 57 truck trips.

Figure 3.12-6
Proposed Project Onsite Average-Daily Noise Levels



Cumulative Impact Analysis ***Less Than Significant***

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* (2012) and the *Tulare County 2030 General Plan Draft Environmental Impact Report* (2010).

No major stationary sources of noise were identified in the Project area that would contribute to cumulative impacts at the nearest noise-sensitive land uses. As a result, the proposed Project's cumulative contribution to non-transportation noise sources in the Project area would be considered ***Less Than Significant***.

Mitigation Measure(s): ***None Required***

Conclusion: ***Less Than Significant***

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 with Mitigation Incorporation***

"The proposed Project would include demolition of the existing on-site residential dwelling, located at the northeast corner of the site, and construction of a new 7,000 square foot office building in this same general location.

Noise associated with demolition and construction activities would be temporary and would vary depending on the nature of the activities being performed. Noise generated during demolition and construction is typically associated with the operation of off-road equipment. Table 3.12-8 lists typical uncontrolled noise levels generated by individual pieces of representative off-road equipment likely to be used during on-site demolition and construction. As indicated in Table 3.12-8, noise levels associated with individual construction equipment can reach levels of up to approximately 90 dBA L_{max} . Noise from localized point sources, such as construction sites, typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate and typical construction equipment noise levels and usage rates, combined noise levels associated with construction activities can reach levels of up to approximately 84 dBA L_{eq} at 50 feet.

The nearest noise-sensitive land uses are rural residential dwellings, the nearest of which is located approximately 1,000 feet (0.2 miles) north of the Project site, adjacent to and east of Road 68. Based on the noise levels noted above, the highest predicted short-term noise levels at this residential dwelling would be approximately 51 dBA L_{eq} . During the daytime hours, construction and demolition related noise levels at this nearest residential dwelling would be largely masked by existing ambient noise levels in the area, which are largely influenced by vehicle traffic on area roadways. However, because exterior ambient noise levels decrease during the nighttime hours as vehicle traffic decreases, construction activities performed during these more noise-sensitive nighttime hours could be detectable and may result in

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increased annoyance and potential sleep disruption to building occupants. It is important to note that construction noise levels are highly variable and would last only as long as construction activities occur. Nonetheless, short-term noise-generating construction activities associated with on-site demolition and construction would be considered to have a potentially ***Significant Impact***.¹⁸

**Table 3.12-8
Typical Off-Road Equipment Noise Levels¹⁹**

Equipment	Typical Noise Level (dBA) at 50 feet from Source	
	L_{max}	L_{eq}
Air Compressor	80	76
Backhoe/Front End Loader	80	76
Compactor (Ground)	80	73
Concrete Mixer Truck	85	81
Concrete Mixer (Vibratory)	80	73
Concrete Pump Truck	82	75
Concrete Saw	90	83
Crane	85	77
Dozer/Grader/Excavator/Scraper	85	81
Drill Rig Truck	84	77
Generator	82	79
Gradall	85	81
Jack Hammer	85	78
Impact Hammer/Hoe Ram (Mounted)	90	83
Pavement Scarifier/Roller	85	78
Paver	85	82
Pile Driver (Impact Type)	101	94
Pneumatic Tools	85	82
Pumps	77	74
Truck (Dump/Flat Bed)	84	80

Mitigation Measure(s):

- 12-1: Construction and demolition activities (excluding emergency work and activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Construction and demolition activities shall be prohibited on Sundays and federal holidays.
- 12-2: Construction and demolition equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and shrouds, in accordance with manufacturers' recommendations.

¹⁸ AMBIENT Report, Page 28. Appendix "F" of this DEIR.

¹⁹ United States Federal Highway Administration (FHWA). January 2006. *Roadway Construction Noise Model*, version 1.1.

Significance After Mitigation: ***Less Than Significant Impact***

The use of mufflers and engine shrouds would reduce construction and demolition equipment noise levels by approximately 10 dB, or more. In addition, hourly limitations for construction and demolition activities would significantly reduce the potential for annoyance and sleep disruption for occupants of nearby land uses. With implementation of the proposed mitigation measures, this impact would be considered less than significant.

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 the 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.

Mitigation Measure(s): ***See Mitigation Measure 12-1 and 12-2.***

Conclusion: ***Less Than Significant with Mitigation***

- 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: ***Less Than Significant Impact***

“Airports located within approximately two miles of the proposed Project site include the Visalia Municipal Airport, which is located approximately one mile southeast of the Project site. No private airstrips are located within two miles of the airport.

Aircraft operations at Visalia Municipal Airport are projected to increase to 33,000 annual aircraft operations by 2019. The forecasted 55, 60, and 65 CNEL aircraft noise exposure contours for 2019 are illustrated on Figure 3.12-4. As depicted, the proposed Project site is not located within the forecasted 60 dB CNEL aircraft noise exposure contour of Visalia Municipal Airport. Implementation of the proposed Project would not expose onsite workers to adverse aircraft noise levels, nor interfere with airport operations. This impact is considered ***Less Than Significant.***”²⁰

Cumulative Impact Analysis: ***Less Than Significant Cumulative Impacts***

²⁰ AMBIENT Report, Page 30

Less Than Significant. 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* (2012), *Tulare County 2030 General Plan Draft Environmental Impact Report* (2010), and the *Tulare County Comprehensive Airport Land Use Plan* (December 2012).

The proposed Project would not subject people to excessive airport related noise. Therefore, cumulative impacts related to this Checklist item will be ***Less Than Significant***.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific or Cumulative Impacts*** to this Checklist Item will occur.

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***

Less than Significant. Airports located within approximately two miles of the Project site include the Visalia Municipal Airport, which is located approximately one mile southeast of the proposed Project site. No private airstrips are located within two miles of the airport. There is ***No Impact***.

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

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* (2012), *Tulare County 2030 General Plan Draft Environmental Impact Report* (2010), and the *Tulare County Comprehensive Airport Land Use Plan* (December 2012).

There are no private airstrips within the Project vicinity. Therefore, there would be ***No Cumulative Impacts*** related to this Checklist item.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

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).”²¹ 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.”

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

²¹ TCAG 2011 Regional Transportation Plan Draft Subsequent EIR, page 150

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.”²²

REFERENCES

AMBIENT Report, Page 9, 13, 21, 22, 23, 24, 25, 28, 30. See Appendix F.

California Department of Transportation. 1976. *Survey of Earthborne Vibrations Due to Highway Construction and Highway Traffic*.

CEQA Guidelines, Section 15126.2 (a)

Tulare County Association of Governments., 2011 Regional Transportation Plan Draft Subsequent EIR, Page 151, 152, 153

Tulare County General Plan 2030 Update Background Report, pages 8-46, 47, 77

United States Federal Highway Administration (FHWA). January 2006. *Roadway Construction Noise Model*, version 1.1.

U.S. Department of Transportation. Federal Highway Administration website, Traffic Noise Model, http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/. Accessed September, 2014.

²² Tulare County General Plan 2030 Update Background Report, pages 8-46 to 8-47