APPENDIX G

Noise Impact Analysis

NOISE IMPACT ANALYSIS

FOR

CITY OF ATASCADERO GENERAL PLAN UPDATE & CORRESPONDING ZONING CODE UPDATE

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LIST OF COMMON TERMS AND ACRONYMS

ADT	Average Daily Traffic
ANSI	Acoustical National Standards Institute, Inc.
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	Decibels
dBA	A-Weighted Decibels
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GPU	General Plan Update
Hz	Hertz
HVAC	Heating Ventilation & Air Conditioning
in/sec	Inches per Second
L_{dn}	Day-Night Level
L_{eq}	Equivalent Sound Level
L_{max}	Maximum Sound Level
ppv	Peak Particle Velocity
UPRR	Union Pacific Railroad
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
ZCU	Zoning Code Update

INTRODUCTION

This report provides a discussion of existing conditions, applicable regulatory framework, and an analysis of noise and groundborne vibration impacts associated with the proposed City of Atascadero 2045 General Plan Update (2045 GPU) and corresponding Zoning Code Update (ZCU).

PROPOSED CITY OF ATASCADERO GENERAL PLAN UPDATE

The 2045 GPU is a long-range policy document that provides context and establishes guidance for decision-making, design and development of new projects, conservation of natural resources, promotion of economic development, improvements to mobility and infrastructure systems, expansion of public services, and enhancement of community amenities. The 2045 GPU identifies year 2045 as a horizon year; however, the City recognizes that not all initiatives and goals in the 2045 GPU may be achieved by 2045. The Zoning Code implements the General Plan and provides an administrative and development framework for parcels throughout the City. The Zoning Code will be revised to accommodate new General Plan Placetypes and will incorporate administrative and process updates aligned with General Plan policies, existing city processes, and permit streamlining directives.

EXISTING SETTING

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

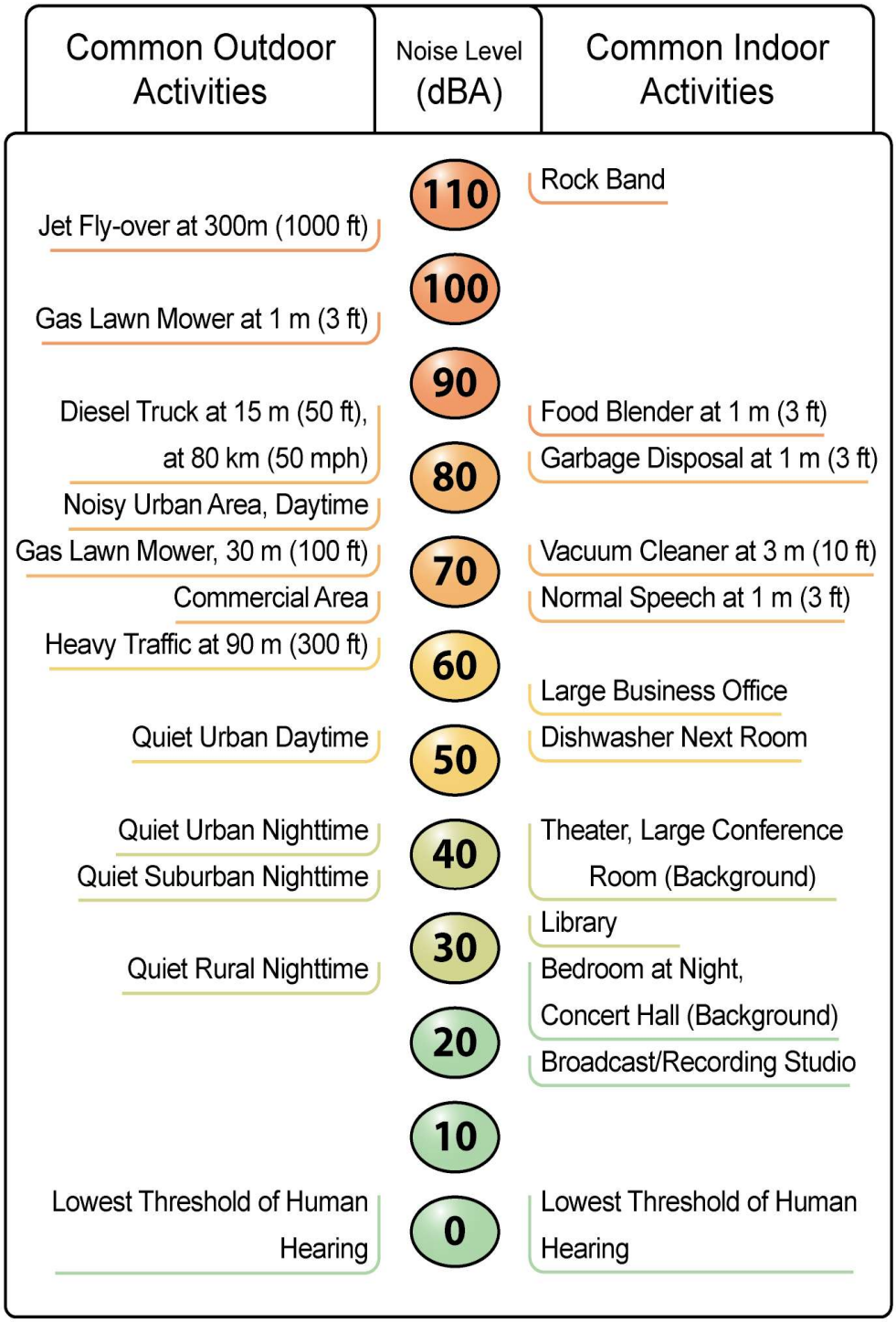
Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as “A-weighted decibels” (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common community noise sources and associated noise levels, in dBA, are depicted in Figure 1.

Figure 1. Common Noise Levels



Source: Caltrans 2022

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Sound Propagation & Attenuation

Geometric Spreading

Noise sources are generally characterized as either a localized source (i.e., point source) or a line source. Examples of point sources include construction equipment, vehicle horns, alarms, and amplified sound systems. Examples of a line sources include trains and on-road vehicular traffic. Sound from a point source propagates uniformly outward in a spherical pattern.

For a point source, sound levels generally decrease (attenuate) at a rate of approximately 6 decibels for each doubling of distance from the source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver), no excess ground attenuation is assumed. Parking lots and bodies of water are examples of hard surfaces which generally attenuate at this rate. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When soft surfaces are present, the excess ground attenuation for soft surfaces generally results in an overall attenuation rate of approximately 7.5 decibels per doubling of distance from the point source.

On-road vehicle traffic consists of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels for line sources attenuate at a rate of approximately 3 decibels for each doubling of distance for hard sites and approximately 4.5 decibels per doubling of distance for soft sites.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of

sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior noise reductions for building facades, with windows open, and approximately 20-25 dBA, with windows closed. With compliance with current building construction and insulation requirements, exterior-to-interior noise reductions typically average approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies and furniture, can result in further reductions in interior noise.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological 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, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

A limitation of using a single noise-level increase value to evaluate noise impacts, as discussed above, is that it fails to account for pre-development noise conditions. With this in mind, the Federal Interagency Committee on Noise (FICON) developed guidance to be used for the assessment of project-generated increases in noise levels that take into account the ambient noise level. The FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of

cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL, L_{dn}). FICON-recommended noise evaluation criteria are summarized in Table 1 (FICON 2000).

Table 1. Federal Interagency Committee on Noise Recommended Criteria for Evaluation of Increases in Ambient Noise Levels

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60-65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater
Source: FICON 2000	

As depicted in Table 1, an increase in the traffic noise level of 5.0, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance (FICON 2000). These criteria are commonly applied for analysis of environmental noise impacts.

Existing Noise Environment

Ambient Noise Monitoring

Short-term (10-minute) and long-term (24-hours) noise level measurements were conducted from October 10, 2022, through October 13, 2022, for the purpose of documenting and measuring the existing noise environment at various locations throughout the City. Measurement locations were selected near major noise sources and other locations of interest within the community.

Short-Term Ambient Noise Measurements

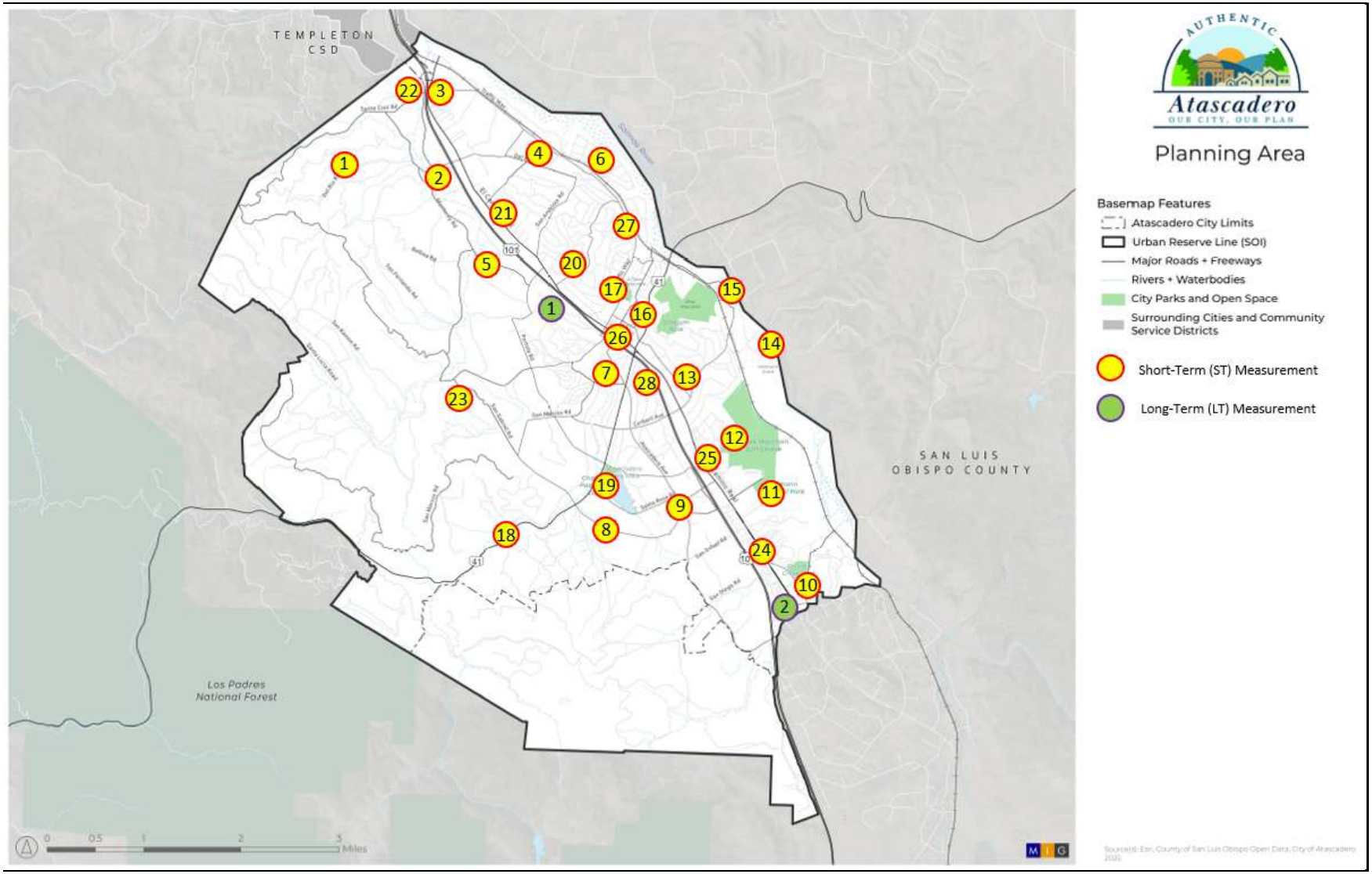
Twenty-eight short-term measurement were conducted. Short-term ambient noise measurement locations and corresponding measured average-hourly noise levels (in dBA L_{eq}) are summarized in Table 2. Noise measurement locations are depicted in Figure 2.

As noted in Table 2, measured daytime noise levels ranged from approximately 40 to 73 dBA L_{eq}. Ambient noise levels are largely influenced by vehicle traffic on area roadways. To a lesser extent, aircraft overflights and other noise sources within the community (e.g., landscaping, industrial activities, construction activities) also contribute to the ambient noise environment.

Long-Term Ambient Noise Measurements

Two long-term measurements were conducted, which are identified as LT-1 and LT-2 in Figure 8-2. Noise measurement location LT-1 was located approximately 110 feet from U.S. Highway 101, near San Palo Road. Noise measurement location LT-2 was located approximately 500 feet from U.S Highway 101 and 300 feet from El Camino Real. Measured ambient noise levels for noise measurement locations LT-1 and LT-2 are summarized in Tables 3 and 4, respectively.

Figure 2: Ambient Noise Measurement Locations



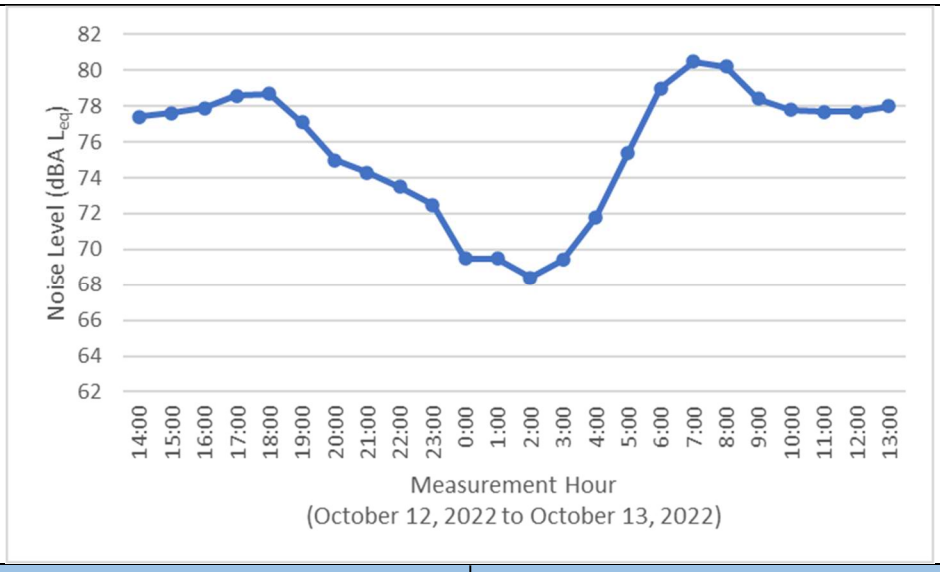
Refer to Tables 2, 3, and 4 for corresponding noise measurement data.

Table 2. Summary of Short-Term Measured Ambient Noise Levels

Measurement	Location	Measurement Period	Primary Noise Sources	Noise Level (dBA L_{eq})
October 10, 2022				
ST1	7800 Del Rio Road	10:41 – 10:51	Birds, Electrical Equipment	44.3
ST2	Apple Valley Park	11:03 – 11:13	Birds, Traffic, People Walking on Path	45.3
ST3	5400 Santa Cruz Road	11:50 – 12:00	Distant Traffic, Birds	57.7
ST4	San Benito Elementary School	12:10 – 12:20	Birds, Truck Passby	50.3
ST5	Monterey Road Elementary School	12:32 – 12:42	Traffic, Birds	63.2
ST6	The Lakes Lake	12:57 – 13:07	Birds	41.5
ST7	High School Hill Road	15:08 – 15:18	Traffic, Dogs	52.6
October 11, 2022				
ST8	Hope Lutheran Church	10:02 – 10:12	Traffic, Propeller Plane Overflight, Dogs, Birds	50.7
ST9	9600 Atascadero Avenue	10:26 – 10:36	Traffic, Birds	60.5
ST10	Paloma Creek Park	10:47 – 10:57	Distant Traffic, Children, Birds	44.4
ST11	Heilmann Regional Park	11:10 – 11:20	Traffic, Golf Cart, Birds, Squirrels	40.4
ST12	8500 El Corte Road	11:31 – 11:41	Traffic	52.5
ST13	Pueblo Avenue/Sombrilla Avenue	11:53 – 12:03	Traffic, Conversation, Propeller Plane Overflight, Dogs	53.5
ST14	7700 Aragon Road	12:16 – 12:26	Dogs, Birds	49.6
ST15	7100 Sycamore Road	12:40 – 12:50	Traffic, Birds, Children, Sheep/Goat	64.7
ST16	5454 CA-41 Parking	13:03 – 13:13	Traffic	64.8
ST17	Traffic Way Park	13:24 – 13:34	Traffic	57.8
October 12, 2022				
ST18	12500 CA-41	10:51 – 11:01	Traffic	67.9
ST19	Atascadero Lake Park	11:25 – 11:35	Traffic	63.9
ST20	Nogales Avenue/Lobos Avenue	11:56 – 12:06	Traffic, Birds, Dog, Distant Power Tool	53.4
ST21	3300 El Camino Real	12:19 – 12:29	Traffic	68.2
ST22	1000 San Ramon Road	13:24 – 13:34	Traffic	71.2
ST23	6000 San Gabriel Road	14:06 – 14:16	Traffic, Propeller Plane Overflight	56.8
October 13, 2022				
ST24	10700 El Camino Real	10:40 – 10:50	Traffic	66.9
ST25	8965 El Camino Real	11:00 – 11:10	Traffic	71.7
ST26	Sunken Gardens	11:22 – 11:32	Traffic, Water Fountain	58.3
ST27	4890 Alamo Avenue	11:45 – 11:55	Dogs, Vehicle Passby	56.0
ST28	6050 Marchant Avenue	12:56 – 13:06	Traffic	73.1

Noise measurements were conducted from October10, 2022 to October 13, 2022. Refer to Figure 2 for noise measurement locations.

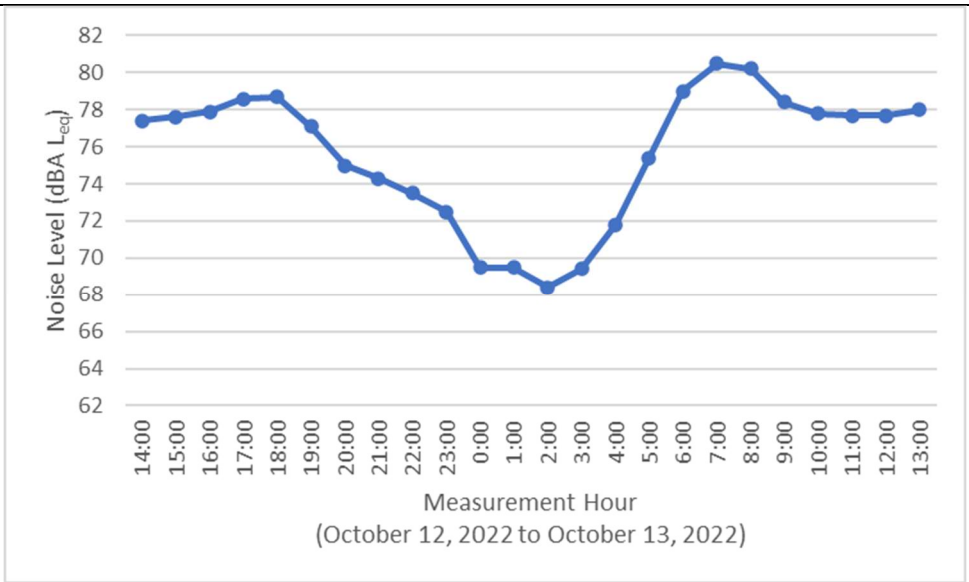
Table 3. Measured Long-Term Noise Levels – Measurement Location LT-1



Measurement Hour	Noise Level (dBA L_{eq})
14:00	77.4
15:00	77.6
16:00	77.9
17:00	78.6
18:00	78.7
19:00	77.1
20:00	75
21:00	74.3
22:00	73.5
23:00	72.5
0:00	69.5
1:00	69.5
2:00	68.4
3:00	69.4
4:00	71.8
5:00	75.4
6:00	79
7:00	80.5
8:00	80.2
9:00	78.4
10:00	77.8
11:00	77.7
12:00	77.7
13:00	78

Notes: Average-daily noise level measured 81 dBA CNEL/L_{dn}. Refer to Figure 2 for noise measurement locations.

Table 4. Measured Long-Term Noise Levels – Measurement Location LT-2



Measurement Hour	Noise Level (dBA L_{eq})
15:00	55.7
16:00	57.5
17:00	54.9
18:00	53.3
19:00	53.8
20:00	52
21:00	51.2
22:00	50.3
23:00	49.7
0:00	48.1
1:00	48.6
2:00	47.5
3:00	47.7
4:00	49.3
5:00	49.3
6:00	53.9
7:00	53.5
8:00	52.7
9:00	52.4
10:00	54.5
11:00	55.8
12:00	53.4
13:00	52
14:00	52.3

Notes: Average-daily noise level measured 57 dBA CNEL/L_{dn}. Refer to Figure 2 for noise measurement locations.

As noted in Tables 3, measured ambient noise levels at location LT-1 ranged from approximately 68 dBA L_{eq} during the nighttime hours to a high of approximately 81 dBA L_{eq}, during the daytime hours. Average-daily noise levels at location LT-1 measured 81 dBA CNEL/L_{dn}. As noted in Tables 4, measured ambient noise levels at location LT-2 ranged from approximately 48 dBA L_{eq} during the nighttime hours to a high of approximately 58 dBA L_{eq} during the daytime hours. Average-daily noise levels at location LT-2 measured 57 dBA CNEL/L_{dn}. In general, nighttime noise levels are typically 5-10 dB lower than daytime noise levels.

Noise Sources

Surface Transportation Sources

Roadway Vehicular Traffic

As noted earlier in this report, noise from vehicular traffic on area roadways is a primary source of ambient noise in the City. Major sources of roadway traffic noise within the City of Atascadero include United States Highway 101 (US-101) and State Route 41 (SR-41). To a lesser extent, other major roadways, such as El Camino Real, also contribute to ambient traffic noise levels. Existing noise-sensitive land uses located along these traffic corridors consist predominantly of residential land uses the nearest of which are generally located approximately 50 feet from the near-travel-lane centerline of US-101 and approximately 27 feet from the near-travel-lane centerline of SR-41. Other noise-sensitive land uses generally located along these corridors include, but are not limited to, places of worship, hotels, and recreational uses.

Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Roadway Noise Prediction Model (FHWA RD-77-108) based on average-daily traffic (ADT) volumes obtained from the traffic analysis prepared for the 2045 GPU/ZCU (CCTC 2025). Predicted existing traffic noise levels and distances to traffic noise contours for major roadway segments are summarized in Table 5. Based on the modeling conducted, existing traffic noise levels along area roadways range from approximately 61 to 79 dBA CNEL at 50 feet from the near-travel-lane centerline. Existing transportation noise contours for major roadway segments within the City of Atascadero are depicted in Figure 3.

Railroad Traffic

The Union Pacific Railroad (UPRR) runs north-south through the City near the western City limits with a portion of the tracks adjacent to Traffic Way. Depending on demand, approximately five trains pass through the City on a daily basis. including three freight trains and two passenger trains (Amtrak Coast Starlight). Existing noise-sensitive land uses located along the UPRR corridor consist predominantly of residential land uses the nearest of which are generally located approximately 25 feet from the UPRR track centerline. Other nearby noise-sensitive land uses include Chalk Mountain Golf Course, which is located approximately 70 feet from the track centerline.

Existing train noise levels and distance to noise contours are summarized in Table 6. Based on a conservative estimate of 5 trains per day, average-daily noise levels along the railroad corridor would be approximately 66 dBA CNEL at 100 feet from the rail corridor centerline. Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events can contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses. Existing transportation noise contours within the City of Atascadero are depicted in Figure 3.

Table 5. Existing Roadway Traffic Noise Levels & Contour Distances

Roadway Segment	ADT Volumes	CNEL at 50 ft. from Near-travel-lane Centerline	Distance to CNEL Contour (Feet from Road Centerline)		
			70	65	60
US-101: Santa Barbara Rd. to Santa Rosa Rd.	55,000	78.7	313	670	1,441
US-101: Santa Rosa Rd. to Curbaril Ave.	55,000	78.7	313	670	1,441
US-101: Curbaril Ave. to SR-41	55,000	78.7	313	670	1,441
US-101: SR-41 to Traffic Way	63,000	77.5	261	557	1,196
US-101: Traffic Way to San Anselmo Rd.	63,000	77.5	261	557	1,196
US-101: San Anselmo Rd to del Rio Rd.	63,000	77.5	261	557	1,196
US-101: del Rio Rd to San Ramon Rd.	65,000	77.6	266	568	1,221
US-101: San Ramon Rd to Vineyard Rd.	65,000	77.6	262	558	1,221
SR-41: Atascadero Ave. to Curbaril Ave.	10,200	67.3	WR	95	201
SR-41: Santa Rosa Rd to Curbaril Ave.	11,100	67.6	WR	100	212
SR-41: US 101 to Atascadero Ave.	13,700	66.1	WR	80	169
SR-41: Santa Ysabel Ave. to Mercedes Ave.	6,300	66.3	WR	68	145
SR-41: Rocky Canyon Rd to Mercedes Ave.	5,600	67.7	WR	85	182
El Camino Real: San Ramon Rd to Del Rio Rd.	10,200	66.0	WR	98	295
El Camino Real: Del Rio Rd to Rosario Ave.	11,100	66.3	WR	105	321
El Camino Real: Rosario Ave. to Highway 41	13,700	61.1	WR	WR	100
El Camino Real: Highway 41 to San Diego Rd.	6,300	63.9	WR	65	184
El Camino Real: San Diego Rd. to Santa Barbara Rd.	5,600	63.4	WR	59	164

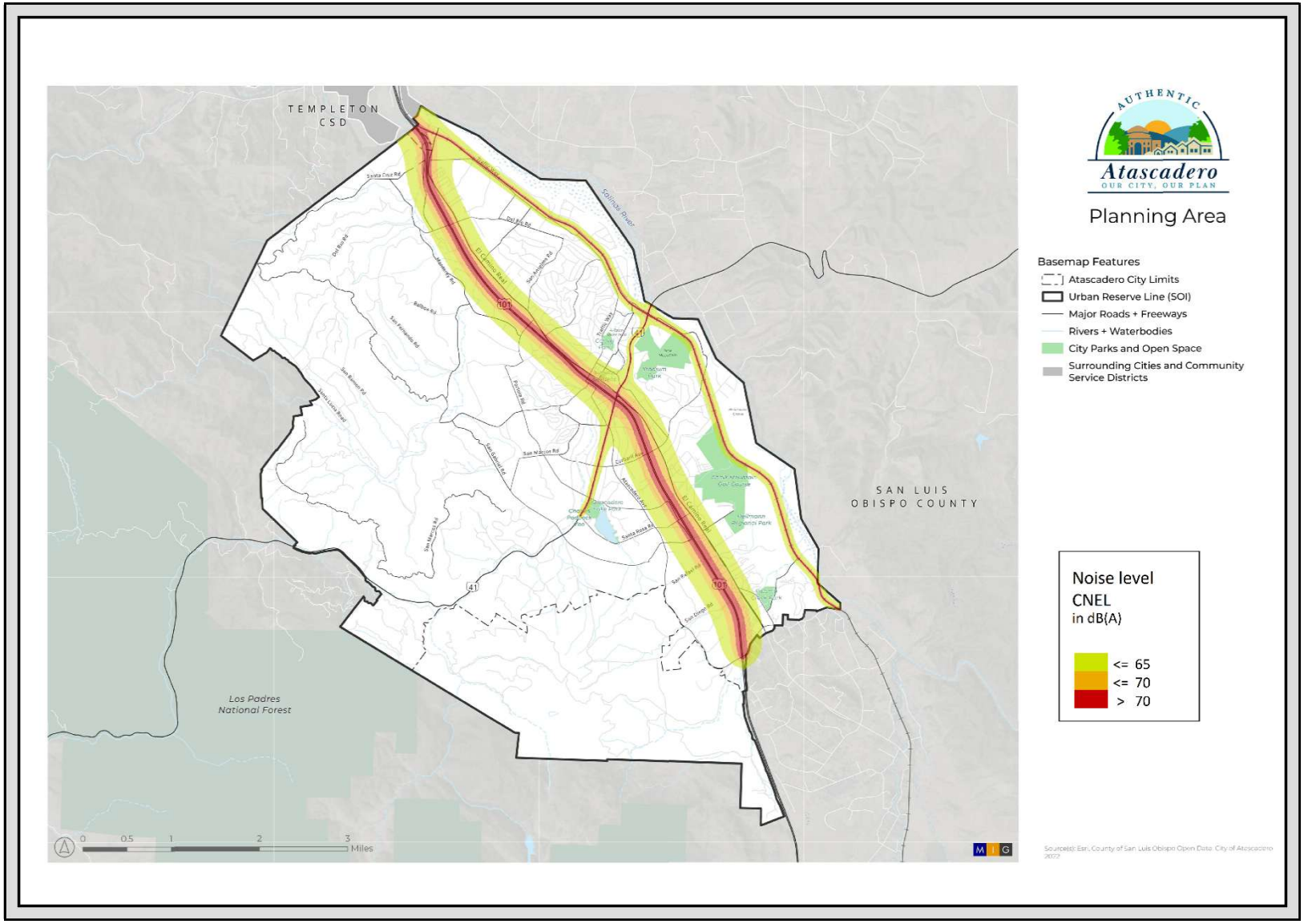
Traffic volumes were derived from the traffic analysis prepared for this project (CCTC 2025). Does not include shielding from intervening structures or terrain.
WR= Contour is located within road right-of-way

Table 6. Existing Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Railroad Track Centerline	Distance to CNEL Contours (feet) from Railroad Track Centerline		
			70	65	60
Freight & Passenger	5	66	51	108	233

UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Does not include shielding from intervening structures or terrain. Projected railroad noise contours are depicted in Figure 8-3.

Figure 3. Existing Major Transportation Noise Contours



Predicted noise contours do not include shielding from intervening structures or terrain.

Non-Transportation Sources

Within the City, major non-transportation noise sources consist predominantly of industrial and commercial land uses. Many industrial processes produce noise, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (i.e., regulations of the Occupational Safety and Health Administration of the U.S. Department of Labor [OSHA] and the California Division of Occupational Safety and Health [Cal-OSHA]). Exterior noise levels that affect neighboring parcels are typically subject to local standards. Commercial, recreational, and public facility activities can also produce noise that may affect adjacent noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. In addition, noise generation from fixed noise sources may vary based upon climate conditions, time of day, and existing ambient noise levels.

From a land-use planning perspective, stationary-source noise control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas; and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise producing uses. The second goal can be met by requiring new noise-sensitive uses near noise-producing facilities include noise-reduction measures to ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

The following discussions of existing non-transportation noise sources in the community are intended to be representative of the sources and relative noise levels associated with such uses. The average-hourly noise levels (in dBA L_{eq}) discussed for these sources provide an indication of the noise levels that can generally be expected to occur over an extended period of time. The L_{eq} noise levels do not necessarily reflect possible intermittent high noise levels associated with the various uses but are useful for general planning purposes. Actual noise levels at nearby noise-sensitive receptors will vary depending on the operational characteristics of the facility, meteorological conditions, and the physical landscape.

Non-transportation noise sources within the City consist predominantly of commercial and industrial uses. To a somewhat lesser extent, other non-transportation noise sources would also include automotive/equipment repair and maintenance facilities, and construction activities. Noise levels associated with some of the more common non-transportation noise sources located throughout the community are discussed in more detail, as follows:

Commercial and Industrial Uses

Within the City planning area, commercial and industrial land uses are located primarily along major roadway and the UPRR corridor. Noise sources commonly associated with these land uses include truck traffic, loading dock activities, heavy-equipment operation, and building mechanical systems. There are no major industrial and commercial operations within the community (i.e. recycling centers, truck distribution centers, and food and agricultural products processing) and primary noise sources are associated with vehicle transportation along Highway 101, Highway 41, and El Camino Real. Various other activities, such as loading dock activities, can result in temporary or intermittent increases in ambient noise levels. In general, noise levels associated with these uses can range from approximately 55 to 85 dBA L_{eq} at 50 feet.

Noise levels associated with commercial and industrial land uses can vary depending on various factors, including site conditions, equipment operated, and the specific activities being conducted. As a result, actual noise levels at nearby noise-sensitive receptors varies depending on the above-mentioned conditions and other influences, such as location, distance from source, shielding provided by intervening terrain and structures, and ground attenuation rates. For this reason, noise generated by proposed commercial and industrial uses currently requires a site-specific analysis and compliance with municipal code standards.

Other Non-Transportation Noise Sources

Various other non-transportation noise sources can contribute to noticeable increases in ambient noise levels. Such sources would include, but are not limited to, recreational uses or events, particularly those that utilize amplified sound systems (e.g., sporting events, concerts, festivals, public actions, animal/vehicle exhibitions, etc.); automotive repair facilities; building mechanical systems, and landscape maintenance activities. Noise generated by such sources are often directional and can vary depending on site and operational characteristics.

Concerts and Live Music

Outdoor live music, festivals, and concert events are hosted at several locations within the City; such as, the Atascadero Lake Park, the Sunken Gardens, and The Plaza. Noise levels associated with live music and concerts can vary depending on musical style (e.g., rock, pop, metal, hip-hop, classical, etc.) and amplification. Additionally, noise generated from amplification (speakers) is directional, which can greatly affect operational noise levels at offsite locations.

Landscape Maintenance

Landscape maintenance activities often result in sporadic and intermittent increases in ambient noise levels. Equipment used for landscape maintenance often include the use of power mowers and leaf blowers. Leaf blowers and gasoline-powered lawnmowers can result in intermittent noise levels of up to approximately 100 dBA at 3 feet (EPA 1971). Resultant exterior noise levels could reach intermittent levels of approximately 75 dBA L_{max} at 50 feet. The use of leaf blowers, particularly when used during the more noise-sensitive evening and nighttime hours, may result in increased levels of annoyance.

Automotive Maintenance & Repair

Typical automotive maintenance and repair activities often include the use of pneumatic tools, air compressors, and power generators. Other equipment operations such as the use of power hand tools (e.g., sanders, drills, grinders, pneumatic wrenches, etc.), typically generate a lesser degree of noise. The use of air compressors, power generators, and pneumatic tools can generate noise levels of up to approximately 85 dBA at 50 feet. Noise levels generated by the use of hand-held tools, such as sanders, drills, and grinders, typically average between 63 and 87 dBA at 3 feet. The use of multiple hand tools, such as grinders being used on metal, can generate levels of 87 to 97 dBA at 3 feet (EPA 1971, FHWA 2008). Noise levels associated with these facilities would be dependent on the specific activities performed and source/facility characteristics.

Building Mechanical Systems

The majority of electrical and mechanical equipment in buildings is used for air circulation systems. Mechanical systems may also include pumping systems, elevators and escalators, and various other material conveyance systems. Much of this equipment is located in mechanical equipment rooms or in areas that provide shielding from direct public/personnel exposure (i.e., above ceilings, in walls, or behind enclosures.) Equipment located within exterior areas can result in increases in ambient noise levels,

particularly when located in unshielded areas and within line-of-sight of nearby receptors. Such equipment would include air-conditioning units, cooling towers, compressors, fans/turbines, electrical transformers, chillers, and pumps. Noise levels associated with these sources can vary depending on the specific equipment being operated, facility/equipment design, and operational characteristics. Typical noise levels associated with building mechanical equipment can range from less than 50 to 110 dBA at 3 feet, with the highest noise levels reaching approximately 85 dBA at 50 feet from the source.

Construction Activities

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading, and excavation, erection) of construction. Noise generated by construction equipment, including pile drivers, material handling equipment, pavers, jackhammers, and portable generators, can result in intermittent and prolonged increases in ambient noise levels. Although construction noise impacts are generally short-term, they can result in increased levels of annoyance to occupants of nearby residential dwellings. In general, noise levels generated by construction activities can range from approximately 71 to 83 dBA L_{eq} at 50 feet from the source.

Noise-generating construction activities are currently regulated through implementation of the City's Noise Control ordinance, which generally limits these activities to the less noise-sensitive daytime hours (City of Atascadero 2022).

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as parks, historic sites, cemeteries, and recreation areas are also considered potentially sensitive to increases in exterior noise levels. School classrooms, places of assembly, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The following noise-sensitive land uses have been identified within the City of Atascadero:

- Residential land uses, including single-family units and multi-family units
- Schools
- Atascadero State Hospital
- Assisted living/care facilities
- Places of worship
- Hotels and lodging
- Community parks
- Public Library

REGULATORY SETTING

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Those regulations most applicable to the community are summarized, as follows:

Federal

U.S. Environmental Protection Agency

In 1974, the U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control published a report entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Although this document does not constitute EPA regulations or standards, it is useful in identifying noise levels at which increased levels of annoyance would be anticipated. Based on an annual-average day-night noise level (expressed as L_{dn} or DNL), the document states that "undue interference with activity and annoyance" will not occur if outdoor noise levels in residential areas are below 55 dBA L_{dn} and indoor levels are below 45 dBA L_{dn} (EPA 1974).

Department of Housing and Urban Development

The Federal Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land uses are set forth in the Code of Federal Regulations, Title 24, Part 51, "Environmental Criteria and Standards." These guidelines identify a noise exposure of 65 dBA L_{dn}, or less, as acceptable. Exterior noise levels of 65 to 75 dBA L_{dn} are considered normally acceptable, provided appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Exterior noise levels above 75 dBA L_{dn} are considered unacceptable. The goal of the interior noise levels for residential, hotel, and hospital/nursing home uses is 45 dBA L_{dn}. These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities.

Train Horn Rule

Under the federal train horn rule (49 CFR Part 222), locomotive engineers must begin to sound train horns at least 15 seconds, and no more than 20 seconds, in advance of all public grade crossings. In general, depending on train speed, train horns are often sounded within one-quarter mile of a grade crossing. Local communities may reduce the effects of train horns by establishing "quiet zones", which typically incorporate measures to reduce public risk caused by the absence of horn sounding (FRA 2026). No railroad quiet zones were identified in the City.

State

California Building Code

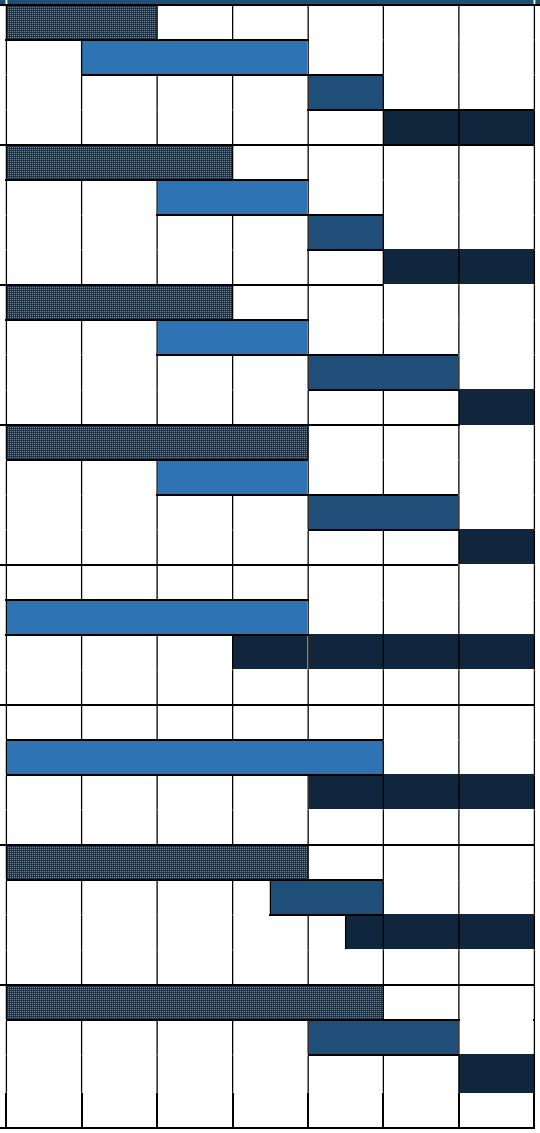
Title 24 of the California Code of Regulations contains standards for allowable interior noise levels associated with exterior noise sources (California Building Code, 1998 edition, Volume 1, Appendix Chapter 12, Section 1208A). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences. The standards state that the interior noise level attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room. Proposed multi-family residential structures to be located where the CNEL exceeds 60 dBA shall require an acoustical analysis showing that the proposed building design would achieve the prescribed allowable interior noise standard.

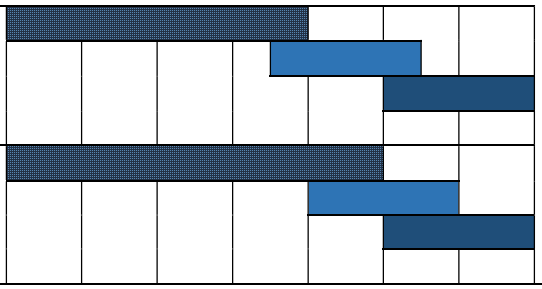
State of California General Plan Guidelines

The *State of California General Plan Guidelines*, published by the Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of new land uses within specific noise environments. The goal of these recommended noise standards is, in part, to allow for a "normally acceptable" interior noise level of 45 dBA CNEL. For instance, assuming an average exterior-to-interior

noise reduction of 15 dBA (with windows partially open), an exterior noise level of 60 dBA CNEL for residential land uses, or less, would be sufficient to achieve an interior noise level of 45 dBA CNEL. Higher exterior noise levels may be allowed provided that noise-reduction measures are incorporated to achieve acceptable interior noise levels. Within "conditionally acceptable" exterior noise environments, conventional construction with incorporation of fresh air circulation systems sufficient to allow windows to remain closed would normally suffice. Compliance with current building code requirements and with windows closed, exterior-to-interior noise reductions typically average approximately 25 dBA, or more. The State's guidelines can be modified to reflect communities' sensitivities to noise. The State recommended noise criteria for land use compatibility are summarized in Table 7 (State of California 2017).

Table 7. State of California Land Use Compatibility Noise Criteria

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA) 55 60 65 70 75 80	Interpretation
Residential – Low Density Single Family, Duplex, Mobile Homes		**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.
Residential – Multiple Family		
Transient Lodging – Motels, Hotels		**Conditionally Acceptable** New construction or development should be undertaken only after a detailed analysis of noise reduction requirements and needed noise insulation features included in the design.
Schools, Libraries, Churches, Hospitals, Nursing Homes		
Auditoriums, Concert Halls, Amphitheaters		**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.
Sports Arena, Outdoor Spectator Sports		
Playgrounds, Neighborhood Parks		
Golf Courses, Riding Stables, Water Recreation, Cemeteries		**Clearly Unacceptable**

Office Buildings, Business Commercial and Professional		New construction or development should generally not be undertaken
Industrial, Manufacturing, Utilities, Agriculture		

Source: California OPR 2017

City of Atascadero General Plan

The *Atascadero General Plan Safety and Noise Element*, Chapter IV, Section B, identifies exterior average-daily noise standards for the primary purpose of ensuring the compatibility of proposed land uses within exterior noise environments and ensure that noise levels at adjacent land uses do not exceed acceptable levels. These standards are also designed to protect existing land uses, including transportation and industry, from encroaching on urban uses. The City's existing General Plan noise standards for transportation and stationary (non-transportation) noise sources are summarized in Table 8 and Table 9, respectively (City of Atascadero 2002).

The *City's Current General Plan presents five goals for the Noise Element* (City of Atascadero 2002)*:*

- **SFN 6 —** Protect the citizens of Atascadero from harmful and annoying effects of exposure to excessive noise.
- **SFN 7 —** Protect the economic base of Atascadero by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.
- **SFN 8 —** Preserve the tranquility of residential areas by preventing the encroachment of noise-producing sources.
- **SFN 9 —** Educate residents of Atascadero concerning the effects of exposure to excessive noise and the methods available for minimizing such exposure.
- **SFN 10 —** Avoid or reduce noise impacts through site planning and project design, giving second preference to the use of noise barriers and/or structural modifications to buildings containing noise-sensitive land uses.

The following policies have been adopted by the City to accomplish the goals presented in the Noise Element (City of Atascadero 2002):

- **Policy 1.** The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation. The City shall maintain a Noise Ordinance that implements the requirements of the Noise Element.

Transportation Noise Sources:

- **Policy 2.** New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB or CNEL (70 L_{dn}/CNEL for playgrounds and neighborhood parks) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified for the given land use in Table 8.

- **Policy 3.** Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 8 within the outdoor activity areas and interior spaces of existing noise sensitive land uses.

Table 8. Maximum Allowable Noise Exposure — Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Spaces	
	(L_{dn}/CNEL dB)	(L_{dn}/CNEL dB)	(L_{eq}, dB)[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Office Buildings	60[3]	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

1. *Where the location of outdoor activity areas is unknown, the exterior noise level standards shall be applied to the property line of the receiving land use.*
2. *As determined for a typical worst-case hour during periods of use.*
3. *Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.*

Source: City of Atascadero 2002

Stationary Noise Sources:

- **Policy 4.** New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 9 unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 9.
- **Policy 5.** Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table 9 on lands designated for noise-sensitive uses. This policy does not apply to noise levels associated with agricultural operations.

Table 9. Allowable Noise Exposure — Stationary Noise Sources[1]

	Daytime	Nighttime
	(7:00 a.m. to 9:00 p.m.)	(9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2]	50	45
Maximum Level (dB)[2]	70	65
Maximum Impulse Level (dB)[3]	65	60

1. *As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of the noise barriers or other property line noise mitigation measures.*
2. *Sound level measurements shall be made with slow meter response.*
3. *Sound level measurements shall be made with fast meter response.*

Source: City of Atascadero 2002

Existing and Cumulative Noise Impacts

- **Policy 6.** The City shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.

City of Atascadero Municipal Code

The City's Municipal Code (Title 9, Planning and Zoning, Chapter 14, Noise) includes various provisions intended to protect community residents from prolonged unnecessary, excessive, and annoying sound levels that are detrimental to the public health, welfare, and safety, or are contrary to the public interest. Examples of noise sources subject to the City's municipal Code include, but are not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners, and refrigeration equipment (City of Atascadero 2026).

Noise sources associated with construction-related activities are typically exempt from the City's ordinance provided that the activities do not take place before the hours of seven a.m. or after nine p.m. or by special permit from the Community Development Director. Various other activities are also exempt, including, but not limited to, school entertainment and athletic events, mobile sources associated with agricultural activities, and emergency response activities (City of Atascadero 2026).

In addition, the City's Noise Ordinance sets exterior and interior (Title 9, Sections 9-14.05 and 9-14.06, respectively) noise level standards. The City's exterior and interior noise level standards are summarized in Table 10 and Table 11, respectively. The exterior noise level standards are applied at the property line of the receiving land use. Where practical, the microphone shall be positioned three to five feet above the ground and away from reflective surfaces. The interior standards applied within the affected dwelling unit, when both the source and receiver are residential land uses. The reported interior noise level shall be determined by taking the arithmetic average of the readings taken at the various microphone locations (City of Atascadero 2026).

Table 10. City of Atascadero Municipal Code Exterior Noise Level Standards[1]

	Daytime (7:00 a.m. to 9:00 p.m.)	Nighttime (9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2, 3]	50	45
Maximum Level (dB)[2, 3]	70	65

1. *It is unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level when measured at any affected single or multiple-family residence, school, hospital, church or public library situated in the City to exceed the noise level standards as set forth in the table.*
2. *In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.*
3. *Each of the noise level standards specified above shall be reduced by five (5) dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.*

Source: City of Atascadero 2026

Table 11. City of Atascadero Municipal Code Interior Noise Level Standards[1]

	Daytime (7:00 a.m. to 9:00 p.m.)	Nighttime (9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2, 3]	40	35
Maximum Level (dB)[2, 3]	60	55

1. *It is unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level when measured at any affected single or multiple-family residence, school, hospital, church or public library situated in the City to exceed the noise level standards as set forth in the table.*
2. *In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.*
3. *Each of the noise level standards specified above shall be reduced by five (5) dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.*

Source: City of Atascadero 2026

ENVIRONMENTAL IMPACTS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

1: 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.

2: Generation of excessive groundborne vibration or groundborne noise levels.

3: 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 a public use airport, would the project expose people residing or working in the area to excessive noise levels?

Substantial increases in ambient noise levels that would exceed applicable City of Atascadero's noise standards would be considered to have a potentially significant impact. The City's General Plan transportation noise standards are summarized in Table 8. The City's General Plan noise standards for non-transportation noise sources are summarized in Table 9. The City's Municipal Code exterior and interior noise standards for non-transportation noise sources are summarized in Tables 10 and 11, respectively. For purposes of this analysis, substantial increases in average-hourly ambient noise levels attributable to non-transportation noise sources would be based on an increase of 5 dBA, or greater. Increases in transportation noise levels that would exceed the FICON average-daily noise thresholds identified in Table 1 would be considered substantial.

The nearest active public airport to the City of Atascadero is the Paso Robles Municipal Airport, located approximately 10 miles to the north. The nearest private airports include the Santa Margarita Ranch Airport located approximately 2.4 miles south of the City and the Oak Country Ranch Airport located approximately 5.6 miles northwest of the City. The City of Atascadero is not located within two miles of nearby airports or within the airport planning area of the Paso Robles Municipal Airport (City of Paso Robles 2004, SLOALUP 2026). As a result, no impact is anticipated to occur with regard to the exposure of sensitive receptors to aircraft noise levels. Therefore, impacts related to exposure to aircraft noise are not discussed further in this report.

METHODOLOGY

A combination of existing literature and general application of accepted noise thresholds was used to determine the impact of ambient noise levels resulting from and on development within the 2045 GPU Planning Area. Short- and long-term impacts associated with transportation and non-transportation noise sources were qualitatively assessed based on potential increases in ambient noise levels anticipated to occur at noise-sensitive land uses. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108.) The FHWA modeling was based upon the Calveno noise-emission factors for automobiles and medium- and heavy-duty trucks. Input data used in the model included average-daily traffic volumes, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, roadway widths, and ground elevation data. Traffic volumes for major roadway segments within the City were derived from the traffic analysis prepared for this project (CCTC 2045).

Predicted train noise levels and corresponding distances to noise contours for the UPRR railroad corridor were calculated in accordance with the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* guidance (FTA 2018). Train noise levels were quantified taking into account passenger and freight train traffic along the UPRR corridor, with the sounding of train horns.

RELEVANT PROPOSED 2045 GPU GOALS AND POLICIES

The 2045 GPU includes numerous goals and policies that would reduce noise impacts on sensitive receptors. Some of the most relevant of these goals and policies include, but are not limited to, the following:

Goal SEP-5: Neighborhoods that maintain a strong quality of life while supporting a vibrant and thriving economy.

Policy SEP-5.1: Noise Ordinance. Maintain and update the City's Noise Ordinance to balance the economic, social, and rural vision of Atascadero.

- **Action A:** Update the Noise Ordinance to incorporate construction best management practices to minimize construction noise when construction activities would be located within 1,000 feet of noise-sensitive land uses.
- **Action B:** Update the Noise Ordinance to add conditions that would allow for temporary increases in noise in certain locations, such as Downtown, mixed-use areas, key commercial nodes, and parks, to accommodate special events. Encourage and allow these uses with appropriate noise thresholds.
- **Action C:** Require projects to reduce noise exceeding the City's maximum allowable exterior and interior noise standards, unless exceptions are granted.

Policy SEP- 5.2: Land Use Compatibility. Prevent noise-sensitive land uses from encroaching upon existing or planned noise-producing uses, such as permitted industrial businesses and commercial activities, to allow businesses enterprises to thrive.

Policy SEP-5.3: Residential Noise Reduction. Preserve the tranquility of rural single-family residential areas by preventing the encroachment of noise-producing uses.

Policy SEP-5.4: Site Planning. Avoid or reduce noise impacts through site planning, project design, and implementation of the California Building Code and Health and Safety Code.

- **Action A:** Consider updating the Municipal Code to provide options for new development to provide buffers other than sound walls when required.

Policy SEP-5.6: Transportation Noise. Reduce the impacts of transportation-related noise.

- **Action A:** Avoid new development of noise-sensitive land uses in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed the City's "normally acceptable" noise standards for land use compatibility unless the project design includes effective measures to reduce noise in outdoor activity areas and interior spaces to or below the "conditionally-acceptable levels," as specified for the given land use in Table 12.
- **Action B:** Work with Caltrans to evaluate and develop traffic noise mitigation programs along Highway 101 and State Route 41.

Policy SEP-5.7: Stationary Noise. Reduce the impacts of stationary noise sources.

- **Action A:** Avoid new development of noise-sensitive land uses where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 13 unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 13.

- **Action B:** Require mitigation of noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications so such uses do not to exceed the noise level standards of Table 13 on properties designated for noise-sensitive uses.
- **Action C:** Maintain exceptions for Agricultural activities within the Agricultural land use designations during reasonable hours.
- **Action D:** Work with private parties to reduce or mitigate noise exceeding allowed levels from existing industrial and commercial stationary-noise sources that impact nearby noise-sensitive land uses.

Table 12. Maximum Allowable Noise Standards for Transportation Noise Sources

Noise Sensitive Land Use	Interior Occupied Spaces (dBA)		Outdoor Activity Areas (dBA)[1]
	CNEL	L_{eq}[6]	
Residential	45[4]	--	65[2,3]
Mixed-Use Residential	45[4]	--	--
Convalescent Care Facilities, Hospitals	45[4]	--	70[2,3]
Transient Lodging	45	--	65[2,3]
Schools, Libraries, Museums and Places of Worship	--	45	--
Playgrounds, Neighborhood Parks	--	--	70[5]
Office Buildings	--	45	70[3]

1. To be applied at outdoor activity areas. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use.
2. Where it is not possible to reduce exterior noise levels to 65 dBA CNEL, or less, an exterior noise level of 70 dBA CNEL may be allowed provided that an acoustical analysis has been prepared for the project to identify available exterior noise-reduction measures to be incorporated and interior noise levels are in compliance with this table. For multi-family development, the exterior noise standard may be applied at a designated on-site outdoor common-use area in lieu of individual unit patios or balconies.
3. Where outdoor activity areas are not included in the project design, only the interior noise level standard shall apply.
4. In locations where railroad noise is the predominant noise source, the interior noise standard for residential land uses shall be reduced by 5 dB to account for the increased potential for sleep disruption to building occupants.
5. Where quiet is a basis for use.
6. This standard is intended to apply to land uses with operational hours predominantly during the daytime hours. The interior noise standard applies to a typical worst-case hour during the period of use.

Table 13. Maximum Allowable Noise Standards for Non-Transportation Noise Sources

	Daytime 7:00 AM to 7:00 PM	Evening 7:00 PM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
Exterior Noise Standards[1,2]			
Hourly Equivalent (L_{eq} dBA)[3,5]	55	50	45
Maximum Level (L_{max} dBA)[4,5]	75	70	65
Interior Noise Standards[6]			
Hourly Equivalent (L_{eq} dBA)[3,5]	45	40	35
Maximum Level (L_{max} dBA)[4,5]	60	55	45

1. As determined at the outdoor activity area of the receiving noise-sensitive land use. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use. In the event the measured ambient noise level exceeds the applicable noise level standard the applicable standard shall be adjusted so as to equal the ambient noise level.
2. Exterior noise standards are to be applied in noise-sensitive outdoor activity areas. Excludes mixed-use residential and school playgrounds.
3. L_{eq} = Average or "Equivalent" noise level during the worst-case operational hour of use. Sound level measurements shall be made with slow meter response.
4. L_{max} = Highest measured sound level occurring during a given interval of time (e.g., 1 hour). Sound level measurements shall be made with fast meter response.
5. Where the noise source in question consists of speech or music, or is impulsive in nature, or contains a pure tone, the noise standards are reduced by 5 dB.
6. As determined within occupied areas of the receiving noise-sensitive structure. In the event the measured ambient noise level exceeds the applicable noise level standard the applicable standard shall be adjusted so as to equal the ambient noise level.

Goal MO-1: A safe, multimodal, interconnected, and efficient circulation system that serves all community members

Policy MO-1.2: Multimodal Options. Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

Policy MO-1.3: Regional Facilities. Provide regional roadway facilities that minimize through-traffic intrusion on local streets and mitigate impacts on local traffic.

Policy MO-1.4: Congestion Management and Trip Reduction. Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

Policy MO-1.6: Truck Routes. Ensure the new and existing business that use large trucks as a core part of their operations, more than just routine delivery, minimize maintenance impacts on City infrastructure and noise impacts on residents.

IMPACTS AND MITIGATION MEASURES

Impact N-1: Would the General Plan result in exposure of persons or 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?

Short-term construction and long-term operational noise impacts associated with future development are discussed as follows:

Short-term Exposure to Construction Noise

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Temporary increases in ambient noise levels, particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption. Although noise ranges were found to be similar for all construction phases, the grading phase tends to involve the most equipment and resulted in slightly higher average-hourly noise levels. Typical noise levels for individual pieces of construction equipment and distances to predicted noise contours are summarized in Table 14. As depicted, individual equipment noise levels typically range from approximately 74 to 88 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Intermittent noise levels can range from approximately 77 to 95 dBA L_{max}, the loudest of which include the use of pile drivers and impact devices (e.g., hoe rams, impact hammers).

Assuming a construction noise level of 88 dBA L_{eq} and an average attenuation rate of 6 dBA per doubling of distance from the source, exterior noise levels at sensitive receptors located within approximately 1,330 feet of the construction activity could reach and/or exceed 60 dBA L_{eq}. Depending on distances from nearby noise-sensitive land uses, the specific construction activities conducted, and intervening shielding, construction activities may result in temporary and periodic increases in ambient noise levels at nearby receptors. Of particular concern, are activities that occur during the evening and nighttime hours, however, construction activities in the City of Atascadero are generally permitted between 7:00 a.m. and 9:00 p.m., and construction occurring outside of these hours requires approval from the Community Development Director pursuant to the City's Municipal Code (Atascadero Municipal Code Section 9-

14.03(c)). If construction activities occur during more noise-sensitive hours, these activities may result in increased levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings. As a result, because such increases could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies or neighboring jurisdictions, this impact is considered **potentially significant**.

Table 14. Typical Individual Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Rock Drill	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Blasting	94	74	83	149	265
Boring Hydraulic Jack/Power Unit	80	77	118	210	374
Compactor (Ground)	80	73	74	133	236
Concrete Batch Plant	83	75	94	167	297
Concrete Mixer Truck	85	81	187	334	594
Concrete Mixer (Vibratory)	80	73	74	133	236
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748
Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Drill Rig Truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic Break Ram	90	80	167	297	529
Jack Hammer	85	78	133	236	420
Impact Hammer/Hoe Ram (Mounted)	90	83	236	420	748
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pile Driver (Impact/Vibratory)	95	88	420	748	1,330
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529
Sources: FTA 2018, FHWA 2008					

Proposed General Plan Policies that Provide Mitigation

Proposed 2045 GPU Policy SEP-5.1, Action A, would require the update of the City's Noise Ordinance to incorporate construction best management practices to minimize construction noise when construction activities would be located within 1,000 feet of noise-sensitive land uses.

Due to the short-term and intermittent frequency of construction noise, and the required compliance with the City's municipal code and 2045 GPU SEP-5.1, Action A, construction noise level increases would not result in a substantial temporary or periodic increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance. As a result, this impact would be considered **less than significant**.

Long-term Exposure to Non-Transportation Noise

The proposed 2045 GPU/ZCU would primarily facilitate new residential, commercial, and industrial land uses within the city limits. Potential noise/land use conflicts would occur at the interface between planned residential and commercial land uses due to noise sources typically associated with commercial and industrial activities, such as rooftop-mounted HVAC equipment, delivery trucks, car washes, equipment/vehicle repair, and amplified sound. The City's existing General Plan includes noise standards for non-transportation noise sources (see Table 9). In addition, the City's Municipal Code also includes noise standards for non-transportation noise sources (see Tables 10 and 11). Depending on the uses proposed and the location of nearby noise-sensitive land uses, predicted non-transportation levels could potentially exceed the City's noise standards and, therefore, would be considered to have a **potentially significant** impact.

Proposed General Plan Policies that Provide Mitigation

The proposed 2045 GPU includes numerous goals and policies that would help to further reduce criteria noise impacts on receptors. Relevant policies include policies: SEP-5.1, 5.2, 5.3, 5.4, and 5.7. Compliance with these policies and the City's noise ordinance would ensure specific projects adhere to the Municipal Code and would mitigate any significant nuisance noise from commercial activities, rooftop-mounted HVAC equipment, delivery trucks, car washes, and amplified sound. Therefore, implementation of the 2045 GPU/ZCU would not result in ambient noise level environments at noise-sensitive uses that exceed the City's maximum allowable noise exposure standards set forth in Table 5. Consequently, future noise/land use conflicts between planned residential and commercial land would be **less than significant**.

Long-term Exposure to Transportation Noise

Major noise sources in the planning area consist predominantly of vehicle traffic on area roadways. Major roadway segments in the City include, but are not limited to, US-101, SR-41, and El Camino Real. In addition, as noted earlier in this report, rail traffic along the UPRR also contributes to transportation noise levels in the community. Roadway traffic noise and UPRR noise impacts are discussed in greater detail, as follows:

<u>Roadway Traffic Noise</u>

Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) for existing and future cumulative (year 2045) conditions. Predicted future cumulative traffic noise levels and distances to projected noise contours are summarized in Tables 16. It is important to note that predicted noise contours are approximate and do not take into account shielding or reflection of noise due to intervening terrain or structures. As a result, predicted noise contours should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts.

Predicted increases in future cumulative traffic noise levels, in comparison to existing traffic noise levels, are summarized in Table 17. Under future cumulative conditions with buildout of the 2045 GPU/ZCU and in comparison, to existing conditions, the 2045 GPU/ZCU would contribute to significant increases in traffic noise levels along various roadway segments, including potions of U.S. Highway 101 (Refer to Table 11). In addition, depending on the type of land uses developed and location, future development could be exposed to traffic noise levels in excess of the City's current noise standards for land use compatibility (refer to Table 8). As a result, exposure to vehicular traffic noise on area roadways would be considered a **potentially significant** impact.

Railroad Traffic Noise

The Union Pacific Railroad (UPRR) runs north-south through the City near the western City limits with a portion of the tracks adjacent to Traffic Way. Depending on demand, approximately five trains pass through the City on a daily basis. including three freight trains and two passenger trains (Amtrak Coast Starlight). By year 2045, freight trains traveling along this corridor could potentially increase, depending on future demand. However, projected future train volumes along the UPRR are currently not available.

Predicted train noise levels and distance to noise contours are summarized in Table 16. Based on a conservative estimate of 5 trains per day, average-daily noise levels along the railroad corridor would be approximately 66 dBA CNEL at 100 feet from the rail corridor centerline. Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events could contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses. Although the proposed 2045 GPU/ZCU would not result in an increase in train traffic, the development of future land uses near the train tracks, and could be exposed to train noise levels in excess of the City's current noise standards for land use compatibility (refer to Table 5). Land uses permitted along the rail corridor under the proposed 2045 General Plan are primarily industrial and employment-oriented uses, similar to existing development patterns. Existing residential areas located near the rail corridor would generally remain the same as today, and the proposed 2045 General Plan does not designate new residential land uses immediately adjacent to the tracks. Some development could continue to occur on underutilized parcels. As a result, exposure to railroad traffic noise levels would be considered a **potentially significant** impact.

Table 15. Predicted Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Railroad Track Centerline	Distance to CNEL Contours (feet) from Railroad Track Centerline		
			70	65	60
Freight & Passenger	5	66	51	108	233
UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Does not include shielding from intervening structures or terrain. Projected railroad noise contours are depicted in Figure 4.					

Proposed General Plan Policies that Provide Mitigation

The proposed 2045 GPU includes numerous goals and policies that would help to reduce potential transportation noise impacts to noise-sensitive land uses. Relevant policies include, but are not limited to, policies: SEP-5.2, SEP-5.3, SEP-5.4, SEP-5.6; as well as, MO-1.2, MO-1.3, MO-1.4, AND MO-1.6.

Implementation of the proposed 2045 GPU policies would reduce potential transportation noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. Additional policies have been proposed to promote alternative means of transportation and to minimize noise impacts to residents associated with heavy truck traffic. Implementation of these policies and actions will help to reduce impacts associated with future development. In addition, the 2045 GPU includes noise standards for transportation noise sources (refer to Table 12). With implementation of the proposed 2045 GPU policies, this impact would be considered **less than significant**.

Table 16. 2045 GPU Buildout Roadway Traffic Noise Levels & Contour Distances

Road Segment	ADT Volumes	Speed	CNEL at 50ft. From Near travel-lane Centerline	Distance to CNEL Contour (feet)		
				70 dBA	65 dBA	60 dBA
US-101: Santa Barbara Rd. to Santa Rosa Rd.	63,000	65	79.3	341	731	1,573
US-101: Santa Rosa Rd. to Curbaril Ave.	64,000	65	79.4	345	739	1,589
US-101: Curbaril Ave. to SR-41	63,000	65	79.3	341	731	1,573
US-101: SR-41 to Traffic Way	73,000	65	80	376	806	1,735
US-101: Traffic Way to San Anselmo Rd.	72,000	65	79.9	373	799	1,719
US-101: San Anselmo Rd. to del Rio Rd.	68,000	65	79.6	359	769	1,655
US-101: Del Rio Rd. to San Ramon Rd.	70,000	65	79.8	366	784	1,687
US-101: San Ramon Rd. to Vineyard Rd.	71,000	65	79.8	369	791	1,703
SR-41: Atascadero Ave. to Curbaril Ave.	13,900	45	68.6	56	116	246
SR-41: Santa Rosa Rd. to Curbaril Ave.	13,400	45	68.5	55	113	241
SR-41: US 101 to Atascadero Ave.	17,500	35	67.2	WR	94	199
SR-41: Santa Ysabel Ave. to Mercedes Ave.	8,300	45	67.5	WR	81	175
SR-41: Rocky Canyon Rd. to Mercedes Ave.	7,700	55	69.1	WR	105	226
El Camino Real: San Ramon Rd. to Del Rio Rd.	13,900	45	67.3	WR	130	401
El Camino Real: Del Rio Rd. to Rosario Ave.	13,400	45	67.2	WR	126	387
El Camino Real: Rosario Ave. to Highway 41	17,500	25	62.2	WR	WR	126
El Camino Real: Highway 41 to San Diego Rd.	8,300	45	65.1	WR	81	241
El Camino Real: San Diego Rd. to Santa Barbara Rd.	7,700	45	64.8	WR	76	224

Traffic volumes were derived from the traffic analysis prepared for this project (CCTC 2025). Does not include shielding provided by intervening terrain or structures.
Predicted 2045 roadway traffic noise contours for US-101 and SR-41 are depicted in Figure 4.
WR = Contour is located within road right-of-way

Table 17. Traffic Noise Levels - Existing Compared to 2045 GPU

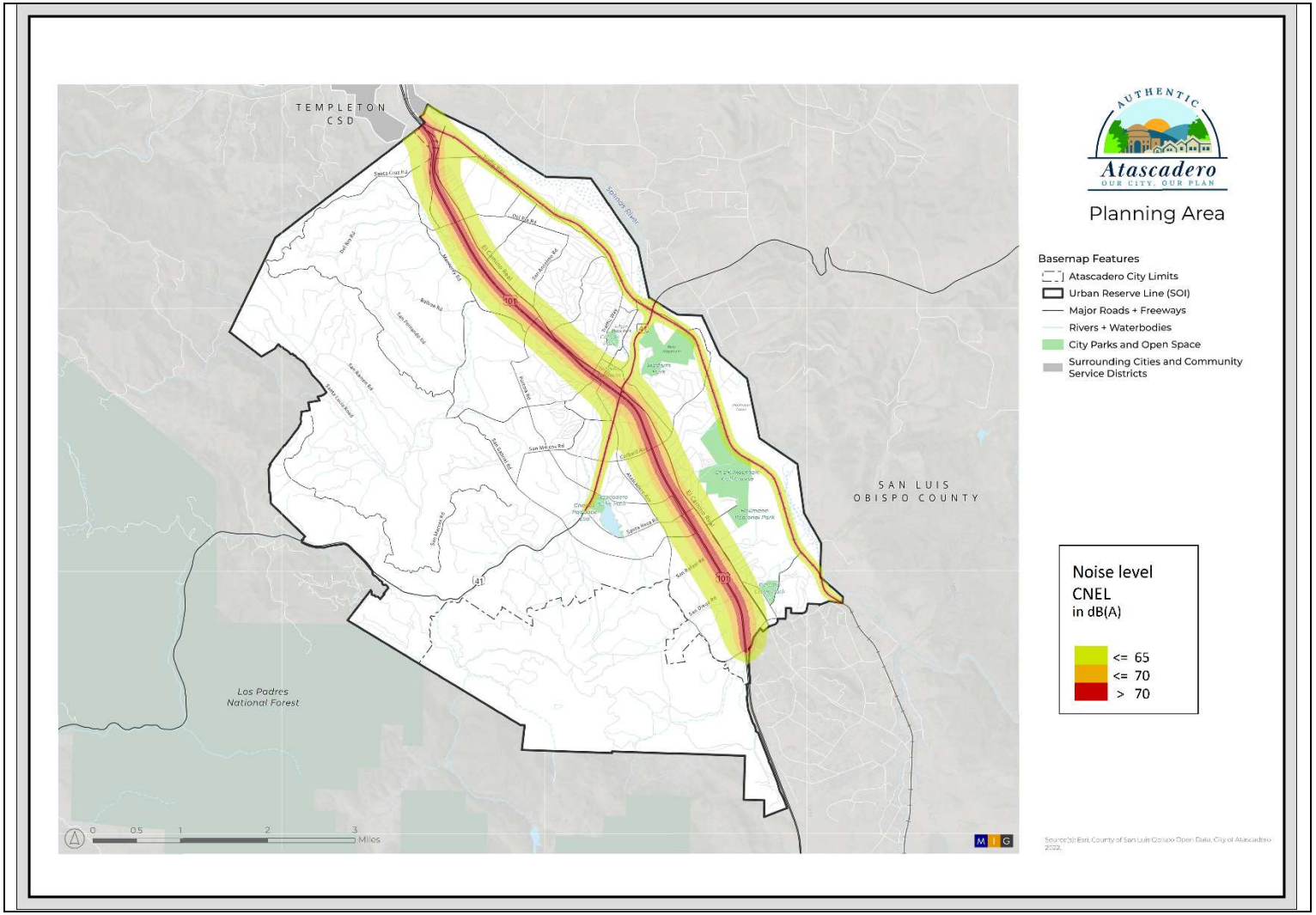
Roadway Segment	CNEL at 50 feet from Near-Travel-Lane Centerline			Potentially Significant?[1]
	Existing Conditions	2045 GPU Buildout	Increase	
US-101: Santa Barbara Rd. to Santa Rosa Rd.	78.7	79.3	0.6	No
US-101: Santa Rosa Rd. to Curbaril Ave.	78.7	79.4	0.7	No
US-101: Curbaril Ave. to SR-41	78.7	79.3	0.6	No
US-101: SR-41 to Traffic Way	77.5	80.0	2.5	**Yes**
US-101: Traffic Way to San Anselmo Rd.	77.5	79.9	2.4	**Yes**
US-101: San Anselmo Rd. to del Rio Rd.	77.5	79.6	2.1	**Yes**
US-101: Del Rio Rd. to San Ramon Rd.	77.6	79.8	2.2	**Yes**
US-101: San Ramon Rd. to Vineyard Rd.	77.6	79.8	2.2	**Yes**
SR-41: Atascadero Ave. to Curbaril Ave.	67.3	68.6	1.3	No
SR-41: Santa Rosa Rd. to Curbaril Ave.	67.6	68.5	0.9	No
SR-41: US 101 to Atascadero Ave.	66.1	67.2	1.1	No
SR-41: Santa Ysabel Ave. to Mercedes Ave.	66.3	67.5	1.2	No
SR-41: Rocky Canyon Rd. to Mercedes Ave.	67.7	69.1	1.4	No
El Camino Real: San Ramon Rd. to Del Rio Rd.	66.0	67.3	1.3	No
El Camino Real: Del Rio Rd. to Rosario Ave.	66.3	67.2	0.9	No
El Camino Real: Rosario Ave. to Highway 41	61.1	62.2	1.1	No
El Camino Real: Highway 41 to San Diego Rd.	63.9	65.1	1.2	No
El Camino Real: San Diego Rd. to Santa Barbara Rd.	63.4	64.8	1.4	No

1. Traffic noise levels were calculated based on traffic volumes derived from the traffic analysis prepared for this project, refer to Table 16 (CCTC 2025).

2. Significant increases are based on the following thresholds (Refer to Table 1):

- *5.0, or greater, where the existing noise level is less than 60 dBA*
- *3.0, or greater, where the existing noise level is 60-65 dBA*
- *1.5, or greater, where the existing noise level is greater than 65 dBA*

Figure 4. Future Noise Contours – Major Surface Transportation Noise Sources



Predicted noise contours do not include shielding from intervening structures or terrain.

Impact N-2: Would the General Plan result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. The effects of ground vibration are influenced by the duration of the vibration and the distance from the vibration source.

Table 18. Summary of Groundborne Vibration Levels and Potential Effects

Vibration Level (in/sec ppv)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of "architectural" damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of "architectural" damage to fragile buildings.
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Potential risk of "architectural" damage may occur at levels above 0.3 in/sec ppv for older residential structures and above 0.5 in/sec ppv for newer structures.

The vibration levels are based on peak particle velocity in the vertical direction for continuous vibration sources, which includes most construction activities.
Source: Caltrans 2020

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. For newer structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.5 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Below 0.10 in/sec there is "virtually no risk of 'architectural' damage to normal buildings." Damage to historic or ancient buildings could occur at levels of 0.08 in/sec ppv. In terms of human annoyance, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 in/sec ppv can be expected to result in increased levels of annoyance to people within buildings (Caltrans, 2020).

Groundborne vibration sources located within the City that could potentially affect future development would be primarily associated with construction activities. With the exception of pavement breaking and pile driving, construction activities and related equipment typically generate groundborne vibration levels of less than 0.2 in/sec, which is the architectural damage risk threshold recommended by Caltrans. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates groundborne vibration levels of less than 0.10 in/sec, or one half of the architectural damage risk level, at 10 feet. The highest vibration level associated with a pavement breaker was 2.88 in/sec at 10 feet. During pile driving, vibration levels near the source depend mainly on the soil's penetration resistance as well as

the type of pile driver used. Impact pile drivers tend to generate higher vibration levels than vibratory or drilled piles. Groundborne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Caltrans indicates that the distance to the 0.2 in/sec ppv criterion for pile driving activities would occur at a distance of approximately 50 feet. However, as with construction-generated noise levels, pile driving can result in a high potential for human annoyance from vibrations, and pile-driving activities are typically considered as being potentially significant if these activities are performed within 200 feet of occupied structures (Caltrans, 2020). As a result, depending on the activities conducted and distance to nearby sensitive land uses, short-term exposure to vibration levels would be considered a **potentially significant impact**.

Proposed General Plan Policies that Provide Mitigation

Proposed 2045 GPU Policy SEP-5.1, Action A, would require the update of the City's Noise Ordinance to incorporate construction best management practices to minimize construction noise when construction activities would be located within 1,000 feet of noise-sensitive land uses. This policy would also help to reduce potential nuisance-related vibration impacts to nearby sensitive land uses.

In addition, standard construction best management practices, such as maintaining equipment in good working condition, locating stationary equipment away from sensitive receptors, and avoiding high-vibration construction methods where feasible, would help reduce groundborne vibration levels during construction. Compliance with the City's Noise Ordinance, which generally limits construction activities to daytime hours (7:00 a.m. to 9:00 p.m.; Atascadero Municipal Code Section 9-14.03(c)), would reduce the potential for construction-related groundborne vibration to affect nearby sensitive receptors during nighttime periods when occupants are more likely to be present and disturbance would be more noticeable.

Due to the short-term nature of construction vibrations, the intermittent frequency of construction vibrations, and the required compliance with the City's hourly restrictions related to construction activities, construction vibration level increases will not result in exposure of persons to or generation of excessive groundborne vibration that would result in a significant increase in annoyance. By restricting the hours of construction to avoid vibrations during times when it could potentially be more of a nuisance, the impact of new construction vibration is reduced to a **less-than-significant** level through the application of the 2045 GPU's mitigating policies.

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APPENDIX A

Noise Modeling

	Segment	% of LDA Day	% of MDT Day	% of HDT Day	% of LDA Evening	% of MDT Evening	% of HDT Evening	% of LDA Night	% of MDT Night	% of HDT Night	Total %	Lanes	Speed Limit	AHW
US-101	Santa Barbara Rd to Santa Rosa Rd	71.28	0.85	6.09	11.87	0.05	0.19	8.82	0.1	0.75	100	4	65	41
US-101	Santa Rosa Rd to Curbaril Ave	71.28	0.85	6.09	11.87	0.05	0.19	8.82	0.1	0.75	100	4	65	41
US-101	Curbaril Ave to SR-41	71.28	0.85	6.09	11.87	0.05	0.19	8.82	0.1	0.75	100	4	65	41
US-101	SR-41 to Traffic Way	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	Traffic Way to San Anselmo Rd	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	San Anselmo Rd to del Rio Rd	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	Del Rio Rd to San Ramon Rd	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	San Ramon Rd to Vineyard Rd	74.79	0.6	2.42	12.45	0.03	0.08	9.25	0.07	0.31	100	4	65	41
SR-41	Atascadero Ave to Curbaril Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	45	18
SR-41	Santa Rosa Rd to Curbaril Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	45	18
SR-41	US 101 to Atascadero Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	35	18
SR-41	Santa Ysabel Ave to Mercedes Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	45	18
SR-41	Rocky Canyon Rd to Mercedes Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	55	18
SR-41	El Camino Real: San Ramon Rd to Del Rio Rd	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30
SR-41	El Camino Real: Del Rio Rd to Rosario Ave	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30
SR-41	El Camino Real: Rosario Ave to Highway 41	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	25	30
SR-41	El Camino Real: Highway 41 to San Diego Rd	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30
SR-41	El Camino Real: San Diego Rd to Santa Barba	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30

Road Segment	ADT Volumes	Speed	CNEL at 50ft. From Near travel-lane Centerline	CNEL Contour 70	CNEL Contour 65	CNEL Contour 60
US-101: Santa Barbara Rd to Santa Rosa Rd	55000	65	78.7	313	670	1441
US-101: Santa Rosa Rd to Curbaril Ave	55000	65	78.7	313	670	1441
US-101: Curbaril Ave to SR-41	55000	65	78.7	313	670	1441
US-101: SR-41 to Traffic Way	63000	65	77.5	261	557	1196
US-101: Traffic Way to San Anselmo Rd	63000	65	77.5	261	557	1196
US-101: San Anselmo Rd to del Rio Rd	63000	65	77.5	261	557	1196
US-101: Del Rio Rd to San Ramon Rd	65000	65	77.6	266	568	1221
US-101: San Ramon Rd to Vineyard Rd	65000	65	77.6	262	558	1200
SR-41: Atascadero Ave to Curbaril Ave	10200	45	67.3	NA	95	201
SR-41: Santa Rosa Rd to Curbaril Ave	11100	45	67.6	NA	100	212
SR-41: US 101 to Atascadero Ave	13700	35	66.1	NA	80	169
SR-41: Santa Ysabel Ave to Mercedes Ave	6300	45	66.3	NA	68	145
SR-41: Rocky Canyon Rd to Mercedes Ave	5600	55	67.7	NA	85	182
El Camino Real: San Ramon Rd to Del Rio Rd	10200	45	66.0	NA	98	295
El Camino Real: Del Rio Rd to Rosario Ave	11100	45	66.3	NA	105	321
El Camino Real: Rosario Ave to Highway 41	13700	25	61.1	NA	NA	100
El Camino Real: Highway 41 to San Diego Rd	6300	45	63.9	NA	65	184
El Camino Real: San Diego Rd to Santa Barbara Rd	5600	45	63.4	NA	59	164

Road Segment	ADT Volumes	Speed	CNEL at 50ft. From Near travel-lane Centerline	Distance to CNEL Contour (feet)		
				CNEL Contour 70	CNEL Contour 65	CNEL Contour 60
US-101: Santa Barbara Rd to Santa Rosa Rd	63000	65	79.3	341	731	1573
US-101: Santa Rosa Rd to Curbaril Ave	64000	65	79.4	345	739	1589
US-101: Curbaril Ave to SR-41	63000	65	79.3	341	731	1573
US-101: SR-41 to Traffic Way	73000	65	80	376	806	1735
US-101: Traffic Way to San Anselmo Rd	72000	65	79.9	373	799	1719
US-101: San Anselmo Rd to del Rio Rd	68000	65	79.6	359	769	1655
US-101: Del Rio Rd to San Ramon Rd	70000	65	79.8	366	784	1687
US-101: San Ramon Rd to Vineyard Rd	71000	65	79.8	369	791	1703
SR-41: Atascadero Ave to Curbaril Ave	13900	45	68.6	56	116	246
SR-41: Santa Rosa Rd to Curbaril Ave	13400	45	68.5	55	113	241
SR-41: US 101 to Atascadero Ave	17500	35	67.2	NA	94	199
SR-41: Santa Ysabel Ave to Mercedes Ave	8300	45	67.5	NA	81	175
SR-41: Rocky Canyon Rd to Mercedes Ave	7700	55	69.1	NA	105	226
El Camino Real: San Ramon Rd to Del Rio Rd	13900	45	67.3	NA	130	401
El Camino Real: Del Rio Rd to Rosario Ave	13400	45	67.2	NA	126	387
El Camino Real: Rosario Ave to Highway 41	17500	25	62.2	NA	NA	126
El Camino Real: Highway 41 to San Diego Rd	8300	45	65.1	NA	81	241
El Camino Real: San Diego Rd to Santa Barbara Rd	7700	45	64.8	NA	76	224

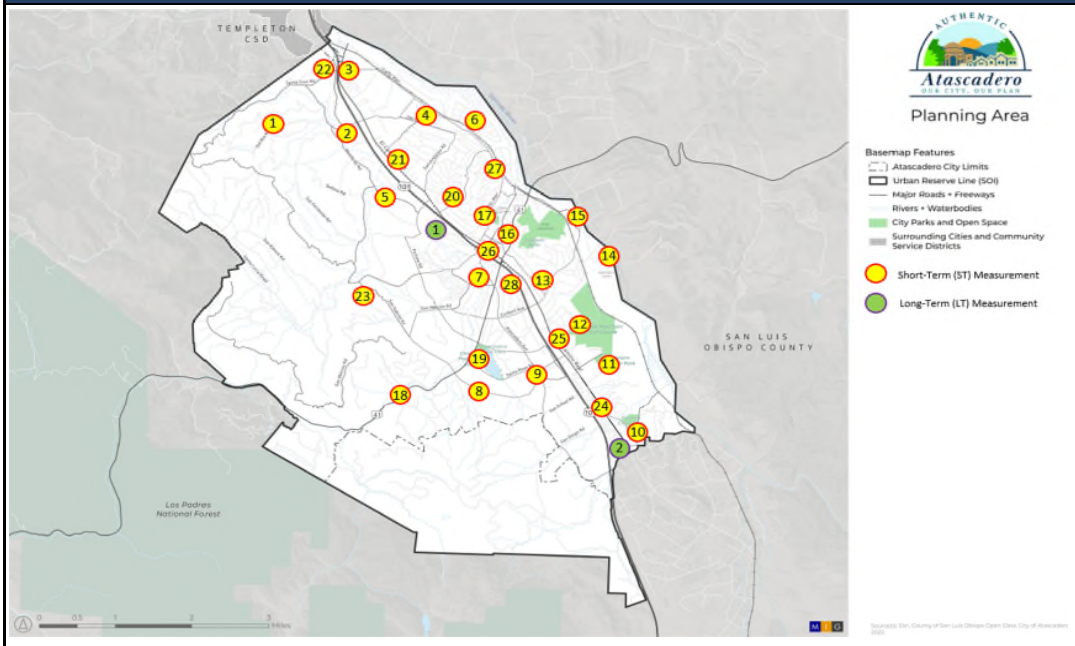
	CNEL at 50 feet from Near-Travel-Lane Centerline		
Roadway Segment	**Existing Conditions**	**2045 GPU Buildout**	**Increase**
US-101: Santa Barbara Rd to Santa Rosa Rd	78.7	79.3	0.6
US-101: Santa Rosa Rd to Curbaril Ave	78.7	79.4	0.7
US-101: Curbaril Ave to SR-41	78.7	79.3	0.6
US-101: SR-41 to Traffic Way	77.5	80.0	2.5
US-101: Traffic Way to San Anselmo Rd	77.5	79.9	2.4
US-101: San Anselmo Rd to del Rio Rd	77.5	79.6	2.1
US-101: Del Rio Rd to San Ramon Rd	77.6	79.8	2.2
US-101: San Ramon Rd to Vineyard Rd	77.6	79.8	2.3
SR-41: Atascadero Ave to Curbaril Ave	67.3	68.6	1.3
SR-41: Santa Rosa Rd to Curbaril Ave	67.6	68.5	0.9
SR-41: US 101 to Atascadero Ave	66.1	67.2	1.1
SR-41: Santa Ysabel Ave to Mercedes Ave	66.3	67.5	1.2
SR-41: Rocky Canyon Rd to Mercedes Ave	67.7	69.1	1.4
El Camino Real: San Ramon Rd to Del Rio Rd	66.0	67.3	1.3
El Camino Real: Del Rio Rd to Rosario Ave	66.3	67.2	0.9
El Camino Real: Rosario Ave to Highway 41	61.1	62.2	1.1
El Camino Real: Highway 41 to San Diego Rd	63.9	65.1	1.2
El Camino Real: San Diego Rd to Santa Barbara Rd	63.4	64.8	1.4

NOISE MEASUREMENT SURVEY FORM

SHEET	*1*	*OF*	*2*

DATE:	October 10-13, 2022
PROJECT:	2045 Atascadero GPU
LOCATION:	Atascadero, CA
MONITORING STAFF:	Jon Pambakian/Kurt Legleiter

LOCATION MAP:



NOISE MEASUREMENT CONDITIONS & EQUIPMENT

MET CONDITIONS & MONITORING EQUIPMENT:	10/10: TEMP: 72-86 F. | HUMIDITY: 31-70 % | WIND SPEED: 2-5 MPH | SKY: CLEAR | GROUND: DRY				
	10/11: TEMP: 59-85 F. | HUMIDITY: 35-76 % | WIND SPEED: 1-3 MPH | SKY: CLEAR | GROUND: DRY				
	10/12: TEMP: 59-86 F. | HUMIDITY: 32-78 % | WIND SPEED: 2-5 MPH | SKY: CLEAR | GROUND: DRY				
	10/13: TEMP: 52-81 F. | HUMIDITY: 38-93 % | WIND SPEED: 3-4 MPH | SKY: CLEAR | GROUND: DRY				
	CLOUD COVER BY CLASS (OC=OVERCAST):	3	(1. HEAVY OC, 2. LIGHT OC, 3. SUNNY, 4. CLEAR NIGHT, 5. OC NIGHT)		
	MET. METER:	KESTREL 5500			
NOISE MONITORING EQUIPMENT:	LARSON DAVIS SLM MODEL:	SoftdB Picollo Type II/LD LxT			
	CALIBRATOR:	CAL200/250			
NOISE MONITORING SETUP:	WITHIN 10 FT OF REFLECTIVE SURFACE?:	NO	MICROPHONE HEIGHT AGL (FT):	5	
	CALIBRATED PRIOR TO AND UPON COMPLETION OF MEASUREMENTS:	YES	METER SETTINGS:	A-WHT	SLOW

NOISE MEASUREMENT SURVEY FORM

AMBIENT
AIR QUALITY & NOISE CONSULTING

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LOCATION:	Atascadero, CA
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MEASUREMENT LOCATION		DURATION (Minutes)	PRIMARY NOISE SOURCES NOTED	MEASURED NOISE LEVELS LEQ							
10-Oct-22											
ST1	7800 Del Rio Road	10:41 – 10:51	Birds, Electrical Equipment	44.3							
ST2	Apple Valley Park	11:03 – 11:13	Birds, Traffic, People Walking on Path	45.3							
ST3	5400 Santa Cruz Road	11:50 – 12:00	Distant Traffic, Birds	57.7							
ST4	San Benito Elementary School	12:10 – 12:20	Birds, Truck Passby	50.3							
ST5	Monterey Road Elementary School	12:32 – 12:42	Traffic, Birds	63.2							
ST6	The Lakes Lake	12:57 – 13:07	Birds	41.5							
ST7	High School Hill Road	15:08 – 15:18	Traffic, Dogs	52.6							
11-Oct-22											
ST8	Hope Lutheran Church	10:02 – 10:12	Traffic, Propeller Plane Overflight, Dogs, Birds	50.7							
ST9	9600 Atascadero Avenue	10:26 – 10:36	Traffic, Birds	60.5							
ST10	Paloma Creek Park	10:47 – 10:57	Distant Traffic, Children, Birds	44.4							
ST11	Heilmann Regional Park	11:10 – 11:20	Traffic, Golf Cart, Birds, Squirrels	40.4							
ST12	8500 El Corte Road	11:31 – 11:41	Traffic	52.5							
ST13	Pueblo Avenue/Sombrilla Avenue	11:53 – 12:03	Traffic, Conversation, Propeller Plane Overflight, Dogs	53.5							
ST14	7700 Aragon Road	12:16 – 12:26	Dogs, Birds	49.6							
ST15	7100 Sycamore Road	12:40 – 12:50	Traffic, Birds, Children, Sheep/Goat	64.7							
ST16	5454 CA-41 Parking	13:03 – 13:13	Traffic	64.8							
ST17	Traffic Way Park	13:24 – 13:34	Traffic	57.8							
12-Oct-22											
ST18	12500 CA-41	10:51 – 11:01	Traffic	67.9							
ST19	Atascadero Lake Park	11:25 – 11:35	Traffic	63.9							
ST20	Nogales Avenue/Lobos Avenue	11:56 – 12:06	Traffic, Birds, Dog, Distant Power Tool	53.4							
ST21	3300 El Camino Real	12:19 – 12:29	Traffic	68.2							
ST22	1000 San Ramon Road	13:24 – 13:34	Traffic	71.2							
ST23	6000 San Gabriel Road	14:06 – 14:16	Traffic, Propeller Plane Overflight	56.8							
13-Oct-22											
ST24	10700 El Camino Real	10:40 – 10:50	Traffic	66.9							
ST25	8965 El Camino Real	11:00 – 11:10	Traffic	71.7							
ST26	Sunken Gardens	11:22 – 11:32	Traffic, Water Fountain	58.3							
ST27	4890 Alamo Avenue	11:45 – 11:55	Dogs, Vehicle Passby	56							
ST28	6050 Marchant Avenue	12:56 – 13:06	Traffic	73.1							