4.13 NOISE AND VIBRATION

This section evaluates the potential effects of implementing the 2040 General Plan on existing noise and vibration levels related to construction, traffic, industrial, commercial, agricultural uses, railroads, and airports. As described in the "Approach to the Environmental Analysis" section, above, the following assessment of impacts is based primarily on the characterization of existing environmental conditions and regulatory setting provided in the January 2020 Background Report (Appendix B). Where necessary, each section identifies changes (e.g., new information, regulatory changes) to the environmental and regulatory setting included in the Background Report that are relevant to understanding the 2040 General Plan's potential impacts.

Comments on the notice of preparation included concerns regarding noise source from airports, rail, and agriculture operations, as well as, concerns regarding noise impacts related to exploration for and production of oil and gas. These comments are addressed in this section, as appropriate. The NOP and comments on the NOP are included in Appendix A.

4.13.1 Background Report Setting Updates

REGULATORY SETTING

The Background Report (Appendix B) accurately describes the regulatory setting for the purpose of this evaluation in Section 11.6, "Noise and Vibration." There is no additional information necessary to understand the potential noise and vibration impacts of the 2040 General Plan.

ENVIRONMENTAL SETTING

In addition to the information provided in Section 11.6, "Noise and Vibration," of the Background Report (Appendix B), the following information is relevant to understanding and evaluating the potential noise and vibration impacts of the 2040 General Plan.

The existing traffic noise evaluation included in the Background Report (Appendix B) analyzed a number of roadway segments that are located outside of the County's jurisdiction. In addition, the traffic noise assessment included in the Background Report (pages 11-88 to 11-97) was based on traffic data from 2014 and 2015. Since the preparation of the Background Report, more recent traffic data are available. For the purposes of the analysis, the traffic noise modeling was updated to only evaluate roadway and highway segments within the unincorporated portions of the county that are regularly counted by the County's Public Works Agency and to include updated traffic counts conducted in 2017 and 2018. Table 4.13-1 provides the modeled existing noise levels at 50 feet from the roadway, as well as distances to the 60, 65, and 70 A-weighted decibel (dBA) community noise equivalent level (CNEL) contour for all modeled roadways. Detailed noise modeling inputs are provided in Appendix E.

Table 4.13-1 Existing Noise Levels and Noise Contour Distances

Corridor and Segment		Noise (dBA CNEL) at 50 feet from Roadway	Noise Contour Distance in Feet		
			60 dBA	65 dBA	70 dBA
1	Aggen Road north of Los Angeles Avenue (SR 118)	54.7	29	9	3
2	Balcom Canyon Road south of South Mountain Road	56.4	44	14	4
3	Balcom Canyon Road north of Los Angeles Avenue (SR 118)	56.4	44	14	4
4	Bardsdale Avenue east of Sespe Street	56.7	47	15	5
5	Beardsley Road north of Central Avenue	61.2	133	42	13
6	Box Canyon Road south of Santa Susana Pass Road	58.4	69	22	7
7	Bradley Road north of Los Angeles Avenue (SR 118)	62.2	165	52	16
8	Briggs Road south of Telegraph Road	62.9	197	62	20
9	Briggs Road north of Telegraph Road	58.7	74	24	7
10	Bristol Road west of Montgomery Avenue	65.0	317	100	32
11	Broadway Road west of Grimes Canyon Road (SR 23)	58.3	68	21	7
12	Burnham Road south of Baldwin Road (SR 150)	55.8	38	12	4
13	Burnham Road east of Santa Ana Road	54.9	31	10	3
14	Calle Yucca north of Camino Manzanas	54.2	26	8	3
15	Camino Dos Rios west of Lynn Road	56.8	48	15	5
16	Canada Larga Road east of Ventura Avenue	53.0	20	6	2
17	Casitas Vista Road west of Ojai Freeway (SR 33)	55.8	38	12	4
18	Center School Road south of Los Angeles Avenue (SR 118)	56.0	40	13	4
19	Center Street (Piru) west of Telegraph Road (SR 126)	54.2	26	8	3
20	Central Avenue west of Ventura Freeway (US 101)	67.0	505	160	51
21	Central Avenue west of Santa Clara Avenue	66.7	468	148	47
22	Central Avenue east of Vineyard Avenue (SR 232)	63.5	224	71	22
23	Channel Islands Boulevard west of Rice Avenue	67.6	579	183	58
24	Creek Road east of Country Club Drive	53.1	20	6	2
25	Creek Road east of Ventura Avenue (SR 33)	59.9	97	31	10
26	Donlon Road north of La Cumbre Road	51.1	13	4	1
27	Doris Avenue east of Victoria Avenue	63.7	234	74	23
28	El Roblar Drive west of Maricopa Highway (SR 33)	57.3	53	17	5
29	Etting Road east of Dodge Road	60.5	112	35	11
30	Fairview Road east of Maricopa Highway (SR 33)	51.2	13	4	1
31	Fairway Drive north of Valley Vista Drive	56.6	45	14	5
32	West Fifth Street east of North Harbor Boulevard	59.0	79	25	8
33	Foothill Road west of Peck Road	61.1	128	40	13
34	Foothill Road west of Briggs Road	56.2	42	13	4
35	Foothill Road east of North Wells Road	61.7	149	47	15
36	Foothill Road east of Saticoy Avenue	63.2	207	66	21
37	Gonzales Road east of North Harbor Boulevard	63.3	213	67	21
38	Grimes Canyon Road north of Los Angeles Avenue (SR 118)	61.5	140	44	14
39	Guiberson Road east of Chambersburg Road (SR 23)	57.3	53	17	5
40	Harbor Boulevard north of Gonzales Road	70.6	1153	365	115
41	Harbor Boulevard south of Gonzales Road	70.3	1074	340	107
42	Howe Road east of Torrey Road	50.7	12	4	1
43	Hueneme Road east of Las Posas Road	67.1	512	162	51
44	Hueneme Road east of Nauman Road	66.6	452	143	45
45	Hueneme Road east of Wood Road	66.1	412	130	41

Corridor and Segment		Noise (dBA CNEL) at 50 feet from Roadway	Noise Contour Distance in Feet		
			60 dBA	65 dBA	70 dBA
46	Hueneme Road east of Olds Road	67.9	620	196	62
47	Kanan Road east of Lindero Canyon Road	66.0	399	126	40
48	Kanan Road east of Hollytree Drive/Oak Hills Drive	66.0	399	126	40
49	Kanan Road south of Tamarind Street	67.7	590	187	59
50	La Luna Avenue south of Lomita Avenue	56.4	44	14	4
51	Laguna Road east of Pleasant Valley Road	60.0	101	32	10
52	Las Posas Road north of East Fifth Street (SR 34)	67.1	510	161	51
53	Las Posas Road south of East Fifth Street (SR 34)	67.3	537	170	54
54	Las Posas Road south of Hueneme Road	65.6	361	114	36
55	Lewis Road south of Pleasant Valley Road	69.0	788	249	79
56	Lewis Road north of Potrero Road	67.9	617	195	62
57	Lockwood Valley Road west of Kern County Line	56.8	48	15	5
58	Lockwood Valley Road east of Maricopa Highway (SR 33)	47.3	5	2	1
59	Lomita Avenue east of Tico Road	58.0	63	20	6
60	Main Street (Piru) north of Telegraph Road (SR 126)	55.8	38	12	4
61	Moorpark Road north of Santa Rosa Road	70.4	1100	348	110
62	Old Telegraph Road west of Grand Avenue	57.8	60	19	6
63	Olds Road north of Hueneme Road	60.0	101	32	10
64	Olivas Park Drive west of Victoria Avenue	68.2	659	208	66
65	Pasadena Avenue east of Sespe Street	50.7	12	4	1
66	Patterson Road south of Doris Avenue	51.9	15	5	2
67	Pleasant Valley Road south of East Fifth Street (SR 34)	69.4	861	272	86
68	Pleasant Valley Road west of Las Posas Road	57.8	60	19	6
69	Portero Road east of Lake Sherwood Drive East	62.6	180	57	18
70	Portero Road west of Stafford Road	58.7	73	23	7
71	Portero Road west of Hidden Valley Road	50.6	12	4	1
72	Portero Road at Milepost 2.75	57.4	55	18	6
73	Portero Road east of Lewis Road	62.7	188	59	19
74	Rice Avenue south of East Fifth Street (SR 34)	71.7	1468	464	147
75	Rice Avenue north of Channel Islands Boulevard	70.8	1200	379	120
76	Rice Avenue north of Hueneme Road	59.8	96	30	10
77	Rice Road south of Lomita Avenue	59.0	80	25	8
78	Rose Avenue south of Los Angeles Avenue (SR 118)	62.8	191	60	19
79	Rose Avenue south of Central Avenue	63.7	233	74	23
80	Rose Avenue north of Collins Street	65.9	388	123	39
81	Santa Ana Boulevard east of Ventura River	58.5	70	22	7
82	Santa Ana Road south of Baldwin Road (SR 150)	53.1	21	6	2
83	Santa Ana Road south of Santa Ana Boulevard	57.9	62	19	6
84	Santa Clara Avenue north of Friedrich Road	69.0	803	254	80
85	Santa Clara Avenue south of Los Angeles Avenue (SR 118)	69.9	983	311	98
86	Santa Rosa Road west of Moorpark Road	70.7	1175	371	117
87	Santa Rosa Road west of East Las Posas Road	69.0	787	249	79
88	Santa Susana Pass Road east of Katherine Road	58.2	66	21	7
89	Sespe Street north of South Mountain Road	61.6	144	45	14
90	Sespe Street south of Pasadena Avenue	55.7	37	12	4
91	South Mountain Road east of Balcom Canyon Road	54.9	31	10	3

Corridor and Segment		Noise (dBA CNEL) at 50 feet from Roadway	Noise Contour Distance in Feet		
			60 dBA	65 dBA	70 dBA
92	South Mountain Road south of Santa Clara River	56.1	41	13	4
93	Stockton Road east of Balcom Canyon Road	51.6	15	5	1
94	Sturgis Road west of Pleasant Valley Road	63.8	239	76	24
95	Tapo Canyon Road south of Bennett Road	52.8	19	6	2
96	Telegraph Road west of Briggs Road	64.8	304	96	30
97	Telegraph Road west of Olive Road	64.7	292	92	29
98	Tico Road north of Ventura Avenue (SR 150)	56.4	44	14	4
99	Tierra Rejada Road east of Moorpark Freeway (SR 23)	71.2	1323	419	132
100	Torrey Road south of Telegraph Road (SR 126)	56.0	40	13	4
101	Valley Vista Drive south of Calley Aurora	59.0	80	25	8
102	Ventura Avenue north of Canada Larga Road	56.8	48	15	5
103	Ventura Avenue north of Shell Road	59.0	80	25	8
104	Victoria Avenue south of Olivas Park Drive	73.8	2386	755	239
105	Walnut Avenue north of Los Angeles Avenue (SR 118)	53.3	21	7	2
106	Wendy Drive north of Gerald Drive	63.2	207	65	21
107	Wood Road south of Hueneme Road	58.7	74	24	7
108	Wood Road south of East Fifth Street (SR 34)	67.3	537	170	54
109	Wooley Road west of Rice Avenue	67.4	547	173	55
110	Yerba Buena Road north of Pacific Coast Highway (SR 1)	49.4	9	3	1
Freeways					
111	SR 1 at Calleguas Creek	70.7	1179	373	118
112	SR 1 at Seacliff Colony, Junction SR 101	66.9	488	154	49
113	SR 1 at Las Cruces, SR 101, Mobil Oil Pier	59.0	80	25	8
114	SR 23 at Grimes Canyon Road	68.6	726	229	73
115	SR 23 at Junction SR 126, Ventura Road	67.1	508	161	51
116	SR 33 at West Junction SR 150, Baldwin Road	66.7	465	147	47
117	SR 33 at Los Padres National Forest Boundary	55.1	33	10	3
118	SR 33 at Sespe Gorge Maintenance Station	50.0	10	3	1
119	SR 33 at Ventura/Santa Barbara County Line	53.3	21	7	2
120	SR 34 at Junction SR 118, Los Angeles Avenue	67.7	590	187	59
121	U.S. Highway 101 at Victoria Avenue	80.9	12207	3860	1221
122	U.S. Highway 101 at Ventura/Santa Barbara County Line	78.9	7798	2466	780
123	SR 118 at Junction SR 232 (Westbound)	74.6	2882	912	288
124	SR 118 at SR 34, Somis Road (Westbound)	71.8	1530	484	153
125	SR 118 at Grimes Canyon Road	72.1	1632	516	163
126	SR 118 at West Junction SR 23, Moorpark Avenue	71.7	1475	466	147
127	SR 150 at Santa Barbara/Ventura County Line	n/a			
128	SR 150 at Junction SR 33 South (South)	63.0	197	62	20
129	SR 150 at Santa Paula North City Limit	57.7	58	18	6
130	SR 232 and Junction SR 118	64.8	303	96	30

Notes: SR = State Route; dBA = a-weighted decibels

Gray shaded cells reflect roadway segments exceeding 60 dBA CNEL at 50 feet from the roadway centerline.

All modeling assumes average pavement, level roadways (less than 1.5 percent grade), constant traffic flow, and does not account for shielding of any type or finite roadway adjustments. All noise levels are reported as A-weighted noise levels.

Source: Modeled by Ascent Environmental in 2019; based on traffic data provided by GHD (2019).

4.13.2 Environmental Impacts and Mitigation Measures

METHODOLOGY

Construction

To assess potential short-term noise and vibration impacts that could result from construction activities associated with future development under the 2040 General Plan, typical construction source noise and vibration levels were determined based on methodologies, reference noise levels, and usage factors from the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment* (FTA 2006) and the Federal Highway Administration (FHWA) *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels are noise and vibration levels for specific equipment or activity types that are well documented in the field of acoustics.

Specific equipment and construction site locations of future development are not available at this time. However, to evaluate potential construction noise and vibration impacts, typical construction equipment used for general construction phases, such as site preparation/foundation work, utility improvements, roadway improvements, and vertical construction, were analyzed.

Operations

Assessment of potential long-term (operational) noise impacts resulting from increases in traffic volumes on State highways and County-operated roadways in the unincorporated areas was conducted using modeling based on the California Department of Transportation's (Caltrans) traffic noise analysis protocol and technical noise supplement (Caltrans 2013), and the 2016 Ventura County Transportation Commission countywide travel demand model. Traffic assumptions were based on an analysis provided by GHD, which used the 2018 Baseline Model for Ventura County as well as the 2040 Ventura County General Plan Land Use Model, allowing for an analysis of growth trends within the unincorporated county roadways (GHD 2019). To assess noise impacts, traffic noise levels under existing and forecasted growth (year 2040) conditions for affected roadway segments were modeled. The modeling conducted does not account for the acoustic dampening effects of any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings) and, consequently, represents worst-case noise levels.

To assess noise and vibration impacts from railroads, the *Transit Noise and Vibration Impact Assessment* (FTA 2006) was used to determine approximate vibration levels in close proximity to rail lines. Railroad data (e.g., engine type, trains per day) for the county were obtained from Amtrak (2016), Metrolink (2014), and the Multi-County Goods Movement Action Plan (2008). Using this data, railroad noise generated by Amtrak and Metrolink commuter diesel locomotives and general freight movement was modeled based on Noise Impact Assessment Guidelines for assessing railroad and transit noise (FTA 2006, Amtrak 2016, cited in Ventura County 2018; Metrolink 2014, cited in Ventura County 2018; Los Angeles County Metropolitan Transportation Authority et. al 2008).

Aircraft noise impacts on existing and future noise-sensitive land uses were evaluated using noise contours provided in the *Airport Comprehensive Land Use Plan for Ventura County* (ACLUP; Ventura County Airport Land Use Commission 2000), the *Naval Base Ventura County Point Mugu Air Installations Compatible Use Zones Program* and the land uses identified in the General Plan Land Use Diagram.

Stationary sources, primarily from agricultural and industrial land uses, were also evaluated based on the County's noise standards. Long-term (operational) impacts were based on reference noise emission levels, measured noise levels for activities and equipment associated agricultural and industrial land uses within the plan area, and standard attenuation rates and modeling techniques.

In response to 2019 revisions to the State CEQA Guidelines (Public Resources Code Section 15126.2) and the 2015 California Supreme Court case, *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, impacts from exposure of a project to environmental hazards are not considered significant effects unless a project exacerbated the risks from such hazards. However, lead agencies retain the authority, separate and apart from CEQA, to include a review of potential impacts of the environment on a project when a project is undertaken by a lead agency, such as the 2040 General Plan. The 2040 General Plan is a comprehensive document that broadly establishes policy, not only related to the environment, but also related to public health and safety. Therefore, the analysis of noise impacts in this section considers whether the 2040 General Plan could cause or exacerbate noise impacts and whether the 2040 General Plan could result in impacts from exposure to noise. The discussion of potential impacts from exposure to noise is provided for information purposes only and is neither required by CEQA nor subject to its requirements.

THRESHOLDS OF SIGNIFICANCE

As discussed in the "Approach to the Environmental Analysis" section, the thresholds used to determine the significance of the 2040 General Plan's impacts are based on the County's adopted Initial Study Assessment Guidelines (ISAG), which include threshold criteria to assist in the evaluation of significant impacts for individual projects. Appendix G of the State CEQA Guidelines also provides considerations for determining the significance of a project's impacts, in the form of initial study checklist questions.

To develop thresholds of significance for this section of the draft EIR, the County has deviated from the ISAG threshold criteria, where appropriate, to appropriately consider the programmatic nature of a general plan for the entire unincorporated area and to incorporate the 2019 revisions to the Appendix G checklist.

Specifically, the noise threshold in ISAG Section 21 was modified into two separate thresholds; one threshold related to temporary construction noise based on the *Ventura County Construction Noise Threshold Criteria and Control Plan* (Advanced Engineering Acoustics 2005), and one threshold related to permanent noise based on the County's noise standards identified within the 2040 General Plan.

For the purpose of this draft EIR, implementation of the 2040 General Plan would have a significant noise or vibration impact if it would:

- Generate a substantial temporary increase in ambient noise levels at noise-sensitive land uses in excess of the following standards established by the *Ventura County Construction Noise Threshold Criteria and Control Plan*:
  - 75 dBA hourly equivalent noise level (L_{eq}) during daytime hours (7:00 a.m. to 7:00 p.m. weekdays or 9:00 a.m. to 7:00 p.m. weekends and holidays), or an increase of 3 dBA L_{eq} above ambient levels, when construction lasts 0 to 3 days.

- 70 dBA L_{eq} during daytime hours (7:00 a.m. to 7:00 p.m. weekdays or 9:00 a.m. to 7:00 p.m. weekends and holidays), or an increase of 3 dBA L_{eq} above ambient levels, when construction lasts 4 to 7 days.
- 65 dBA L_{eq} during daytime hours (7:00 a.m. to 7:00 p.m. weekdays or 9:00 a.m. to 7:00 p.m. weekends and holidays), or an increase of 3 dBA L_{eq} above ambient levels, when construction lasts 1 to 2 weeks.
- 60 dBA L_{eq} during daytime hours (7:00 a.m. to 7:00 p.m. weekdays or 9:00 a.m. to 7:00 p.m. weekends and holidays), or an increase of 3 dBA L_{eq} above ambient levels, when construction lasts 2 to 8 weeks.
- 55 dBA L_{eq} during daytime hours (7:00 a.m. to 7:00 p.m. weekdays or 9:00 a.m. to 7:00 p.m. weekends and holidays), or an increase of 3 dBA L_{eq} above ambient levels, when construction lasts more than 8 weeks.
- 50 dBA L_{eq} during the hours of 7:00 p.m. to 10:00 p.m. or an increase of 3 dBA L_{eq} above ambient levels.
- 45 dBA L_{eq} during the hours of 10:00 p.m. to 7:00 p.m. weekdays or 10:00 p.m. to 9:00 a.m. weekends and holidays, or an increase of 3 dBA L_{eq} above ambient levels.

- Generate a substantial permanent increase in ambient noise levels at noise-sensitive land uses in excess of the following standards:
  - For noise generated from traffic on roadways and heavy industrial activities, indoor noise levels in habitable rooms must not exceed 45 dBA CNEL or outdoor noise levels must not exceed 60 dBA CNEL or 65 dBA L_{eq} during any one hour.
  - For noise generated from railways, indoor noise levels habitable rooms must not exceed 45 dBA CNEL or outdoor noise levels must not exceed 60 dBA CNEL or 65 dBA L_{eq} during any one hour and outdoor noise levels must not exceed 60 dBA sound level exceeded 10 percent of the time (L_{10}) during any one hour.
  - For noise generated from stationary sources, ongoing noise levels near sensitive receptors, as measured at the exterior wall of the building, must not exceed:
    - 55 dBA L_{eq} or ambient noise level plus 3 dBA, whichever is greater, during the hours of 6:00 a.m. to 7:00 p.m.
    - 50 dBA L_{eq} or ambient noise level plus 3 dBA, whichever is greater, during the hours of 7:00 p.m. to 10:00 p.m.
    - 45 dBA L_{eq} or ambient noise level plus 3 dBA, whichever is greater, during the hours of 10:00 p.m. to 6:00 a.m.
- Expose noise-sensitive land uses to excessive aircraft noise by locating new discretionary residential land uses within a 60 dBA CNEL aircraft noise contour unless interior noise levels can be mitigated to a maximum 45 dBA CNEL**.**
- Include construction activities involving blasting, pile-driving, vibratory compaction, demolition, and drilling or excavation which exceed the vibration threshold criteria provided in the Transit Noise and Vibration Impact Assessment, as detailed below:
  - Generate excessive groundborne vibration or groundborne noise that exceeds the construction vibration damage criteria listed in Table 4.13-2 and could result in damage to nearby buildings.

Table 4.13-2 Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate Lv
Reinforced-concrete, steel or timber (no plaster)	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

Notes: RMS velocity in decibels (VdB) re 1 micro-inch/second.

PPV = peak particle velocity; in/sec = inches per second; L_v =velocity level in decibels

Source: Transit Noise and Vibration Impact Assessment, Table 12-3.

- Generate excessive groundborne vibration or groundborne noise that exceeds the following maximum-acceptable vibration criteria for annoyance or interference with vibration-sensitive activities (FTA 2006):
  - 65 vibration decibels (VdB), referenced to 1 micro-inch per second and based on the RMS velocity amplitude, for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities).
  - 80 VdB for residential uses and buildings where people normally sleep.
  - 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2006).

- Generate new or additional transit uses or heavy vehicle (e.g., semi-truck or bus) trips on uneven roadways located within proximity to sensitive uses that has the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria of the transit use thresholds shown in Table 4.13-3 below.

Table 4.13-3 Screening Distances for Vibration Assessment

Vibration-Generating Transit Use	Critical Distance for Land Use Categories* (Distance in feet from Right-of-Way or Property Line)		
	Category 1	Category 2	Category 3
Steel-Wheeled/Steel-Rail Vehicle Transit Uses			
Conventional Commuter Railroad	600	200	120
Rail Rapid Transit	600	200	120
Light Rail Transit	450	150	100
Intermediate Capacity Transit	200	100	50
Rubber-Tire Heavy Vehicle Uses			
Rubber-Tire Heavy Vehicle Uses (if not previously screened out)	100	50	—

Notes:

* Category 1: Buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance. Examples include: concert halls; vibration-sensitive research and manufacturing; hospitals with vibration-sensitive equipment; and, university research operations.

Category 2: All residential land uses and any buildings where people sleep, such as hotels and hospitals.

Category 3: Schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.

For the purposes of screening procedures, concert halls and television studios should be evaluated as Category 1, and theaters and auditoriums should be evaluated as Category 2.

Source: Transit Noise and Vibration Impact Assessment, Table 9.2

ISSUES NOT DISCUSSED FURTHER

The Area Plans for communities of El Rio/Del Norte, Lake Sherwood/Hidden Valley, North Ventura Avenue, Oak Park, Ojai Valley, Piru, and Thousand Oaks were reviewed for policies and implementation programs specific to these Area Plans that would potentially have impacts on the environment with respect to noise. The 2040 General Plan would not result in substantive changes to Area Plan policies and implementation programs related to noise or vibration generated by construction, traffic, or airport and rail operations. The Area Plan policies and implementation programs related to these issues are consistent with the policies and implementation programs of the 2040 General Plan, which are addressed in the following discussions. Therefore, the environmental effects of the Area Plan policies and implementation programs are not addressed separately in this section.

2040 GENERAL PLAN POLICIES AND IMPLEMENTATION PROGRAMS

Policies and implementation programs in the 2040 General Plan related to noise and, specifically, the thresholds of significance identified above, include the following:

Hazards and Safety Element

- **Policy HAZ-9.1: Limiting Unwanted Noise.** The County shall prohibit discretionary development which would be impacted by noise or generate project-related noise which cannot be reduced to meet the standards prescribed in Policy Haz-9.2. This policy does not apply to noise generated during the construction phase of a project. (SO) *[Source: Existing GPP Policy 2.16.2.2]*
- **Policy HAZ-9.2: Noise Compatibility Standards.** The County shall review discretionary development for noise compatibility with surrounding uses. The County shall determine noise based on the following standards*:*

    1. New noise sensitive uses proposed to be located near highways, truck routes, heavy industrial activities and other relatively continuous noise sources shall incorporate noise control measures so that indoor noise levels in habitable rooms do not exceed Community Noise Equivalent Level (CNEL) 45 and outdoor noise levels do not exceed CNEL 60 or L_{eq}1H of 65 dB(A) during any hour.
    2. New noise sensitive uses proposed to be located near railroads shall incorporate noise control measures so that indoor noise levels in habitable rooms do not exceed Community Noise Equivalent Level (CNEL) 45 and outdoor noise levels do not exceed L10 of 60 dB(A)
    3. New noise sensitive uses proposed to be located near airports:
        a. Shall be prohibited if they are in a Community Noise Equivalent Level (CNEL) 65 or greater, noise contour; or
        b. Shall be permitted in the Community Noise Equivalent Level (CNEL) 60 to CNEL 65 noise contour area only if means will be taken to ensure interior noise levels of CNEL 45 or less.
    4. New noise generators, proposed to be located near any noise sensitive use, shall incorporate noise control measures so that ongoing outdoor noise levels received by the noise sensitive receptor, measured at the exterior wall of the building, does not exceed any of the following standards:

a. L_{eq}1H of 55dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.;

b. L_{eq}1H of 50dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.; and

c. L_{eq}1H of 45dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.

5. Construction noise shall be evaluated and, if necessary, mitigated in accordance with the Construction Noise Threshold Criteria and Control Measures (Advanced Engineering Acoustics 2005).

(RDR) *[Source: Existing GPP Policy 2.16.2.1, modified]*

- **Policy HAZ-9.3: Development Along Travel Routes.** The County shall evaluate discretionary development for noise generated by project-related traffic along the travel route to the nearest intersection which allows for movement of traffic in multiple directions. In all cases, the evaluation of project-related roadway noise shall be evaluated along the travel route(s) within 1,600 feet of the project site. (RDR) *[Source: New Policy]*
- **Policy HAZ-9.4: Acoustical Analysis Required.** The County shall require an acoustical analysis by a qualified acoustical engineer for discretionary development involving noise exposure or noise generation in excess of the established standards. The analysis shall provide documentation of existing and projected noise levels at on-site and off-site receptors and shall recommend noise control measures for mitigating adverse impacts. (RDR) *[Source: Existing GPP Policy 2.16.2.1, modified]*
- **Policy HAZ-9.5 Site and Building Design.** The County shall require discretionary development and County-initiated projects to comply with adopted noise standards through proper site and building design features, such as building location and orientation, setbacks, natural barriers and vegetation, and building construction. The County shall only consider sound walls if noise mitigation measures have been evaluated or integrated into the project and found infeasible. (RDR) [*Source: New Policy]*
- **Policy HAZ-9.6: Airport Noise Compatibility.** The County shall use the aircraft noise analysis prepared for local airports or the noise contours from the current Point Mugu Air Installations Compatible Use Zones (AICUZ) study, as most appropriate for a project location, as an accurate mapping of the long-term noise impact of the airport's aviation activity. The County shall restrict new discretionary residential land uses to areas outside of the 60 decibel Community Noise Equivalence Level (dB CNEL) aircraft noise contour unless interior noise levels can be mitigated to meet a maximum 45 dB CNEL. (RDR) *[Source: New Policy, NBVC JLUS]*
- **Policy HAZ-9.7: Noise Control Priorities.** The priorities for noise control for discretionary development shall be as follows:

1. Reduction of noise emissions at the source.
2. Attenuation of sound transmission along its path, using barriers, landform modification, dense plantings, building orientation and placement, and the like.
3. Rejection of noise at the reception point using noise control building construction, hearing protection or other means.

(RDR) *[Source: Existing GPP Policy 2.16.2.3, modified]*

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.13-1: Expose Sensitive Receptors to Construction Noise Levels That Exceed Applicable Standards

The land use diagram of the 2040 General Plan would accommodate future development of relatively higher intensity residential, commercial, mixed use, and industrial land uses within the Existing Community area designation (boundary) and the Urban area designation (boundary). These are areas with existing residential, commercial, and/or industrial uses developed with urban building intensities generally located adjacent to the boundaries of incorporated cities or along highway corridors such as SR 33, SR 118, SR 126, and Highway 101. The residential, commercial, mixed use, and industrial land use designations of the 2040 General Plan would apply to approximately 1.2 percent of land in the unincorporated county. Potential uses within these designations include small- and large-lot detached single-family homes, one- to three-story attached single-family dwellings and lower density multifamily developments, mixes of commercial, office, residential, civic, and/or recreational uses, one- to two-story structures for retail and commercial services, and industrial employment-generating uses, such as production, assembly, warehousing, and distribution.

The Rural land use designation would allow for low-density and low-intensity land uses such as residential estates and other rural uses which are maintained in conjunction with agricultural and horticultural uses or in conjunction with the keeping of farm animals for recreational purposes, such as greenhouses, principal and accessory structures related to agriculture, and also oil and gas wells, and would apply to approximately 0.9 percent of land in the unincorporated county.

Approximately 97.1 percent of the unincorporated county would remain designated as either Open Space (approximately 88 percent) or Agriculture (approximately 9 percent) under the 2040 General Plan. The Open Space land use designation would allow low intensity development with a minimum parcel size of 10 acres and 1 dwelling unit per parcel. Other uses could include composting operations, greenhouses, correctional institutions, fire stations, and oil and gas wells. The Agriculture land use designation would allow for development of one dwelling unit per parcel and a minimum parcel size of 40 acres. Other uses could include greenhouses, principal and accessory structures related to agriculture, and composting operations. Proposed policies of the 2040 General Plan addressing flaring and trucking associated with new discretionary oil and gas wells could result in the construction and operation of new pipelines for the conveyance of oil, gas, or produced water.

Future development under the 2040 General Plan would generate temporary noise level increases on and adjacent to individual construction sites. Because there are no specific plans or time scales for individual, future development projects, it is not possible to determine exact noise levels, locations, or time period for construction. Although the 2040 General Plan would preserve 88 percent of the county as open space, it would allow for development in close proximity to existing communities. Demolition and construction activity may occur near existing residences and noise-sensitive receptors and could extend over the course of eight or more weeks. In order to provide the most conservative assessment, this analysis evaluates whether future demolition and construction activity would potentially exceed the County's daytime construction noise standard of 55 dBA L_{eq} from 7:00 a.m. to 7:00 p.m. on weekdays or 9:00 a.m. to 7:00 p.m. on weekends and holidays. This analysis also evaluates the potential for construction noise to exceed the County's evening and nighttime noise standards of 50 dBA L_{eq} during the hours of 7:00 p.m. to 10:00 p.m.; 45 dBA L_{eq} during the hours of 10:00 p.m. to 7:00 p.m. on weekdays or 10:00 p.m. to 9:00 a.m. on weekends and holidays; or an increase of 3 dBA L_{eq} above ambient noise levels.

Construction noise can be characterized based on the type of activity and associated equipment needed and, in this analysis, is evaluated by considering noise levels associated with site preparation/foundation work, utility improvements (e.g., trenching, pipe/transmission line installation), roadway improvements (e.g., grading, paving), and vertical construction (e.g., residential, commercial, or other structures), with and without pile driving. Reference noise levels for typical construction equipment required for these activities are shown below in Table 4.13-4.

Table 4.13-4 Reference Noise Levels from Typical Construction Equipment

Equipment Type	Typical Noise Level (L_{max} dBA) @ 50 feet
Backhoe	80
Concrete Mixer	85
Compactor	80
Crane/Lift	85
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84
Front End Loader	80
Generator	70
Grader	85
Impact Pile Driver	95
Paver	89
Roller	85
Pickup Trucks	55

Note: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

L_{max} = maximum instantaneous noise level

Source: FTA 2006

Assuming simultaneously operating equipment and typical reference noise levels for construction equipment, representative noise levels for the various types of construction activity are shown below in Table 4.13-5. Based on reference noise levels for typical construction equipment and activities, building construction noise without pile driving could range from approximately 86 dBA L_{eq} to 91 dBA maximum instantaneous noise level (L_{max}) at 50 feet from the source and with pile driving could range from approximately 91 dBA L_{eq} to 97 dBA L_{max} at 50 feet from the source. Refer to Appendix E for modeling inputs and results.

Table 4.13-5 Noise Levels from Construction Activities

Construction Activity	Noise Level (L_{eq} dBA) @ 50 feet	Noise Level (L_{max} dBA) @ 50 feet
Site Preparation/Foundation Work	87.5	91.5
Building Construction	86.2	90.9
Building Construction with Pile Driving	90.5	96.6
Roadway Construction/Improvements	87.2	91.1
Utility Installation/Improvements	88.1	92.1

Note: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

L_{eq} = equivalent noise level; L_{max} = maximum instantaneous noise level

Source: FTA 2006

Noise levels from point sources such as construction sites typically attenuate at a rate of about 6 dBA per doubling of distance from the source. Therefore, considering building construction noise of 96.6 dBA L_{max}, areas within 6,033 feet of a construction site with heavy-duty equipment may be exposed to noise levels exceeding the County's daytime noise standard of 55 dBA L_{max}. In addition, some construction work, such as utility installation and roadway improvements may occur during nighttime hours to reduce traffic impacts and could expose existing or future sensitive receptors to noise levels that may disrupt sleep and exceed the applicable evening and nighttime exterior construction noise threshold of 50 dBA L_{max} and 45 dBA $L_{max,}$ within 6,356 feet and 11,303 feet, respectively.

2040 General Plan Policy HAZ-9.4 requires that an acoustical analysis be conducted by a qualified acoustical engineer for discretionary development that would recommend noise control measures for mitigation of adverse impacts. In addition, Policy HAZ-9.2 requires construction noise be evaluated and, if necessary, mitigated in accordance with the Construction Noise Threshold Criteria and Control Plan (Advanced Engineering Acoustics, November 2005). Future development under the 2040 General Plan would be required to comply with the following construction equipment noise control measures identified in the *Construction Noise Threshold Criteria and Control Plan*, which would substantially lessen construction noise levels. In addition, the permitting agency/department would review the construction noise reduction measures and confirm compliance with the County's noise threshold criteria.

1. Minimize the use of impact devices, such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal.
2. Pneumatic impact tools and equipment used at the construction site shall have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.
3. Provide impact noise producing equipment, i.e. jackhammers and pavement breaker(s), with noise attenuating shields, shrouds or portable barriers or enclosures, to reduce operating noise.
4. Line or cover hoppers, conveyor transfer points, storage bins, and chutes with sound-deadening material (e.g., apply wood or rubber liners to metal bin impact surfaces).
5. Provide upgraded mufflers, acoustical lining or acoustical paneling for other noisy equipment, including internal combustion engines.
6. Avoid blasting and impact-type pile driving.
7. Use alternative procedures of construction and select a combination of techniques that generate the least overall noise and vibration. Such alternative procedures could include the following:
    a. Use electric welders powered by remote generators.
    b. Mix concrete at non-sensitive off-site locations, instead of on-site.
    c. Erect prefabricated structures instead of constructing buildings on-site.
8. Use construction equipment manufactured or modified to reduce noise and vibration emissions, such as:
    a. Electric instead of diesel-powered equipment.

   b. Hydraulic tools instead of pneumatic tools.
   c. Electric saws instead of air- or gasoline-driven saws.
9. Turn off idling equipment when not in use for periods longer than 30 minutes.
10. Operate equipment so as to minimize banging, clattering, buzzing, and other annoying types of noises, especially near residential and other noise sensitive areas during the evening and nighttime hours.
11. To the extent feasible, configure the construction site in a manner that keeps noisier equipment and activities as far as possible from noise sensitive locations and nearby buildings.
12. All back-up alarms should be disarmed at 8:00 p.m. and not reactivated until 7:00 a.m. on weekdays and 9:00 a.m. on weekends and local holidays. Signal persons and strobe lights must be used during periods when the back-up alarms are disarmed.
13. Maximize physical separation, as far as practicable, between noise generators and noise receptors. Separation includes following measures:
   a. Provide enclosures for stationary items of equipment and noise barriers around particularly noisy areas at the project site.
   b. Locate stationary equipment to minimize noise and vibration impacts on community.
14. Minimize noise-intrusive impacts during most noise sensitive hours.
   a. Plan noisier operations during times of highest ambient noise levels.
   b. Keep noise levels relatively uniform; avoid excessive and impulse noises.
   c. Turn off idling equipment.
   d. Phase in start-up and shut-down of project site equipment.
15. Select truck routes for material delivery and spoils disposal so that noise from heavy-duty trucks will have a minimal impact on noise sensitive receptors. Proposed truck haul routes are to be submitted to the County Transportation Division for approval.
   a. Conduct truck loading, unloading, and hauling operations so noise and vibration are kept to a minimum.
   b. Route construction equipment and vehicles carrying soil, concrete or other materials over streets and routes that will cause the least disturbance to residents in the vicinity of construction sites and haul roads.
   c. Do not operate haul trucks on streets within 250 feet of school buildings during school hours or hospitals and nursing homes at any time, without a variance.
   d. Submit haul routes and staging areas to the County Transportation Division for approval, at least 30 days before the required usage date.

If the above listed construction equipment noise control measures are not sufficient to reduce noise levels, the project would be required to install construction noise curtains, blankets, and barriers or receptor noise control barriers detailed in the *Construction Noise Threshold Criteria and Control Plan* to ensure noise levels are reduced below applicable County noise standards.

The 2040 General Plan policies and measures listed in the *Construction Noise Threshold Criteria and Control Plan* would require individual development projects to include numerous noise-reducing techniques and minimize noise at receiving land uses. The effectiveness of these measures would be ensured through Policies HAZ-9.4 and HAZ-9.2, which require the implementation of mitigation developed through project-level acoustical analyses. Because noise levels generated from construction under the 2040 General Plan would be temporary and reduction measures would be implemented to ensure construction noise would not exceed applicable standards at nearby receptors, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.13-2: Expose New Sensitive Land Uses to Traffic Noise

Future development under the 2040 General Plan would include new residential and other noise-sensitive uses that could be exposed to long-term noise exceeding the County's standard for noise generated from roadways of 45 dBA CNEL for indoor noise levels and 60 dBA CNEL for outdoor noise levels. Potential sources of noise exposure include: (1) traffic on U.S. Highway 101, State Route (SR) 23, SR 118, and SR 126, county-wide expressways arterial roadways, and collector and local roadways; and (2) transportation sources related to operations of commercial, industrial, and agricultural sites that are adjacent to or near noise-sensitive uses.

The 2040 General Plan anticipates population and housing would increase by approximately 4 percent above 2015 conditions and would include land use designations to allow growth within or near existing communities, as shown on Figure 3-2b. As such, development would likely occur adjacent to existing roadways and freeways could potentially expose new noise-sensitive receptors to traffic noise. Traffic noise modeling was conducted for the 2040 plan horizon and included projected noise levels at 50 feet from roadway segments as well as distances to the 60, 65, and 70 dBA CNEL contours. Table 4.13-6 includes the calculated future noise levels at 50 feet from County roadways, as well as distances to the 60, 65, and 70 dBA CNEL noise contour for all modeled roadways. As shown in Table 4.13-7, under Impact 4.13-3, with only minor exceptions, traffic noise is expected to increase only slightly along major roadways in the county over the life of the 2040 General Plan.

The 2040 General Plan includes policies and implementation programs that address the placement of new noise-sensitive receptors near transportation noise sources. Specifically, Policy HAZ-9.1 prohibits development which would be impacted by noise or generate project-related noise which cannot be reduced to meet the standards prescribed in Policy HAZ-9.2. Policy HAZ-9.2 requires that new noise sensitive uses proposed to be located near highways, truck routes, heavy industrial activities and other relatively continuous noise sources shall incorporate noise control measures so that indoor noise levels in habitable rooms do not exceed 45 dBA CNEL and outdoor noise levels do not exceed 60 dBA CNEL or 65 dBA L_{eq} during any hour. In addition, Policy HAZ-9.4 requires an acoustical analysis be performed for discretionary development to determine existing and projected noise levels at on-site and off-site receptors and to recommend noise control measures for mitigating adverse impacts. Policy HAZ-9.5 requires proper site and building design features to comply with adopted noise standards.

Table 4.13-6 Projected 2040 Noise Levels and Contours

Corridor and Segment		Noise (dBA CNEL) at 50 feet from Roadway	Noise Contour Distance in Feet		
			60 dBA	65 dBA	70 dBA
1	Aggen Road north of Los Angeles Avenue (SR 118)	55.0	32	10	3
2	Balcom Canyon Road south of South Mountain Road	58.2	65	21	7
3	Balcom Canyon Road north of Los Angeles Avenue (SR 118)	57.1	51	16	5
4	Bardsdale Avenue east of Sespe Street	56.7	47	15	5
5	Beardsley Road north of Central Avenue	62.8	190	60	19
6	Box Canyon Road south of Santa Susana Pass Road	59.3	86	27	9
7	Bradley Road north of Los Angeles Avenue (SR 118)	62.2	166	52	17
8	Briggs Road south of Telegraph Road	62.9	197	62	20
9	Briggs Road north of Telegraph Road	58.8	75	24	8
10	Bristol Road west of Montgomery Avenue	65.9	387	123	39
11	Broadway Road west of Grimes Canyon Road (SR 23)	61.0	125	40	13
12	Burnham Road south of Baldwin Road (SR 150)	57.7	59	19	6
13	Burnham Road east of Santa Ana Road	57.3	54	17	5
14	Calle Yucca north of Camino Manzanas	54.2	26	8	3
15	Camino Dos Rios west of Lynn Road	57.2	52	17	5
16	Canada Larga Road east of Ventura Avenue	54.4	28	9	3
17	Casitas Vista Road west of Ojai Freeway (SR 33)	58.6	72	23	7
18	Center School Road south of Los Angeles Avenue (SR 118)	56.2	42	13	4
19	Center Street (Piru) west of Telegraph Road (SR 126)	54.7	29	9	3
20	Central Avenue west of Ventura Freeway (US 101)	67.9	619	196	62
21	Central Avenue west of Santa Clara Avenue	67.9	620	196	62
22	Central Avenue east of Vineyard Avenue (SR 232)	64.5	284	90	28
23	Channel Islands Boulevard west of Rice Avenue	68.4	693	219	69
24	Creek Road east of Country Club Drive	55.8	38	12	4
25	Creek Road east of Ventura Avenue (SR 33)	62.6	181	57	18
26	Donlon Road north of La Cumbre Road	52.0	16	5	2
27	Doris Avenue east of Victoria Avenue	64.9	311	98	31
28	El Roblar Drive west of Maricopa Highway (SR 33)	57.7	58	18	6
29	Etting Road east of Dodge Road	62.0	159	50	16
30	Fairview Road east of Maricopa Highway (SR 33)	51.4	14	4	1
31	Fairway Drive north of Valley Vista Drive	57.3	53	17	5
32	West Fifth Street east of North Harbor Boulevard	59.6	92	29	9
33	Foothill Road west of Peck Road	61.1	128	40	13
34	Foothill Road west of Briggs Road	56.2	42	13	4
35	Foothill Road east of North Wells Road	62.1	161	51	16
36	Foothill Road east of Saticoy Avenue	63.3	211	67	21
37	Gonzales Road east of North Harbor Boulevard	63.3	213	67	21
38	Grimes Canyon Road north of Los Angeles Avenue (SR 118)	61.5	142	45	14
39	Guiberson Road east of Chambersburg Road (SR 23)	57.7	58	18	6
40	Harbor Boulevard north of Gonzales Road	70.6	1,153	365	115
41	Harbor Boulevard south of Gonzales Road	70.3	1,074	340	107
42	Howe Road east of Torrey Road	51.6	14	5	1
43	Hueneme Road east of Las Posas Road	67.1	512	162	51
44	Hueneme Road east of Nauman Road	66.9	495	156	49
45	Hueneme Road east of Wood Road	66.2	417	132	42

	Corridor and Segment	Noise (dBA CNEL) at 50 feet from Roadway	Noise Contour Distance in Feet		
			60 dBA	65 dBA	70 dBA
46	Hueneme Road east of Olds Road	68.7	746	236	75
47	Kanan Road east of Lindero Canyon Road	66.6	460	145	46
48	Kanan Road east of Hollytree Drive/Oak Hills Drive	66.6	454	143	45
49	Kanan Road south of Tamarind Street	68.2	667	211	67
50	La Luna Avenue south of Lomita Avenue	56.4	44	14	4
51	Laguna Road east of Pleasant Valley Road	60.4	109	34	11
52	Las Posas Road north of East Fifth Street (SR 34)	67.7	587	186	59
53	Las Posas Road south of East Fifth Street (SR 34)	67.8	601	190	60
54	Las Posas Road south of Hueneme Road	65.6	361	114	36
55	Lewis Road south of Pleasant Valley Road	69.0	788	249	79
56	Lewis Road north of Potrero Road	67.9	617	195	62
57	Lockwood Valley Road west of Kern County Line	56.8	48	15	5
58	Lockwood Valley Road east of Maricopa Highway (SR 33)	49.0	8	3	1
59	Lomita Avenue east of Tico Road	59.1	82	26	8
60	Main Street (Piru) north of Telegraph Road (SR 126)	56.7	46	15	5
61	Moorpark Road north of Santa Rosa Road	70.7	1,168	369	117
62	Old Telegraph Road west of Grand Avenue	59.2	82	26	8
63	Olds Road north of Hueneme Road	61.4	137	43	14
64	Olivas Park Drive west of Victoria Avenue	68.9	769	243	77
65	Pasadena Avenue east of Sespe Street	50.7	12	4	1
66	Patterson Road south of Doris Avenue	52.5	18	6	2
67	Pleasant Valley Road south of East Fifth Street (SR 34)	69.4	861	272	86
68	Pleasant Valley Road west of Las Posas Road	68.2	663	210	66
69	Portero Road east of Lake Sherwood Drive East	62.8	193	61	19
70	Portero Road west of Stafford Road	59.9	97	31	10
71	Portero Road west of Hidden Valley Road	52.4	17	6	2
72	Portero Road at Milepost 2.75	58.6	73	23	7
73	Portero Road east of Lewis Road	62.7	188	59	19
74	Rice Avenue south of East Fifth Street (SR 34)	72.9	1,936	612	194
75	Rice Avenue north of Channel Islands Boulevard	71.9	1,559	493	156
76	Rice Avenue north of Hueneme Road	59.8	96	30	10
77	Rice Road south of Lomita Avenue	59.8	96	30	10
78	Rose Avenue south of Los Angeles Avenue (SR 118)	64.2	265	84	26
79	Rose Avenue south of Central Avenue	64.5	279	88	28
80	Rose Avenue north of Collins Street	67.3	540	171	54
81	Santa Ana Boulevard east of Ventura River	58.8	76	24	8
82	Santa Ana Road south of Baldwin Road (SR 150)	54.6	29	9	3
83	Santa Ana Road south of Santa Ana Boulevard	60.7	119	37	12
84	Santa Clara Avenue north of Friedrich Road	69.0	803	254	80
85	Santa Clara Avenue south of Los Angeles Avenue (SR 118)	69.9	983	311	98
86	Santa Rosa Road west of Moorpark Road	70.8	1,203	380	120
87	Santa Rosa Road west of East Las Posas Road	69.0	801	253	80
88	Santa Susana Pass Road east of Katherine Road	58.2	66	21	7
89	Sespe Street north of South Mountain Road	61.6	144	45	14
90	Sespe Street south of Pasadena Avenue	55.7	37	12	4
91	South Mountain Road east of Balcom Canyon Road	55.1	32	10	3

	Corridor and Segment	Noise (dBA CNEL) at 50 feet from Roadway	Noise Contour Distance in Feet		
			60 dBA	65 dBA	70 dBA
92	South Mountain Road south of Santa Clara River	58.4	69	22	7
93	Stockton Road east of Balcom Canyon Road	56.4	43	14	4
94	Sturgis Road west of Pleasant Valley Road	65.4	350	111	35
95	Tapo Canyon Road south of Bennett Road	52.8	19	6	2
96	Telegraph Road west of Briggs Road	65.2	331	105	33
97	Telegraph Road west of Olive Road	64.7	292	92	29
98	Tico Road north of Ventura Avenue (SR 150)	56.6	46	14	5
99	Tierra Rejada Road east of Moorpark Freeway (SR 23)	71.8	1,526	483	153
100	Torrey Road south of Telegraph Road (SR 126)	56.9	49	16	5
101	Valley Vista Drive south of Calley Aurora	59.5	88	28	9
102	Ventura Avenue north of Canada Larga Road	57.5	57	18	6
103	Ventura Avenue north of Shell Road	60.2	105	33	10
104	Victoria Avenue south of Olivas Park Drive	73.8	2,386	755	239
105	Walnut Avenue north of Los Angeles Avenue (SR 118)	53.3	21	7	2
106	Wendy Drive north of Gerald Drive	63.6	229	72	23
107	Wood Road south of Hueneme Road	58.8	75	24	7
108	Wood Road south of East Fifth Street (SR 34)	67.8	601	190	60
109	Wooley Road west of Rice Avenue	68.4	694	219	69
110	Yerba Buena Road north of Pacific Coast Highway (SR 1)	49.4	9	3	1
	Freeways				
111	SR 1 at Calleguas Creek	73.7	2,368	749	237
112	SR 1 at Seacliff Colony, Junction SR 101	66.9	488	154	49
113	SR 1 at Las Cruces, SR 101, Mobil Oil Pier	59.1	81	26	8
114	SR 23 at Grimes Canyon Road	69.9	987	312	99
115	SR 23 at Junction SR 126, Ventura Road	67.7	585	185	59
116	SR 33 at West Junction SR 150, Baldwin Road	66.7	465	147	47
117	SR 33 at Los Padres National Forest Boundary	55.5	35	11	4
118	SR 33 at Sespe Gorge Maintenance Station	51.0	13	4	1
119	SR 33 at Ventura/Santa Barbara County Line	53.9	25	8	2
120	SR 34 at Junction SR 118, Los Angeles Avenue	68.4	692	219	69
121	U.S. Highway 101 at Victoria Avenue	80.9	12,207	3,860	1221
122	U.S. Highway 101 at Ventura/Santa Barbara County Line	79.5	8,815	2,787	881
123	SR 118 at Junction SR 232 (Westbound)	75.8	3,761	1,189	376
124	SR 118 at SR 34, Somis Road (Westbound)	72.5	1,787	565	179
125	SR 118 at Grimes Canyon Road	72.8	1,919	607	192
126	SR 118 at West Junction SR 23, Moorpark Avenue	71.7	1,475	466	147
127	SR 118 at East Junction SR 23, Spring Road	72.5	1,780	563	178
128	SR 150 at Santa Barbara/Ventura County Line	49.1	8	3	1
129	SR 150 at Junction SR 33 South (South)	63.0	197	62	20
130	SR 150 at Santa Paula North City Limit	59.0	80	25	8
131	SR 232 and Junction SR 118	65.8	381	120	38

Notes: SR = State Route; dBA = a-weighted decibels;

Gray shaded cells reflect roadway segments exceeding 60 dBA CNEL at 50 feet from the roadway centerline.

All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow, and does not account for shielding of any type or finite roadway adjustments. All noise levels are reported as A-weighted noise levels.

Source: Modeled by Ascent Environmental in 2019; based on traffic data provided by GHD (2019).

Implementation of these policies and programs would ensure that future development located in areas with noise levels that potentially exceed acceptable standards would be evaluated and that appropriate sound attenuation techniques would be implemented on a case-by-case basis. Depending on the nature of future development and the location and source of noise, sound attenuation techniques may include site design to shield noise-sensitive uses from noise, special building standards to reduce interior noise, or the use of barriers to reduce exterior noise. The specific location, design, orientation, and type of development projects are unknown at this time and site-specific noise levels at new development sites cannot be determined. However, with 2040 General Plan implementation, if noise levels at new noise-sensitive receptors cannot be reduced below the County's standards, such development would be prohibited by Policy HAZ-9.1. Therefore, future development under the 2040 General Plan would not be exposed to noise levels that exceed County noise standards. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.13-3: Expose Existing Sensitive Receptors to Traffic-Noise Increases

Future development under the 2040 General Plan would increase noise levels along area roadways over the life of the plan. Table 4.13-7 compares calculated noise levels along major roadways in the county under existing conditions to those that could occur with traffic levels associated with projected growth within the 2040 planning horizon. To provide a point of comparison for existing and future noise conditions, noise levels were calculated at a distance of 50 feet from the roadway centerline. Noise levels at receptors farther away from roadway noise sources, or in locations with intervening topography, vegetation, or structures, would be lower than shown in the table.

Table 4.13-7 Comparison of Existing and Future Noise Levels Along Road Segments

Corridor and Segment		Noise (dBA CNEL) at 50 feet from Roadway		
		Existing (2019)	Future (2040)	Change
1	Aggen Road north of Los Angeles Avenue (SR 118)	54.7	55.0	0.4
2	Balcom Canyon Road south of South Mountain Road	56.4	58.2	1.7
3	Balcom Canyon Road north of Los Angeles Avenue (SR 118)	56.4	57.1	0.7
4	Bardsdale Avenue east of Sespe Street	56.7	56.7	0.0
5	Beardsley Road north of Central Avenue	61.2	62.8	1.6
6	Box Canyon Road south of Santa Susana Pass Road	58.4	59.3	1.0
7	Bradley Road north of Los Angeles Avenue (SR 118)	62.2	62.2	0.0
8	Briggs Road south of Telegraph Road	62.9	62.9	0.0
9	Briggs Road north of Telegraph Road	58.7	58.8	0.0
10	Bristol Road west of Montgomery Avenue	65.0	65.9	0.9
11	Broadway Road west of Grimes Canyon Road (SR 23)	58.3	61.0	2.7
12	Burnham Road south of Baldwin Road (SR 150)	55.8	57.7	2.0
13	Burnham Road east of Santa Ana Road	54.9	57.3	2.5
14	Calle Yucca north of Camino Manzanas	54.2	54.2	0.0
15	Camino Dos Rios west of Lynn Road	56.8	57.2	0.4
16	Canada Larga Road east of Ventura Avenue	53.0	54.4	1.4
17	Casitas Vista Road west of Ojai Freeway (SR 33)	55.8	58.6	2.8
18	Center School Road south of Los Angeles Avenue (SR 118)	56.0	56.2	0.2
19	Center Street (Piru) west of Telegraph Road (SR 126)	54.2	54.7	0.5
20	Central Avenue west of Ventura Freeway (US 101)	67.0	67.9	0.9

Corridor and Segment		Noise (dBA CNEL) at 50 feet from Roadway		
		Existing (2019)	Future (2040)	Change
21	Central Avenue west of Santa Clara Avenue	66.7	67.9	1.2
22	Central Avenue east of Vineyard Avenue (SR 232)	63.5	64.5	1.0
23	Channel Islands Boulevard west of Rice Avenue	67.6	68.4	0.8
24	Creek Road east of Country Club Drive	53.1	55.8	2.7
25	Creek Road east of Ventura Avenue (SR 33)	59.9	62.6	2.7
26	Donlon Road north of La Cumbre Road	51.1	52.0	0.9
27	Doris Avenue east of Victoria Avenue	63.7	64.9	1.2
28	El Roblar Drive west of Maricopa Highway (SR 33)	57.3	57.7	0.4
29	Etting Road east of Dodge Road	60.5	62.0	1.5
30	Fairview Road east of Maricopa Highway (SR 33)	51.2	51.4	0.2
31	Fairway Drive north of Valley Vista Drive	56.6	57.3	0.7
32	West Fifth Street east of North Harbor Boulevard	59.0	59.6	0.7
33	Foothill Road west of Peck Road	61.1	61.1	0.0
34	Foothill Road west of Briggs Road	56.2	56.2	0.0
35	Foothill Road east of North Wells Road	61.7	62.1	0.3
36	Foothill Road east of Saticoy Avenue	63.2	63.3	0.1
37	Gonzales Road east of North Harbor Boulevard	63.3	63.3	0.0
38	Grimes Canyon Road north of Los Angeles Avenue (SR 118)	61.5	61.5	0.1
39	Guiberson Road east of Chambersburg Road (SR 23)	57.3	57.7	0.4
40	Harbor Boulevard north of Gonzales Road	70.6	70.6	0.0
41	Harbor Boulevard south of Gonzales Road	70.3	70.3	0.0
42	Howe Road east of Torrey Road	50.7	51.6	0.9
43	Hueneme Road east of Las Posas Road	67.1	67.1	0.0
44	Hueneme Road east of Nauman Road	66.6	66.9	0.4
45	Hueneme Road east of Wood Road	66.1	66.2	0.1
46	Hueneme Road east of Olds Road	67.9	68.7	0.8
47	Kanan Road east of Lindero Canyon Road	66.0	66.6	0.6
48	Kanan Road east of Hollytree Drive/Oak Hills Drive	66.0	66.6	0.6
49	Kanan Road south of Tamarind Street	67.7	68.2	0.5
50	La Luna Avenue south of Lomita Avenue	56.4	56.4	0.0
51	Laguna Road east of Pleasant Valley Road	60.0	60.4	0.3
52	Las Posas Road north of East Fifth Street (SR 34)	67.1	67.7	0.6
53	Las Posas Road south of East Fifth Street (SR 34)	67.3	67.8	0.5
54	Las Posas Road south of Hueneme Road	65.6	65.6	0.0
55	Lewis Road south of Pleasant Valley Road	69.0	69.0	0.0
56	Lewis Road north of Potrero Road	67.9	67.9	0.0
57	Lockwood Valley Road west of Kern County Line	56.8	56.8	0.0
58	Lockwood Valley Road east of Maricopa Highway (SR 33)	47.3	49.0	1.7
59	Lomita Avenue east of Tico Road	58.0	59.1	1.1
60	Main Street (Piru) north of Telegraph Road (SR 126)	55.8	56.7	0.9
61	Moorpark Road north of Santa Rosa Road	70.4	70.7	0.3
62	Old Telegraph Road west of Grand Avenue	57.8	59.2	1.4
63	Olds Road north of Hueneme Road	60.0	61.4	1.3
64	Olivas Park Drive west of Victoria Avenue	68.2	68.9	0.7
65	Pasadena Avenue east of Sespe Street	50.7	50.7	0.0
66	Patterson Road south of Doris Avenue	51.9	52.5	0.6
67	Pleasant Valley Road south of East Fifth Street (SR 34)	69.4	69.4	0.0

	Corridor and Segment	Noise (dBA CNEL) at 50 feet from Roadway		
		Existing (2019)	Future (2040)	Change
68	Pleasant Valley Road west of Las Posas Road	57.8	68.2	10.4
69	Portero Road east of Lake Sherwood Drive East	62.6	62.8	0.3
70	Portero Road west of Stafford Road	58.7	59.9	1.2
71	Portero Road west of Hidden Valley Road	50.6	52.4	1.8
72	Portero Road at Milepost 2.75	57.4	58.6	1.2
73	Portero Road east of Lewis Road	62.7	62.7	0.0
74	Rice Avenue south of East Fifth Street (SR 34)	71.7	72.9	1.2
75	Rice Avenue north of Channel Islands Boulevard	70.8	71.9	1.1
76	Rice Avenue north of Hueneme Road	59.8	59.8	0.0
77	Rice Road south of Lomita Avenue	59.0	59.8	0.8
78	Rose Avenue south of Los Angeles Avenue (SR 118)	62.8	64.2	1.4
79	Rose Avenue south of Central Avenue	63.7	64.5	0.8
80	Rose Avenue north of Collins Street	65.9	67.3	1.4
81	Santa Ana Boulevard east of Ventura River	58.5	58.8	0.3
82	Santa Ana Road south of Baldwin Road (SR 150)	53.1	54.6	1.4
83	Santa Ana Road south of Santa Ana Boulevard	57.9	60.9	3.0
84	Santa Clara Avenue north of Friedrich Road	69.0	69.0	0.0
85	Santa Clara Avenue south of Los Angeles Avenue (SR 118)	69.9	69.9	0.0
86	Santa Rosa Road west of Moorpark Road	70.7	70.8	0.1
87	Santa Rosa Road west of East Las Posas Road	69.0	69.0	0.1
88	Santa Susana Pass Road east of Katherine Road	58.2	58.2	0.0
89	Sespe Street north of South Mountain Road	61.6	61.6	0.0
90	Sespe Street south of Pasadena Avenue	55.7	55.7	0.0
91	South Mountain Road east of Balcom Canyon Road	54.9	55.1	0.2
92	South Mountain Road south of Santa Clara River	56.1	58.4	2.3
93	Stockton Road east of Balcom Canyon Road	51.6	56.4	4.7
94	Sturgis Road west of Pleasant Valley Road	63.8	65.4	1.7
95	Tapo Canyon Road south of Bennett Road	52.8	52.8	0.0
96	Telegraph Road west of Briggs Road	64.8	65.2	0.4
97	Telegraph Road west of Olive Road	64.7	64.7	0.0
98	Tico Road north of Ventura Avenue (SR 150)	56.4	56.5	0.0
99	Tierra Rejada Road east of Moorpark Freeway (SR 23)	71.2	71.8	0.6
100	Torrey Road south of Telegraph Road (SR 126)	56.0	56.9	0.9
101	Valley Vista Drive south of Calley Aurora	59.0	59.5	0.4
102	Ventura Avenue north of Canada Larga Road	56.8	57.5	0.7
103	Ventura Avenue north of Shell Road	59.0	60.2	1.2
104	Victoria Avenue south of Olivas Park Drive	73.8	73.8	0.0
105	Walnut Avenue north of Los Angeles Avenue (SR 118)	53.3	53.3	0.0
106	Wendy Drive north of Gerald Drive	63.2	63.6	0.4
107	Wood Road south of Hueneme Road	58.7	58.8	0.0
108	Wood Road south of East Fifth Street (SR 34)	67.3	67.8	0.5
109	Wooley Road west of Rice Avenue	67.4	68.4	1.0
110	Yerba Buena Road north of Pacific Coast Highway (SR 1)	49.4	49.4	0.0
	Freeways			
111	SR 1 at Calleguas Creek	70.7	73.7	3.0
112	SR 1 at Seacliff Colony, Junction SR 101	66.9	66.9	0.0
113	SR 1 at Las Cruces, SR 101, Mobil Oil Pier	59.0	59.1	0.1

Corridor and Segment		Noise (dBA CNEL) at 50 feet from Roadway		
		Existing (2019)	Future (2040)	Change
114	SR 23 at Grimes Canyon Road	68.6	69.9	1.3
115	SR 23 at Junction SR 126, Ventura Road	67.1	67.7	0.6
116	SR 33 at West Junction SR 150, Baldwin Road	66.7	66.7	0.0
117	SR 33 at Los Padres National Forest Boundary	55.1	55.5	0.3
118	SR 33 at Sespe Gorge Maintenance Station	50.0	51.0	1.0
119	SR 33 at Ventura/Santa Barbara County Line	53.3	53.9	0.6
120	SR 34 at Junction SR 118, Los Angeles Avenue	67.7	68.4	0.7
121	U.S. Highway 101 at Victoria Avenue	80.9	80.9	0.0
122	U.S. Highway 101 at Ventura/Santa Barbara County Line	78.9	79.5	0.5
123	SR 118 at Junction SR 232 (Westbound)	74.6	75.8	1.2
124	SR 118 at SR 34, Somis Road (Westbound)	71.8	72.5	0.7
125	SR 118 at Grimes Canyon Road	72.1	72.8	0.7
126	SR 118 at West Junction SR 23, Moorpark Avenue	71.7	71.7	0.0
127	SR 150 at Santa Barbara/Ventura County Line	n/a	49.1	n/a
128	SR 150 at Junction SR 33 South (Southbound)	63.0	63.0	0.0
129	SR 150 at Santa Paula North City Limit	57.7	59.1	1.4
130	SR 232 and Junction SR 118	64.8	65.8	1.0

Notes: SR = State Route; dBA = a-weighted decibels; n/a = not available

Gray shaded cells indicate a change in noise levels of 3 dBA or greater.

Source: Modeled by Ascent Environmental in 2019; based on traffic data provided by GHD (2019).

As Table 4.13-7 indicates, traffic associated with projected growth would increase noise along many of the roadways and result in a slight decrease on some roadways. Traffic volume increases could result in traffic noise levels exceeding the County's standard of 60 dBA CNEL for outdoor noise levels at existing noise-sensitive uses along roadways. Further, the 2040 General Plan could result in a substantial increase of 3 dBA or greater at locations currently exceeding the County's traffic noise standards.

Table 4.13-7 indicates that roadway segments along Pleasant Valley Road, west of Las Posas Road, and along Santa Ana Road, south of Santa Ana Boulevard, would experience an increase of 3 dBA or greater and would exceed 60 dBA CNEL at 50 feet from the roadway centerline. The roadway segment at Stockton Road, east of Balcom Canyon Road, would also experience an increase of 3 dBA or greater, but would not exceed 60 dBA CNEL at 50 feet from the roadway center line. The roadway segments along Broadway Road, west of Grimes Canyon Road, and along Creek Road, east of Ventura Avenue, do not exceed the County standard under existing conditions, but would under the 2040 General Plan. However, the increase in traffic noise would not be substantial (i.e., 3 dBA or greater) at these segments. In addition, SR 1 at Calleguas Creek would also experience an increase of 3 dBA or greater but currently exceeds 60 dBA CNEL at 50 feet from the roadway center line under existing conditions and would continue to exceed the County standard under the 2040 General Plan. In all other cases, traffic noise increases are less than 3 dBA.

Policies HAZ-9.3, HAZ-9.4, and HAZ-9.5 would require noise-generating development to be evaluated and implementation of noise control measures to reduce noise levels to acceptable levels. However, it is uncertain if recommended noise control measures would be sufficient to reduce noise levels generated by future development to acceptable levels for all future types of development in all locations and circumstances and there are no further policies related to traffic noise impacts on existing noise-sensitive uses. Therefore, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure NOI-1: New Policy HAZ-X: Implement Noise Control Measures for Traffic Noise

The County shall include the following new policy in the 2040 General Plan.

> **Policy HAZ-X: Implement Noise Control Measures for Traffic Noise**
>
> The County shall require noise control measures to be implemented along roadways for new discretionary development generating traffic noise if either of the following circumstances would exist:
>
> - The discretionary development would result in traffic noise levels above a County noise compatibility standard stated in Policy HAZ 9.2 in an area where traffic noise levels, under existing conditions, do not exceed the County noise compatibility standard; or,
> - The discretionary development would result in an increase in traffic noise levels of 3 dBA or greater in an area where traffic noise levels under existing conditions exceed a County noise compatibility standard stated in Policy HAZ 9.2.
>
> Noise control measures may include increased vegetation, roadway pavement improvements and maintenance, and site and building design features. If such measures are not sufficient to reduce a new discretionary development's fair share of traffic-generated noise at sensitive receptors, a sound wall barrier may be constructed. All feasible noise reduction measures shall be implemented to ensure the development's fair share of traffic-generated noise is reduced, consistent with Policy HAZ 9.2.

Significance after Mitigation

With implementation of Mitigation Measure NOI-1, the 2040 General Plan would require discretionary development to implement noise reduction measures to reduce project-generated traffic noise. In many cases noise reduction measures would reduce traffic noise levels generated by a discretionary development at existing noise sensitive receptors to less than significant levels. However, there may be cases where noise reduction measures are either infeasible or inadequate for reducing traffic noise to less than significant levels. For example, if a new discretionary development would result in high-traffic or truck volumes on roadways near noise-sensitive receptors and, due to limited space within the County roadway right-of-way, a soundwall cannot be built, then the new discretionary development may result in project-generated traffic noise above the County standard. Therefore, because there may be cases where discretionary development would result in project-generated traffic noise above the County standard and such project-generated noise could not be reduced, and would therefore, result in a substantial noise level increase that would exceed County standards at existing noise-sensitive receptors, this impact would be **significant and unavoidable**.

Impact 4.13-4: Expose Noise-Sensitive Land Uses to Operational Stationary Noise That Exceeds Applicable Standards

As discussed in Section 11.6, "Noise and Vibration," of the Background Report (Appendix B), the primary sources of stationary noise in the county consist of industrial and agricultural operations, and miscellaneous sources such as a shooting range in Holser Canyon and a motocross facility near Piru. Major industrial noise sources include concrete and rock batch plants, sand and gravel mines, and Pepsi Cola and oil supply facilities. The 2040 General Plan would designate industrial land use areas throughout the county.

However, the amount of industrial land use proposed under the 2040 General Plan would be minor, totaling approximately 1,400 acres and less than 1 percent of the total county area. In addition, 2040 General Plan Policy HAZ-9.2 would require new stationary noise generators proposed near any noise sensitive use, to incorporate noise control measures so that ongoing outdoor noise levels received by the noise sensitive receptor would not exceed 55 dBA L_{eq} during daytime hours, 50 dBA L_{eq} during evening hours, 45 dBA L_{eq} during nighttime hours, and would not result in an ambient noise level increase of 3 dBA or greater. In addition, Policy HAZ-9.5 would require development to comply with adopted noise standards through proper site and building design features and Policy HAZ-9.1 would prohibit any discretionary development that would not meet County noise standards. The County's Coastal Zoning Ordinance and the County's Non-Coastal Zoning Ordinance also set noise standards for specific land uses including oil and gas exploration and production and mining and reclamation uses. Development under the 2040 General Plan would be subject to the County's zoning ordinances. Because the 2040 General Plan would not result in a substantial increase in stationary noise-generating uses and would implement policies to ensure noise-sensitive land uses are not exposed to noise levels above County noise standards, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.13-5: Expose Noise-Sensitive Land Uses to Airport Noise That Exceeds the Standards in the Ventura County Airport Comprehensive Land Use Plan

As discussed in Section 11.6, "Noise and Vibration," of the Background Report (see Appendix B), four airports are located in Ventura County; Camarillo Airport, Santa Paula Airport, Oxnard Airport, and the Naval Base Ventura County Point Mugu. The 2040 General Plan land use designations would not propose residential land uses, or any other sensitive land use, within a 60 CNEL aircraft noise contour of the Camarillo Airport, Santa Paula Airport, and Oxnard Airport, as outlined in the ACLUP. An existing residential community is located within the Naval Base Ventura County Point Mugu 60 – 65 dBA CNEL aircraft noise contour. Future residential development under the 2040 General Plan could occur in this existing community. All other land uses proposed within a 60 dBA CNEL aircraft noise contour consist of agricultural, open space, and State or federal facility land uses, which allow for minimal development of noise-sensitive uses (i.e., dwelling units with maximum densities ranging from 1 dwelling unit per 10 acres to 1 dwelling unit per 40 acres). However, 2040 General Plan Policy HAZ-9.6 would prohibit development within 60 CNEL noise contour unless interior noise levels can be mitigated to meet a maximum of 45 dBA CNEL. The 2040 General Plan policies would continue to apply if the ACLUP is updated and noise contours are recalculated. The 2040 General Plan would be consistent with the ALCUP and would not expose any noise-sensitive receptors to aircraft noise that exceeds ACLUP standards. This discussion of potential exposure to aircraft noise is provided for information purposes only and is neither required by CEQA nor subject to its requirements.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.13-6: Expose Sensitive Receptors to Construction Vibration Levels That Exceed Applicable Standards

Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Typical construction activities, such as the use of jackhammers, blasting, other high-power or vibratory tools, compactors, and tracked equipment, may generate substantial vibration (i.e., greater than 0.2 inch per second PPV) in the immediate vicinity, typically within 15 feet of the equipment.

Heavy construction operations such as large bulldozers, blasting, and pile drivers have the potential to generate the highest vibration levels and are the primary concern for structural damage when they occur in close proximity to structures. As shown in Table 4.13-8, the highest impact caused by equipment such as large bulldozers, blasting, and pile drivers can generate vibrations of 0.089, 1.130, and 1.518 inches per second of PPV at a distance of 25 feet, respectively. Regarding disruptive vibration levels, large dozers can result in vibration-noise levels of up to 87 VdB, blasting can result in vibration-noise levels of up to 109 VdB, and pile drivers in levels of up to 112 VdB. In addition, similar to construction noise, vibration levels would be variable depending on the type of construction project and related equipment use. Reference vibration levels for typical impact equipment are shown in Table 4.13-8.

Blasting is generally used to remove large rock outcroppings. Vibration levels generated by blasting activities would vary depending on project conditions, such as soil conditions, construction methods, and equipment used. Based on FTA's recommended procedure for applying a propagation adjustment to reference levels for blasting, vibration levels could exceed the threshold of significance of 0.2 inch per second PPV for structural damage within 80 feet of blasting activities (refer to Appendix E for modeling details).

Table 4.13-8 Construction Equipment Vibration Levels

Equipment		Peak Particle Velocity (PPV) at 25 Feet (Inches per Second)	Root Mean Square at 25 Feet (VdB)
Pile Driver (Impact)	Upper Range	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper Range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	95
Blasting		1.130	109
Clam Shovel Drop (Slurry Wall)		0.202	94
Hydrol Mill (Slurry Wall)	In Soil	0.008	66
	In Rock	0.017	75
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: FTA 2006

Regarding vibration annoyance, 65 VdB is conservatively used in this analysis, as it is unknown where construction activity would take place and what land use types could be affected. Based on FTA's recommended procedure for applying propagation adjustments to reference levels for blasting, vibration levels could exceed the threshold of significance within 730 feet of a sensitive land use (refer to Appendix E for modeling details).

Pile driving is used to provide foundation support for buildings and other structures. Based on FTA's recommended procedure for applying a propagation adjustment to reference levels for pile driving, vibration levels could exceed the threshold of significance of 0.2 inch per second PPV for structural damage within 100 feet of pile driving activities and could exceed the threshold of significance of 65 VdB for vibration annoyance or disturbance within 925 feet of a sensitive land use (refer to Appendix E for modeling details).

Much of the future development under the 2040 General Plan would occur near or within existing communities and would likely not require blasting or pile driving activities. In addition, adherence to the County's *Construction Noise Threshold Criteria and Control Plan*, as required by 2040 General Plan Policy HAZ-9.2, would require project contractors to avoid blasting and impact-type pile driving, to use alternative procedures of construction and select a combination of techniques that would generate the least overall noise and vibration, and to use construction equipment manufactured or modified to reduce noise and vibration emissions.

Compliance with the vibration reduction measures included in the *Construction Noise Threshold Criteria and Control Plan* would help minimize construction vibration; however, development under the 2040 General Plan could still result in vibration impacts if blasting and/or pile driving occur. In addition, 2040 General Plan Policy HAZ-9.1 includes an exemption for noise generated during construction and, therefore, does not prohibit discretionary development that would exceed the County's noise standards, listed in 2040 General Plan Policy HAZ-9.2, during construction. No policies or implementation programs are proposed that specifically address vibration impacts or pile driving and blasting activities. Therefore, it is possible that construction activities involving pile driving or blasting could occur and could result in vibration levels that disrupt nearby receptors and/or potentially damage nearby structures.

Although the *Construction Noise Threshold Criteria and Control Plan* would require individual construction projects to include numerous vibration-reducing techniques and minimize exposure at receiving land uses, at this time the location, intensity, and timing of future construction activities under the 2040 General Plan, as well as relative vibration levels at nearby receptors is unknown. Further no specific policies are in place or proposed that would avoid or minimize potential adverse effects from blasting and/or pile driving activities. Therefore, it cannot be determined if future development under the 2040 General Plan would generate vibration levels that would exceed applicable standards at nearby receptors, and this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure NOI-2: Revised Policy HAZ-9.2: Noise Compatibility Standards

The County shall include the following revised policy in the 2040 General Plan.

> **Policy HAZ-9.2: Noise Compatibility Standards**
>
> The County shall review discretionary development for noise compatibility with surrounding uses. The County shall determine noise based on the following standards*:*

1. New noise sensitive uses proposed to be located near highways, truck routes, heavy industrial activities and other relatively continuous noise sources shall incorporate noise control measures so that indoor noise levels in habitable rooms do not exceed Community Noise Equivalent Level (CNEL) 45 and outdoor noise levels do not exceed CNEL 60 or L_{eq}1H of 65 dB(A) during any hour.
2. New noise sensitive uses proposed to be located near railroads shall incorporate noise control measures so that indoor noise levels in habitable rooms do not exceed Community Noise Equivalent Level (CNEL) 45 and outdoor noise levels do not exceed L10 of 60 dB(A)
3. New noise sensitive uses proposed to be located near airports:
    a. Shall be prohibited if they are in a Community Noise Equivalent Level (CNEL) 65 dB or greater, noise contour; or
    b. Shall be permitted in the Community Noise Equivalent Level (CNEL) 60 dB to CNEL 65 dB noise contour area only if means will be taken to ensure interior noise levels of CNEL 45 dB or less.
4. New noise generators, proposed to be located near any noise sensitive use, shall incorporate noise control measures so that ongoing outdoor noise levels received by the noise sensitive receptor, measured at the exterior wall of the building, does not exceed any of the following standards:
    a. L_{eq}1H of 55dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.;
    b. L_{eq}1H of 50dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.; and
    c. L_{eq}1H of 45dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.
5. Construction noise and vibration shall be evaluated and, if necessary, mitigated in accordance with the Construction Noise Threshold Criteria and Control ~~Measures~~ Plan (Advanced Engineering Acoustics, November 2005).

Mitigation Measure NOI-3: New Implementation Program HAZ-X: Revise the Construction Noise Threshold Criteria and Control Plan

The County shall include the following new implementation program in the 2040 General Plan.

Implementation Program HAZ-X: Revise the Construction Noise Threshold Criteria and Control Plan

The County shall revise the Construction Noise Threshold Criteria and Control Plan to consider all potential vibration-inducing activities and include various measures, setback distances, precautions, monitoring programs, and alternative methods to traditional construction activities with the potential to result in structural damage or excessive groundborne noise. Items that shall be addressed in the plan include, but are not limited to, the following:

- Ground vibration-producing activities, such as pile driving and blasting, shall be limited to the daytime hours between 7:00 a.m. to 7:00 p.m. on weekdays or 9:00 a.m. to 7:00 p.m. on weekends and holidays.

- If pile driving is used, pile holes shall be predrilled to the maximum feasible depth to reduce the number of blows required to seat a pile.
- All construction equipment on construction sites shall be operated as far away from vibration-sensitive sites as reasonably possible.
- Earthmoving, blasting and ground-impacting operations shall be phased so as not to occur simultaneously in areas close to sensitive receptors, to the extent feasible. The total vibration level produced could be significantly less when each vibration source is operated at separate times.
- Minimum setback requirements for different types of ground vibration-producing activities (e.g., pile driving and blasting) for the purpose of preventing damage to nearby structures shall be established. Factors to be considered include the specific nature of the vibration producing activity (e.g., type and duration of pile driving), local soil conditions, and the fragility/resiliency of the nearby structures. Established setback requirements (i.e., 100 feet) can be breached if a project-specific, site specific analysis is conducted by a qualified geotechnical engineer or ground vibration specialist that indicates that no structural damage would occur at nearby buildings or structures.
- Minimum setback requirements for different types of ground vibration producing activities (e.g., pile driving and blasting) for the purpose of preventing negative human response shall be established based on the specific nature of the vibration producing activity (e.g., type and duration of pile driving), local soil conditions, and the type of sensitive receptor. Established setback requirements (i.e., 300 feet) can be breached only if a project-specific, site-specific, technically adequate ground vibration study indicates that the buildings would not be exposed to ground vibration levels in excess of 80 VdB, and ground vibration measurements performed during the construction activity confirm that the buildings are not being exposed to levels in excess of 80 VdB.
- All vibration-inducing activity within the distance parameters described above shall be monitored and documented for ground vibration noise and vibration noise levels at the nearest sensitive land use and associated recorded data submitted to Ventura County so as not to exceed the recommended FTA levels.
- Alternatives to traditional pile driving (e.g., sonic pile driving, jetting, cast-in-place or auger cast piles, nondisplacement piles, pile cushioning, torque or hydraulic piles) shall be considered and implemented where feasible to reduce vibration levels.

Significance after Mitigation

Implementation of Mitigation Measures NOI-2 and NOI-3 would require that pile driving and blasting not occur during sensitive times of the day (i.e., late evening through early morning). Additional measures would require the construction contractor to minimize vibration exposure to nearby receptors by locating equipment far from receptors, phasing operations, and predrilling holes for potential piles. Further, the County would revise the Construction Noise Threshold Criteria and Control Plan to include vibration control measures to further refine appropriate setback distances and identify and implement alternative methods to pile driving and blasting if required.

These vibration control measures would result in compliance with recommended levels to prevent structural damage. However, while these measures would substantially lessen human annoyance resulting from vibration levels, at this programmatic level of analysis it is not possible to conclude that vibration levels in all locations associated with all future development under the 2040 General Plan would be reduced below human annoyance levels; there could be future development that results in vibration levels that cause human annoyance. As a result this impact would be **significant and unavoidable**.

Impact 4.13-7: Expose Noise-Sensitive Land Uses to Railroad Noise and Vibration that Exceeds Applicable Standards

The 2040 General Plan does not propose new rail or transit uses, nor would the 2040 General Plan be expected substantially increase rail or transit demand resulting in the development of new transit uses within the county. As discussed further in Section 4.11, "Land Use and Planning," the 2040 General Plan and the Guidelines for Orderly Growth encourage development within the Existing Community and Urban area designations that and is compatible with the Southern California Association of Governments' Regional Transportation Plan/Sustainable Communities Strategy. Therefore, the moderate population growth anticipated through the planning horizon is not anticipated to generate substantial new demand for railroad and transit service and the 2040 General Plan would not generate an increase in railroad vibration.

However, several railways exist throughout the county, including Amtrak, Metrolink, Fillmore and Western Railway, Union Pacific Railroad, and Ventura County Railroad Company, and the 2040 General Plan would include residential land uses near existing rail lines. As stated in Section 11.6, "Noise and Vibration," of the Background Report (Appendix B), noise from railroads is generated by diesel locomotive engines, warning horns, and gate bells at railroad crossings. Noise-sensitive receptors within 165 feet of freight trains, 164 feet of the Metrolink rail line, and 154 feet of the Amtrak rail line would be exposed to noise levels above the County's standard of 60 dBA CNEL for outdoor noise levels (see Appendix B). The 2040 General Plan designates residential land uses along rail lines throughout the county and could expose noise-sensitive land uses to railroad noise above the County's standard of 60 dBA CNEL. However, 2040 General Plan Policies-HAZ-9.2 and HAZ-9.6 would ensure indoor noise levels in habitable rooms do not exceed 45 dBA CNEL and outdoor noise levels do not exceed 60 dBA L_{10} and would require an acoustical analysis to determine noise levels and provide appropriate reduction measures. As required by 2040 General Plan Policy HAZ-9.1, the County would prohibit discretionary development which would be impacted by noise that cannot be reduced to meet the standards prescribed in Policy HAZ-9.2. Because no new transit or rail uses are anticipated and development would only be constructed within close proximity to rail lines if the County noise standard of 60 dBA CNEL for outdoor noise levels and 45 dBA CNEL for indoor habitable areas would be met, the 2040 General Plan would not expose sensitive land uses to railroad noise or vibration. This discussion of potential exposure to railroad noise and vibration is provided for information purposes only and is neither required by CEQA nor subject to its requirements.

Mitigation Measures

No mitigation is required for this impact.

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