3.13 NOISE

3.13.1 INTRODUCTION

This section presents existing noise levels at and surrounding the project site; summarizes relevant regulations and policies; and, analyzes anticipated noise impacts from the implementation of the Proposed Action and its alternatives. This section also evaluates potential noise impacts from the implementation of the Applicant's proposed compensatory wetlands mitigation plan that includes wetland restoration activities on three off-site mitigation properties.

Sources of information used in this analysis include:

- Amoruso Ranch Specific Plan (ARSP) EIR prepared by the City of Roseville (City of Roseville 2016a);
- City of Roseville General Plan 2035 (City of Roseville 2016b);
- City of Roseville Noise Ordinance; and
- Amoruso Ranch Specific Plan EIR Environmental Noise Assessment, December 2015 (J.C. Brennan & Associates, Inc. 2015).

3.13.2 AFFECTED ENVIRONMENT

3.13.2.1 Characteristics of Environmental Noise

Noise may be defined as unwanted sound, and is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is amplitude of sound waves combined with the reception characteristics of the ear. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). The human ear does not respond uniformly to sounds at all frequencies, being less sensitive to very low and high frequencies than to medium frequencies that correspond with human speech. The A-weighted noise level (or scale) better corresponds to the human ear's subjective perception of sound levels. This A-weighted sound level is called the "noise level" and is measured in units of dB(A). Changes in noise levels of less than 3 dB(A) are not typically noticed by the human ear (U.S. Department of Transportation 2011). Individuals extremely sensitive to changes in noise may notice changes in noise levels from 3 to 5 dB(A). A 5 dB(A) increase is readily noticeable, while the human ear perceives a 7 dB(A) increase in sound level to be a doubling of sound.

Noise sources are classified into two types: (1) point sources, such as pieces of stationary equipment; and (2) line sources, such as roadways with large numbers of point sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dB(A) for each doubling of distance from the source to the receptor at an acoustically "hard" site, such as paved roads, and 7.5 dB(A) at an acoustically "soft" site, such as grass-covered soil or soft sand (U.S. Department of Transportation 2010). For example, a 60 dB(A) noise level measured at 50 feet from a point source at an acoustically hard site would be 54 dB(A) at 100 feet from the source and 48 dB(A) at 200 feet from the source. Sound generated by a line source typically attenuates at a rate of 3.0 dB(A) and 4.5 dB(A) per doubling of distance from the source to the receptor for a

hard and soft site, respectively (U.S. Department of Transportation 2011). Sound levels can also be attenuated by man-made or natural barriers. Solid walls, berms, or elevation differences typically reduce noise levels by 5 to 10 dB(A) (U.S. Department of Transportation 2011).

The Equivalent Noise Level (L_{eq}), the day-night sound level (L_{dn}), and the Community Noise Equivalent Level (CNEL) average varying noise exposures over time and quantify the results in terms of a single numeric descriptor. L_{eq} is the average A-weighted sound level measured over a given time interval. L_{eq} can be measured over any period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods. L_{dn} is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM. CNEL is the average A-weighted sound level measured over a 24-hour period and is adjusted to account for increased sensitivity of some individuals to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained by adding 5 dB(A) to sound levels occurring during the evening from 7:00 PM to 10:00 PM, and 10 dB to sound levels occurring during the nighttime from 10:00 PM to 7:00 AM. The 5 and 10 dB "penalties" are applied to account for peoples' increased sensitivity during the evening and nighttime hours. The logarithmic effect of these additions is that, for example, a 60 dB(A) 24-hour L_{eq} would result in a CNEL of 66.7 dB(A).

In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum Leq (Lmax) and minimum Leq (Lmin) indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval (City of Roseville 2016a).

3.13.2.2 Existing Noise Conditions in the Project Area

Vehicle Traffic Noise

Motor vehicle traffic is a major contributor to the existing noise environment in the vicinity of the project site, primarily along Sunset Boulevard West, at the northern boundary of the project site. Using the Federal Highway Administration Highway Traffic Noise Prediction Model, J.C. Brennan and Associates analyzed traffic noise levels at sensitive receptor locations near the project site. **Table 3.13-1, Existing Traffic Noise Levels** shows the estimated noise levels along study area roadways, including Sunset Boulevard West.

Table 3.13-1
Existing Traffic Noise Levels

Roadway	Segment	Traffic Noise Level, Ldn (dB)	Distance to Contours (feet)		
			70 dB Ldn	65 dB Ldn	60 dB Ldn
Blue Oaks Blvd.	W. of Fiddyment	52.7	6	14	29
Blue Oaks Blvd.	Fiddyment to Woodcreek Oaks	61.9	27	59	127
Blue Oaks Blvd.	Woodcreek Oaks to Foothills	63.0	38	81	174
Blue Oaks Blvd.	Foothills to Washington	69.4	91	196	423
Pleasant Grove Blvd.	W. of Fiddyment	60.0	16	35	76

Roadway	Segment	Traffic Noise Level, Ldn (dB)	Distance to Contours (feet)		
			70 dB Ldn	65 dB Ldn	60 dB Ldn
Pleasant Grove Blvd.	Fiddyment to Woodcreek Oaks	63.7	29	62	133
Pleasant Grove Blvd.	Woodcreek Oaks to Foothills	63.3	36	77	167
Pleasant Grove Blvd.	Foothills to Washington	66.2	42	90	195
Pleasant Grove Blvd.	Washington to Roseville Pkwy	64.7	45	96	207
Pleasant Grove Blvd.	Roseville Pkwy to SR 65	63.6	47	101	217
Pleasant Grove Road	North of Baseline	55.4	12	25	54
Baseline Road	W. of Fiddyment	60.3	25	54	116
Baseline Road	Fiddyment to Junction	58.4	19	40	86
Baseline Road	Junction to Woodcreek Oaks	60.9	19	40	86
Baseline Road	Woodcreek to Foothills	62.2	23	49	105
Baseline Road	Foothills to Washington	66.9	31	67	144
Junction Blvd.	Baseline to Woodcreek Oaks	59.1	14	30	65
Junction Blvd.	Woodcreek Oaks to Foothills	60.5	15	32	70
Junction Blvd.	Foothills to Washington	61.1	17	36	77
Roseville Pkwy	Washington to Pleasant Grove	59.4	20	42	91
Roseville Pkwy	E. of Pleasant Grove	63.8	43	92	197
Sunset Blvd. West	Pleasant Grove to Amoruso	50.6	16	35	76
Sunset Blvd. West	Amoruso to Westbrook	51.0	18	38	81
Fiddyment Road	N. of Blue Oaks	57.0	14	31	66
Fiddyment Road	Blue Oaks to Pleasant Grove	60.8	22	47	102
Fiddyment Road	Pleasant Grove to Baseline	62.9	30	65	140
Woodcreek Oaks Blvd.	N. of Blue Oaks	57.9	13	29	62
Woodcreek Oaks Blvd.	Blue Oaks to Pleasant Grove	59.2	17	37	79
Woodcreek Oaks Blvd.	Pleasant Grove to Junction	58.4	17	37	79
Woodcreek Oaks Blvd.	Junction to Baseline	57.8	11	23	50
Foothills Blvd.	N. of Blue Oaks	61.8	28	61	132
Foothills Blvd.	Blue Oaks to Pleasant Grove	61.8	21	46	98
Foothills Blvd.	Pleasant Grove to Junction	62.8	33	72	154
Foothills Blvd.	Junction to Baseline	64.5	32	69	150
Foothills Blvd.	S. of Baseline	66.3	37	79	170
Washington Blvd.	Blue Oaks to Roseville Pkwy	60.6	24	51	110
Washington Blvd.	Roseville Pkwy to Pleasant Grove	58.9	20	43	94
Washington Blvd.	Pleasant Grove to Junction	61.9	25	53	114
Washington Blvd.	Junction Baseline	70.0	55	119	257

Source: J.C. Brennan & Associates, 2015

Aircraft Noise

McClellan Airfield is located approximately 8.25 miles south of the project site. The County of Sacramento Department of Economic Development owns and oversees McClellan Airfield. The airfield is available for both daytime and nighttime use. The airfield could experience 70,000 or more flight operations, defined as a take-off or landing, per year. While McClellan is no longer a military facility, military air traffic including helicopters and U.S. Coast Guard cargo planes continue to use the air field. The other types of aircrafts that may use McClellan are small jets and other general aviation planes (City of Roseville 2016a).

Based upon comments received on the Notice of Preparation (NOP) by the City of Roseville, the Sacramento County Department of Airports (SCDOA) commented that the project site is located under the flight path of current and planned future operations at McClellan Airfield (MCC) and Sacramento International Airport (SMF), as well as military training jets transitioning between Beale Air Force Base (Beale) and Mather Airport (MHR) (City of Roseville 2016a). Based on their comments, the area is subject to aircraft overflights by large aircraft at altitudes less than 3,000 feet (ft) above mean sea level (MSL) which may cause annoyance to residential or other sensitive uses (City of Roseville 2016a). Based on the analysis conducted by SCDOA, the proposed project site is likely to experience overflights by propeller and turbo-prop aircraft arriving at MCC approximately six times per day, commercial jet aircraft arriving at SMF approximately three times per day, and military supersonic jet training aircraft transitioning between Beale and MHR approximately two times per day for a total of 11 overflights per day (City of Roseville 2016a).

Non-Transportation Related Noise

Existing non-transportation related noise sources in the immediate project area are not substantial. Agricultural-related activities from adjacent grazing lands produce small amounts of noise periodically, although there is no intensive use of mechanical agricultural equipment. The City of Roseville Energy Park (REP) is located 1.1 miles south of the project boundary, but is also not a primary noise generator at the project site (City of Roseville 2016a).

Based on observations and noise measurements conducted at the project site, the REP is currently generating noise that is audible at the project site. The levels of sound can vary significantly depending on atmospheric conditions and the REP only operates as-needed, sometimes as little as six months out of the year. Operation noise levels were measured at less than 41 dB Leq at the project site, with 40 dB representing the lowest limit of urban ambient sound (Brennan 2015).

Noise-Sensitive Land Uses in the Project Vicinity

Existing noise-sensitive land uses in the immediate project vicinity include an adjacent rural subdivision north of Sunset Boulevard West along Amoruso Way. To characterize existing ambient noise levels in the project vicinity, J.C. Brennan & Associates conducted continuous (24-hour) noise level measurements at two locations on the project site. The noise level measurements were conducted between January 4th and 6th, 2014. Noise monitoring site A was located at the northwest portion of the project site along West Sunset Boulevard, just west of Amoruso Way. Noise monitoring site B was located at the southern boundary of the project site, west of the intersection of proposed "Road A" and Westbrook Boulevard. **Table 3.13-2, Existing**

Ambient Noise Levels, shows a summary of the noise measurement results. Because of their close proximity, noise monitoring site A represents a similar noise level as the sensitive receptors located along the north side of Sunset Boulevard West, off of Amoruso Way.

Table 3.13-2
Existing Ambient Noise Levels

Site	Location	Date	24-hr Ldn*	Daytime (7am to 10pm)			Nighttime (10pm to 7am)		
				Leq*	L50*	Lmax*	Leq*	L50*	Lmax*
Continuous (24-hour) Noise Measurements									
A	Amoruso Ranch Site (North)	1/4/14	60	56	46	76	53	32	72
		1/5/14	58	54	42	75	51	31	71
		1/6/14	60	56	47	74	53	34	70
B	Amoruso Ranch Site (South)	1/4/14	43	43	43	54	33	20	50
		1/5/14	44	44	39	55	37	31	50
		1/6/14	43	43	42	58	35	31	46

Source: J.C. Brennan & Associates 2015
* *Average measured hourly noise levels, dBA.*

3.13.3 SIGNIFICANCE THRESHOLDS AND ANALYSIS METHODOLOGY

3.13.3.1 Significance Thresholds

Council on Environmental Quality (CEQ) guidance requires an evaluation of a proposed action's effect on the human environment. The Corps has determined that the Proposed Action, or an alternative, would result in significant effects related to noise if it would:

- expose persons to or generate noise levels in excess of standards established in the City of Roseville's Municipal Code Noise Ordinance;
- expose persons to or generate excessive ground-borne vibration or ground-borne noise levels;
- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. For purposes of this EIS, a substantial increase is defined as an increase of 3 dB or more, as changes in noise levels of less than 3 dB are generally not perceptible;
- be located in the vicinity of a public airport, public use airport, or private airstrip, that would expose people residing or working in and/or around the project site to excessive noise levels; or
- result in a cumulative unmitigated significant increase in noise levels, beyond the levels that would exist without the project.

Summary of Applicable Noise Standards

The noise standards applicable to the Proposed Action, as well as the alternatives, include the relevant portions of the City of Roseville General Plan and the City of Roseville Noise Ordinance. General Plan Policy

1, Transportation Noise sets forth that "Allow the development of new noise-sensitive land uses (which include, but are not limited to; residential, schools, and hospitals) only in areas exposed to existing or projected levels of noise from transportation noise sources which satisfy the levels specified in Table IX-1 (presented below as **Table 3.13-3**). Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to the levels specified in the table. City of Roseville's Noise Ordinance, Chapter 9.24 of the Municipal Code, establishes procedures and policies for handling noise complaints within the City. The Noise Ordinance establishes limits on noise sources, such as amplified music or sound."

General Plan Policy 6 sets forth that "Fixed Noise Source: Allow the development of new noise-sensitive uses (which include, but are not limited to; residential, school, and hospitals) only where the noise level due to fixed (non-transportation) noise sources satisfies the noise level standards of Table IX-3 (presented below as Table **3.13-4**). Require proposed fixed noise sources adjacent to noise-sensitive uses to be mitigated so as not to exceed the noise level performance standards specified in the table."

Table 3.13-3
City of Roseville Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] (Ldn/CNEL, dB)	Interior Spaces	
		Ldn/CNEL, dB	Leq, dB[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals and Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60[3]	--	40
Office Buildings	65	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Source: City of Roseville, 2035 General Plan, Table IX-1 of the Noise Element

[1] *Outdoor activity areas for residential developments are considered to be the back yard patios or decks of single-family dwelling, and the patios or common areas where people generally congregate for multi-family development. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas and outside lunch facilities. Where the location of outdoor activity areas is unknown, the exterior noise level standard 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 Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels area in compliance with this table.*

Note: Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Planning Department. Commercial and industrial uses have not been listed because such uses are not considered to be particularly sensitive to noise exposure.

Section 9.24.030(g) of the Noise Ordinance exempts noise from private construction (e.g., construction, alteration or repair activities) between the hours of 7:00 AM and 7:00 PM, Monday through Friday, and between the hours of 8:00 AM and 8:00 PM Saturday and Sunday. However, the ordinance requires that all

construction equipment must be fitted with factory installed muffling devices and all construction equipment shall be maintained in good working order.

Table 3.13-4
City of Roseville Performance Standards for Non-Transportation Noise Sources

Noise Level Descriptor	Daytime (7AM to 10 PM)	Nighttime (10 PM to 7 AM)
Hourly Average (Leq)	60[3]	45
Maximum Level (Lmax)	60[3]	45

Source: City of Roseville, 2035 General Plan, Table IX-3 of the Noise Element
Note: Each of the noise levels specified above should be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). No standards have been included for interior noise levels. Standard construction practices should, with exterior noise levels identified, result in acceptable interior noise levels.

Additionally, Section 9.24.030 (D) of the Roseville Municipal Code, exempts the normal operation of schools from noise level thresholds. The policy basis for this exemption is the fact that people are used to temporary noise impacts from schools, which generally occur during weekday work hours and reflect the normal activities of school children.

Section 9.24.130 limits sound for events on public property. Noise sources associated with outside activities on public property (e.g., athletic events, sporting events, fairs and entertainment events) are restricted between the hours of 8:00 AM and 10:30 PM Sunday through Thursday and between the hours of 8:00 AM and 11:00 PM on Fridays and Saturdays, and City recognized holidays. Noise shall not exceed 80 dBA, Lmax at the property line of the site of the event.

Section 9.24.100 of the ordinance establishes sound limits for sensitive receptors, as shown below:

> *It is unlawful for any person, at any location, to create any sound, or to allow the creation of any sound, on property owned, leased, occupied or otherwise controlled by such person, which causes the exterior sound level when measured at the property line of any affected sensitive receptor to exceed the ambient sound level by 3.0 dBA or exceed the sound level standards as set forth in Table 3.12-4, by 3.0 dBA, whichever is greater.*

As shown in **Table 3.13-3**, the maximum allowable noise exposure for transportation noise sources at the outdoor activity area of residential houses is 60 dB Ldn/CNEL; where it is not possible to reduce noise in residential outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures (as required in **Table 3.13-3**), an exterior noise level of up to 75 dB Ldn/CNEL may be allowed in accordance with the General Plan Noise Element, provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance

with **Table 4.6-5**. The maximum allowable traffic noise levels for playgrounds and neighborhood parks is 70 dB Ldn/CNEL.

General Plan noise standards for non-transportation noise sources at new noise sensitive land uses are 50 dB Leq and 70 dB Lmax during day time hours (7 AM to 10 PM) and 45 dB Leq and 65 dB Lmax during nighttime hours (10 PM to 7 AM).

3.13.3.2 Analysis Methodology

Construction noise analysis uses data compiled for various pieces of construction equipment at a representative distance of 50 feet, which is representative of the minimum likely distance from a residential receptor. **Table 3.13-5, Maximum Construction Equipment Noise Levels** presents noise levels produced by commonly used construction equipment at 50 feet from the source.

Table 3.13-5
Maximum Construction Equipment Noise

Type of Equipment	Maximum Level (dB at 50 feet)
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Federal Highway Administration, FHWA-HEP-05-054, January 2006

Noise impacts associated with proposed commercial and park land uses within the project site were analyzed using previously collected data for similar uses.

The Federal Highway Administration Highway (FHWA) Traffic Noise Prediction Model (FHWA RD-77-108) was used to estimate existing and projected noise levels due to traffic. The model is based on the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model predicts hourly Leq values for free-flowing traffic conditions. To predict traffic noise levels in terms of Ldn, it is necessary to adjust the input volume to account for the day/night distribution of traffic. Inputs to the FHWA model included average daily traffic volumes and truck usage, and vehicle speeds on the local area roadways. The predicted increases in traffic noise levels on the local roadway

network for baseline, and future with project conditions, are presented in terms of Ldn at a standard distance of 100 feet from the centerline of the roadway.

Traffic noise levels were predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. The FHWA model is not capable of running noise barrier calculations on a City-wide basis. Therefore, a conservative adjustment of -5 dB was assumed where noise barriers are located adjacent to the majority of sensitive receptors or where activity areas are located behind residences, as the most basic sound wall that is 6 feet in height generally achieves a noise reduction of 5 to 6 dB. In some locations, sensitive receptors may not receive full shielding from noise barriers, or may be located at distances that vary from the assumed calculation distance. However, the traffic noise analysis is representative of the majority of sensitive receptors located closest to the study roadway segments analyzed in this Draft EIS.

Aviation noise is discussed and evaluated through a combination of short-term and continuous site noise measurements of aircraft operations and review of adopted airport land use compatibility policies and noise contours. The potential for sleep disturbance is discussed and evaluated based upon the results of single event noise measurements conducted in the project site.

3.13.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

Impact NOISE-1 Construction Noise

No Action Alt. Construction activities on the project site would generate noise levels that would affect existing residential receptors north and west of the project boundary. Because construction would occur in phases, some on-site residential development built during the early phases of construction, would also be exposed to noise generated during the construction of later phases of development.

Noise levels typical of construction equipment, as indicated in **Table 3.13-6, Typical Construction Equipment Noise**, range from 76 to 90 dB at a distance of 50 feet from the noise source (City of Roseville 2016a). These noise levels would be experienced by existing receptors during the widening of Sunset Boulevard West along the northern boundary. With regard to construction on the project site under the No Action alternative, construction activities would typically occur at distances of approximately 200 feet, or greater, from the nearest off-site noise-sensitive receptors located north and west of the project boundary. At 200 feet, construction related noise levels are expected to range between approximately 64-78 dB Lmax; however, a majority of project construction would occur at distances greater than 200 feet, where construction noise levels would be substantially less.

Well drilling for the proposed on-site Aquifer Storage and Recovery (ASR) well, which requires around-the-clock drilling, could result in significant effects to nearby residential receptors on the project site during evening and night time hours. No pile driving or other unusual construction practices, besides well drilling, are proposed. Construction activities

would be temporary in nature and, with the exception of well drilling, are anticipated to occur during normal daytime working hours (City of Roseville 2016a). Noise would also be generated during the construction phase by increased truck traffic on area roadways, particularly trucks transporting heavy materials and equipment to and from construction sites.

The Roseville Noise Ordinance (Section 9.24.030) restricts construction activities to the hours of 7:00 AM to 7:00 PM, Monday through Friday, and 8:00 AM to 8:00 PM, Saturday and Sunday, and requires appropriate sound muffling devices be installed on construction equipment. These municipal code requirements ensure that construction noise is limited to the daytime hours, and that equipment noise is minimized. Compliance with the City's Noise Ordinance would minimize potential significant effects.

Table 3.13-6
Typical Construction Equipment Noise

Type of Equipment	Predicted Noise Levels, Lmax dBA				Distances to Noise Contours (Feet)	
	Noise Level at 50′	Noise Level at 100′	Noise Level at 200′	Noise Level at 400′	70 dB Lmax Contour	65 dB Lmax Contour
Auger Drill Rig	84	78	72	66	250	446
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

1. Setback distances are measured in feet from the centerlines of the roadways to the center of residential backyards.
2. The modeled noise barriers assume that Placer Parkway may be elevated by 15 feet relative to the project site. The noise barrier design should be reviewed when detailed grading plans are available for the Proposed Project and the Placer Parkway Project.
3. Assumes that outdoor activity areas will be shielded by an intervening building(s). This is a preferred site design measure to reduce exterior noise and is preferred over the use of sound walls. --Meets the City of Roseville's exterior noise criterion without mitigation.
4. Source: Fehr & Peers, Final Traffic Study for the Amoruso Ranch Specific Plan, February 2016.
Source: J.C. Brennan & Associates, 2015

However, noise from the construction of the ASR well, as well as its operation and maintenance, would result in potentially **significant direct** effects on existing residential receptors because the activities would occur during hours outside of the normal construction hours allowed by the Noise Ordinance.

Mitigation Measure NOISE-1 would minimize the potentially significant direct effect by

requiring equipment warm-up areas, water tanks, and equipment storage areas to be located in an area as far away from existing residences as feasible. The measure also requires well drilling to occur prior to constructing adjacent residential development or as a "first order of business." If construction timing for the well occurs after residential development, and if well construction is located within 1,000 feet of an occupied residence, then measures to reduce noise will include hanging flexible sound control curtains around the drilling apparatus and the drill rig whenever feasible.

Mitigation Measure NOISE-1 is the same as Mitigation Measure 4.6-1 in the ARSP EIR and is highly likely to be imposed on the No Action alternative and enforced by the City to reduce this effect. However, because construction-related noise associated with the ASR well would occur outside of hours considered acceptable under the City's Noise Ordinance, this mitigation measure would not reduce the effect. **No indirect** effects on sensitive receptors from construction related noise were identified under the No Action alternative.

As no wetland mitigation would be necessary under the No Action alternative, no construction noise would occur at the three wetland mitigation sites. **No direct** or **indirect** effects related to construction noise were identified.

Proposed Action

The Proposed Action would construct a large-scale, mixed-use development on the project site with a project boundary similar to the No Action alternative and construction equipment would be similarly operated on site as well. When construction is underway in the northeastern portion of the site and along Sunset Boulevard West, the distance to sensitive receptors would be comparable to that under the No Action alternative, whereas when construction is underway in the northwestern portion of the site, the distance to sensitive receptors would be much closer than under the No Action alternative. As with the No Action alternative, well drilling would be required. Noise would also be generated during the construction phase by increased truck traffic on area roadways, particularly trucks transporting heavy materials and equipment to and from construction sites. Although project construction would comply with the City's Noise Ordinance, noise from infrastructure projects such as construction and operation of the ASR well would result in potentially **significant direct** effects on existing residential receptors because the activities would occur during hours outside of the normal construction hours allowed by the Noise Ordinance. **No indirect** effects on sensitive receptors from construction related noise were identified under the Proposed Action.

Mitigation Measure NOISE-1, which is the same as Mitigation Measure 4.6-1 in the ARSP EIR, has been imposed on the Proposed Action by the City of Roseville, and would be enforced by the City to minimize this effect. However, because construction-related noise would occur outside of hours considered acceptable under the City's Noise Ordinance, this mitigation measure would not reduce the effect.

The Applicant has put forth a conceptual compensatory wetland mitigation plan that includes wetland restoration activities at three off-site mitigation properties. Since the mitigation plan is currently conceptual in nature, the specifics of grading activities associated with wetland restoration are not available. Nonetheless, as grading and land modification activities would be involved, noise levels at the sites would be elevated for the duration of construction at each site. The nearest sensitive receptors are located immediately adjacent to the eastern boundary of the Mourier East mitigation site and approximately 1,500 feet to the northwest of the Skover mitigation site. Grading and land modification activities on the mitigation sites under the Proposed Action would be temporary and would comply with the County's Noise Ordinance, which restricts construction activities to the hours of 6:00 AM to 8:00 PM, Monday through Friday, and 8:00 AM to 8:00 PM, Saturday and Sunday, and requires appropriate sound muffling devices be installed on construction equipment.. Therefore, **no indirect** effects on sensitive receptors from construction related noise under the Proposed Action were identified. Furthermore, **no direct** effects on sensitive receptors from construction related noise under the Proposed Action alternative were identified.

Alts. 1,2,3 As with the Proposed Action and No Action alternative, Alternatives 1, 2, and 3 would construct large-scale, mixed use developments with similar project boundaries and infrastructures, including Sunset Boulevard West widening, and the construction, operation, and maintenance of an ASR well. The distance of the ASR well to sensitive receptors would be similar to under the No Action alternative; therefore, potentially **significant direct** noise effects on sensitive receptors would occur. **Mitigation Measure NOISE-1** would minimize this effect; however, for the same reasons presented above, this mitigation measure would not reduce the effect.

As with the Proposed Action, as grading and land modification activities would be involved at the mitigation sites, noise levels at the sites would be temporarily elevated for the duration of construction at each site. As discussed above, the nearest sensitive receptors are located immediately adjacent to the eastern boundary of the Mourier East mitigation site and approximately 1,500 feet to the northwest of the Skover mitigation site. As with the Proposed Action, grading and land modification activities on the mitigation site under Alternatives 1, 2, and 3 would be temporary and comply with the County's Noise Ordinance. Therefore, **no indirect** effects on sensitive receptors from construction related noise under Alternatives 1, 2, and 3 were identified. Furthermore, **no direct** effects on sensitive receptors from construction related noise under the under Alternatives 1, 2, and 3 were identified.

Mitigation Measure NOISE-1: Construction Noise Control Measures
(Applicability – No Action, Proposed Action, and Alternatives 1, 2, and 3)

The following mitigation measures shall be implemented to reduce short-term construction-related noise impacts:

- *Ensure construction activities comply with the requirements of the City of Roseville Noise Ordinance with respect to hours of operation.*
- *Locate stationary construction equipment, such as compressors and generators, as far away as possible from sensitive receptors. Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on power construction equipment.*
- *Designate a disturbance coordinator to receive public complaints about construction noise disturbances, and determine the cause of the complaint, and implement any feasible measures to be taken to alleviate the problem. Conspicuously post the coordinator's phone number around the project site and in adjacent public spaces to encourage the public to report disturbances.*
- *Well Drilling Construction Noise:*
  - *To the extent feasible, the on-site ASR well shall be drilled prior to the occupancy of residential units within 500 feet of the well site.*
  - *Noise curtains shall be utilized during drilling of the well if, at the time of well construction, homes are occupied within 1,000 feet of the well.*

Impact NOISE-2 Noise from On-Site Activities

No Action Alt. *Commercial Uses*

Under the No Action alternative, commercial uses are proposed on the northeastern corner of Westbrook Boulevard and Road "D" intersection, as well as to the west of Westbrook Boulevard between Roads "A" and "C." Noise sources associated with commercial uses could include, but are not limited to; commercial loading docks associated with grocery stores, on-site truck circulation, rooftop heating and ventilation equipment, and trash pickup. These sources could generate noise levels that would be perceptible to nearby residences on the project site. Nearby off-site residential uses (Toad Hill Ranches) would not be affected by noise generated by on-site commercial uses under the No Action alternative as the nearest commercial area on the project site is located approximately 2,000 feet from these receptors.

Table 3.13-7, Potential Noise Levels Associated With Commercial Land Uses, below, provides reference noise levels for typical commercial activities. No specific site designs are proposed for commercial uses at this time; therefore, noise levels cannot be estimated with specificity. However, based on noise levels that are typically generated by the activities in commercial centers, indoor and outdoor noise levels at residences on the project site located more than 376 feet from commercial uses would not be expected to exceed noise standards (City of Roseville 2016a). However, the 50 dB exterior and 45 dB interior noise standards could be exceeded if homes were closer than 376 feet from a commercial development. This represents a potentially **significant indirect** effect.

Mitigation Measure NOISE-2 would minimize this potential significant indirect effect by including measures such as shielding (e.g., berms, masonry walls, landscaping), restriction

of delivery hours, and screening of HVAC equipment, to reduce noise levels at residences within 376 feet of commercial uses. With implementation of these or other effective design measures identified in site-specific acoustical analyses for the commercial developments on the project site, noise levels associated with the operation of commercial uses are expected to meet the acceptable noise level criteria. This mitigation measure also requires that an acoustic analysis be performed to demonstrate that the measures selected for each commercial development within 376 feet of residences would ensure that City noise standards are met. **Mitigation Measure NOISE-2** is the same as Mitigation Measure 4.6-2 in the ARSP EIR, and it is highly likely to be imposed and enforced by the City to reduce this effect. **No direct** effects on sensitive receptors associated with commercial land use, after mitigation, were identified under the No Action alternative.

Table 3.13-7
Potential Noise Levels Associated With Commercial Land Uses

Use	Leq[1] at 100 Feet	Noise Sources	Distance To Noise Contours, Feet							
			No Wall		6′ Wall		7′ Wall		8′ Wall	
			50 dB	45 dB	50 dB	45 dB	50 dB	45 dB	50 dB	45 dB
Auto Repair, tire shop	57	Typical service center activities	231	411	130	231	116	206	103	184
Loading Docks	64	Truck deliveries, loading/unloading	473	842	266	473	237	422	211	376
Fast Food Drive Through	45	Car idling, drive through speaker	53	95	30	53	27	48	24	42
Car Wash	63	Car idling, blowers, mechanical equipment.	447	794	251	447	224	398	200	355
Truck Circulation	54	Heavy truck deliveries, approximately 5 per hour.	156	278	88	156	78	139	70	124
Busy Parking Lot	54	Typical busy retail type parking lot, vehicle movements, door slamming, people conversing, etc.	158	281	89	158	79	141	71	126
Vendor Deliveries	53	Typical bread, food, dairy, UPS, FexEx type deliveries, etc.	133	237	75	133	67	119	60	106

Source: J.C. Brennan & Associates, 2015
1 - Maximum noise levels for these noise sources are generally 10-15 dB higher than the average (L_{eq}) values. Because the City's maximum (L_{max}) noise level standards are 20 dB higher than the L_{eq} standards, compliance with the L_{eq} standard will also result in compliance with the L_{max} standard. Therefore, typical L_{max} noise levels are not shown in this table.

Schools

The No Action alternative would include one elementary school near the center of the project site, west of Westbrook Boulevard. The school would be located adjacent to residential areas. The noise sources associated with school sites are generally associated with outdoor sports and play areas. Other noise sources could include heating and ventilation equipment, parking lot noise, and bells that indicate the start or end of class periods. Noise sources from outdoor school sports areas generally include crowd and

player noise, and public address systems. On average, groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq}, with maximum noise levels ranging from 70 to 75 dB L_{max} from the source or effective noise center of playing fields (City of Roseville 2016a). Based on this average, noise levels are predicted to 50 dB Leq at 158 feet from the center of park or playground areas. Section 9.24.030 (D) of the Roseville Municipal Code, exempts the normal operation of schools from noise level thresholds. The policy basis for this exemption is the fact that people in urban areas are used to temporary noise effects from schools, which generally occur during weekday work hours and reflect typical activities of schoolchildren (City of Roseville 2016). Therefore, **no direct** or **indirect** effects on sensitive receptors from school related noise under the No Action alternative were identified.

Parks

All of the proposed parks are located adjacent to or within single-family residential areas, which means that noise from park usage may affect sensitive receptors. However, the City has multiple policies and standards which ensure that parks and residential areas are sited and designed to avoid conflicts. The park siting criteria in Table VI-5 of the General Plan Parks and Recreation Element requires buffers between active use areas of parks and residential areas. Furthermore, both the City's Community Design Guidelines and the Proposed Project Design Guidelines direct that homes be oriented to face parks and open space, rather than face away from parks and open space. The City's exterior noise standards are applied at the typical outdoor activity area for the receptor, which for single-family homes is the backyard. Thus, the area where the exterior noise standard applies will typically be shielded behind the home. As a result of existing City policies and standards regarding the appropriate siting and design of parks and single-family homes, **no indirect** effects on sensitive receptors from park related noise under the No Action alternative were identified.

As no wetland mitigation would be necessary under the No Action alternative, no operational noise would occur at the three wetland mitigation sites. No direct or indirect effects related to noise from onsite activities were identified.

Proposed Action

Commercial Uses

Similar to the No Action alternative, no specific site designs have been proposed for commercial uses at this time; therefore, noise levels cannot be estimated with specificity at this time. According to the land use plan for the Proposed Action, commercial uses would be located adjacent to residential land uses on the project site. Nearby off-site residential uses (Toad Hill Ranches) would not be affected by noise generated by on-site commercial uses as the nearest commercial area on the project site under the Proposed Action is located approximately 2,000 feet from these receptors. Due to the proximity of commercial uses, noise levels are expected to exceed City standards for residential uses on the project

site. This represents a **significant indirect** effect based on the significance criteria listed above and as discussed under the No Action alternative.

Mitigation Measure NOISE-2 would minimize this potentially significant effect**.** As noted above, this mitigation measure is the same as Mitigation Measure 4.6-2 in the ARSP EIR and was imposed on the Proposed Action by the City of Roseville and will be enforced by the City to reduce this effect.

Schools

The noise levels at the nearest sensitive receptors generated by school activities under the Proposed Action would be similar to those described above for the No Action alternative because the residential uses would be at similar distances from the proposed elementary school. Noise from normal school operations under the Proposed Action would be exempt from the City of Roseville noise level thresholds. Based on the significance criteria listed above, and as discussed under the No Action alternative, **no direct** or **indirect** noise effects from school-related activities under the Proposed Action were identified.

Parks

As noted above for the No Action alternative, the City has multiple policies and standards which ensure that parks and residential areas are sited and designed to avoid conflicts. The park siting criteria within Table VI-5 of the General Plan Parks and Recreation Element requires buffers between active use areas of parks and residential areas. Furthermore, both the City's Community Design Guidelines and the Design Guidelines listed in Chapter 4 of the ARSP direct that homes be oriented to face parks and open space, rather than face away from parks and open space. The City's exterior noise standards are applied at the typical outdoor activity area for the receptor, which for single-family homes is the backyard. Thus, the area where the exterior noise standard applies will typically be shielded behind the home. As a result of existing City policies and standards regarding the appropriate siting and design of parks and single-family homes, **no indirect** effects on sensitive receptors from park related noise under the Proposed Action were identified.

Following the completion of construction, there would be no source of operational noise associated with the three wetland mitigation sites. No direct or indirect effects related to noise from onsite activities were identified.

Alts. 1,2,3

Commercial Uses

Similar to the No Action alternative, no specific site designs have been proposed for commercial uses under Alternatives 1, 2, and 3, therefore, noise levels cannot be estimated with specificity at this time. However, according to the land use plans for these alternatives, commercial uses would be located adjacent to residential land uses on the project site. Nearby off-site residential uses (Toad Hill Ranches) would not be affected by noise generated by on-site commercial uses as the nearest commercial area on the project

site under these alternatives is located approximately 2,000 feet from these receptors. Due to the proximity of commercial uses, noise levels are expected to exceed City standards for residential uses on the project site. This represents a potential **significant indirect** effect based on the significance criteria listed above.

As discussed under the No Action alternative and Proposed Action, **Mitigation Measure NOISE-2** would minimize this potentially significant effect**.** As noted above, this mitigation measure is the same as Mitigation Measure 4.6-2 in the ARSP EIR and is highly likely to be imposed on Alternatives 1 through 3 and enforced by the City of Roseville to reduce this effect. **No direct** effects on sensitive receptors associated with commercial land use, after mitigation, were identified under Alternatives 1, 2, or 3.

Schools

The noise at the nearest sensitive receptors generated by school activities under Alternatives 1, 2, and 3 would be similar to that described above for the Proposed Action because the residential uses would be at similar distances from the proposed elementary school. Noise from normal school operations would be exempt from the City of Roseville noise level thresholds. Based on the significance criteria listed above, and as discussed under the No Action alternative and Proposed Action, **no direct** or **indirect** noise effects from school-related activities under Alternatives 1, 2, and 3 were identified.

Parks

As noted above for the No Action alternative, the City has multiple policies and standards which ensure that parks and residential areas are sited and designed to avoid conflicts. As a result of the City's existing policies and standards regarding the appropriate siting and design of parks and single-family homes, **no indirect** effects on sensitive receptors from park related noise under Alternatives 1, 2, or 3 were identified.

Following the completion of construction, there would be no source of operational noise associated with the three wetland mitigation sites. **No direct** or **indirect** effects related to noise from onsite activities were identified.

Mitigation Measure NOISE-2: On-site Operations Noise Control Measures *(Applicability – No Action, Proposed Action, and Alternatives 1, 2, and 3)*

For all commercial uses within 500 feet of residential uses, the developer shall implement the following or equally effective measures:

- *Where commercial uses adjoin common residential property lines, the following mitigation measures shall be included in the design of the commercial use:*
  - *6-7 foot tall masonry walls shall be constructed to provide adequate isolation of noise generating activities.*
  - *HVAC equipment shall be located either at ground level, or when located on roof-tops, the building facades shall include parapets for shielding.*

- *Where commercial uses adjoin common residential property lines, and loading docks or truck circulation routes face the residential areas, the following mitigation measures shall be included in the design of the commercial use:*
  - *Loading docks and truck delivery areas shall be a minimum distance of 376 feet from residential property lines;*
  - *Property line barriers shall be 8 feet in height. Circulation routes for trucks shall be located a minimum of 80 feet from residential property lines;*
  - *Loading dock and truck deliveries shall be limited to daytime hours;*
  - *All heating, cooling, and ventilation equipment shall be located within mechanical rooms where possible;*
  - *All heating, cooling, and ventilation equipment shall be shielded from view with solid barriers;*
  - *Emergency generators shall comply with the local noise criteria at the nearest noise-sensitive receivers; and*
  - *In cases where loading docks or truck delivery circulation routes are located less than 376 feet from residential property lines or if nighttime deliveries are required, an acoustical evaluation shall be submitted to the City to verify compliance with the City of Roseville Noise Level Performance Standards. Uses that do not comply with the City of Roseville Noise Level Performance Standards shall not be permitted.*
- *Prior to City approval of conditionally permitted uses; which include more substantial exterior noise sources such as car washes, automotive repair, and outdoor recreation, a noise study shall be prepared by an acoustical engineer that identifies the necessary measures required to achieve compliance with the City of Roseville Noise Level Performance Standards at the nearest sensitive receptors. The City shall require that the measures identified in the noise study are implemented as a condition of approval of conditional use permits.*

Impact NOISE-3 Increase in Traffic Noise at Buildout (Year 2035)

No Action Alt. *On-Site Exterior Noise Levels with Project Traffic*

Traffic noise levels at the proposed residential uses were not estimated for the No Action alternative. However, as shown below in **Table 3.13-8, Traffic Noise Levels at Proposed Residential Uses**, under the Proposed Action, traffic noise levels along the planned Placer Parkway are projected to exceed the City's General Plan noise standard of 60 dB L_{dn} with the traffic added by the Proposed Action (City of Roseville 2016a). Based on its reduced development footprint; the No Action alternative would likely generate fewer vehicle trips than the Proposed Action; and in some cases, sensitive receptors would be set back farther along project roadways, but the exterior noise standard of 60 dB L_{dn} for residential areas is still expected to be exceeded, and the residents are likely to be exposed to excessive exterior noise levels. However, no sensitive receptors are predicted to be exposed to exterior noise levels exceeding the City's 75 dB L_{dn} conditionally acceptable noise standard. Thus, **no direct** or **indirect** effects on on-site sensitive receptors associated with elevated exterior noise levels due to traffic were identified.

On-Site Interior Noise Levels with Project Traffic

According to **Table 3.13-8**, interior noise levels of units constructed under the No Action alternative could exceed the City's 45 dB L_{dn} interior noise level standard. Generally, new construction practices consistent with the California Building Code (CBC) would result in an exterior to interior noise reduction of 25 dB L_{dn}. As discussed above, traffic noise levels at proposed residential uses were not estimated for the No Action Alternative. However, under the Proposed Action, first floor noise exposures at the residential uses along the project roadways are predicted to range between 18 and 43 dB L_{dn}. Noise levels at second and third floor levels are typically two to three dB louder, or 21 to 46 dB L_{dn} (City of Roseville 2016a). As a result, interior noise levels at second or third floor elevations could exceed the City's 45 dB L_{dn} interior noise level standard. Although the No Action alternative would likely generate fewer vehicle trips than the Proposed Action and in some cases sensitive receptors would be set back farther along project site roadways, the interior noise standard of 45 dB L_{dn} is still expected to be exceeded, and residents are likely to be exposed to excessive interior noise levels. Thus, potential **indirect** effects on sensitive receptors associated with elevated interior noise levels would be **significant**. **No direct** effects on sensitive receptors associated with interior noise levels, were identified under the No Action alternative.

Mitigation Measure NOISE-3a would minimize interior noise impacts by requiring a detailed interior noise analysis to be conducted for residential receptors constructed adjacent to the planned Placer Parkway alignment and requiring mechanical ventilation systems be installed in residential uses to allow sensitive receptors to keep doors and windows closed, as desired for acoustical isolation. This measure is the same as Mitigation Measure 4.6-4 in the ARSP EIR and is highly likely to be imposed and enforced by the City of Roseville under the No Action Alternative to address this effect.

Off-Site Exterior Noise Levels with Project Traffic

As stated above, traffic noise levels on study areas roadways were not estimated for the No Action alternative. However, traffic noise levels on study areas roadways were estimated for the Proposed Action as shown in **Table 3.13-9, Traffic Noise Levels On Local Roadways – 2035 Cumulative Conditions** below. As shown in the table, although background traffic would cause noise levels to exceed 60 dB L_{dn} along several off-site roadways, the incremental traffic added by the Proposed Action would cause an imperceptible (less than 3 dB) increase in noise along each roadway over 60 dB with the exception of Sunset Boulevard West between Amoruso Way and Westbrook Boulevard. Although the No Action alternative would add less traffic to all the study roadways, exterior noise levels at the residences near Sunset Boulevard West would still experience a noise increase of more than 3 dB. Further, any contribution to an area where the exterior noise levels exceed the City's noise standards is considered a **significant indirect** effect.

Table 3.13-8
Traffic Noise Levels At Proposed Residential Uses

Roadway	Segment	Approximate Residential Setback (Feet)[1]	ADT[4]	Predicted Traffic Noise Levels, dBA Ldn[2]				
				No Wall	6′ Wall	7′ Wall	8′ Wall	9′ Wall
Westbrook Blvd	South of Road A	350	31,300	59	-	-	-	--
Westbrook Blvd	Road A to Road B	280	31,300	53[3]	-	-	-	--
Westbrook Blvd	Road B to Road C	90	18,500	60[3]	-	-	-	--
Westbrook Blvd	Road C to Road D	90	18,500	60[3]	-	-	-	--
Westbrook Blvd	Road D to Road E	90	16,700	60[3]	-	-	-	--
Westbrook Blvd	North of Road E	90	16,700	60[3]	-	-	-	-
Road -A	West of Westbrook Blvd	65	7,100	58	-	-	-	-
Road -A	East of Westbrook Blvd	65	8,100	59	-	-	-	-
Road -B	East of Westbrook Blvd	65	3,700	55	-	-	-	-
Road -C	West of Westbrook Blvd	65	3,600	55	-	-	-	-
Road -D	West of Westbrook Blvd	65	4,700	56	-	-	-	-
Road -D	East of Westbrook Blvd	65	10,200	60	-	-	-	-
Road -E	West of Westbrook Blvd	220	1,300	43	-	-	-	-
All Internal Roads	Estimated Less Than 3500 ADT	65	3,500	55	-	-	-	-
Placer Pkwy	LDR -West of Westbrook Blvd	150	18,600	68	64	64	63	63
Placer Pkwy	MDR -West of Westbrook Blvd	150	18,600	68	64	64	63	63
Placer Pkwy	HDR -East of Westbrook Blvd	250	33,500	68	63	62	62	61

Source: J.C. Brennan & Associates, 2015
1. Setback distances are measured in feet from the centerlines of the roadways to the center of residential backyards.
2. The modeled noise barriers assume that the planned Placer Parkway may be elevated by 15 feet relative to the project site. The noise barrier design should be reviewed when detailed grading plans are available for the Proposed Project and Placer Parkway Project.
3. Assumes that outdoor activity areas will be shielded by an intervening building(s). This is a preferred site design measure to reduce exterior noise and is preferred over the use of sound walls. --Meets the City of Roseville's exterior noise criterion without mitigation.
4. 2035 Cumulative Plus Project. Based on inputs from Fehr & Peers, Final Traffic Study for the Amoruso Ranch Specific Plan, February 2016

Mitigation Measure NOISE-3b would minimize impacts along Sunset Boulevard West by reducing the traffic noise level increase to 0.4 dB or less through the use of Open Graded Asphalt Concrete (OGAC) along this section of roadway, resulting in a negligible indirect effect along this roadway segment. However, use of OGAC during improvements to Sunset Boulevard West would need to be imposed and enforced by Placer County's Department of Public Works. Therefore, it is not likely that **Mitigation Measure NOISE-3b** would be implemented by the time that the impact would occur. **No direct** effects on off-site sensitive receptors associated with exterior noise levels under the No Action alternative were identified.

Proposed Action

On-Site Exterior Noise Levels with Project Traffic

Traffic from the Proposed Action would have a significant effect on exterior noise levels. The predicted traffic noise levels at residential uses that would be located adjacent to major roadways within the project site are shown in **Table 3.13-8**. The estimated noise levels along the planned Placer Parkway would exceed the exterior noise level standard of 60 dB L_{dn} for residential uses. However, no sensitive receptors are predicted to be exposed to exterior noise levels exceeding the City's 75 dB L_{dn} conditionally acceptable noise standard. For the same reasons discussed above under the No Action alternative, **no indirect** effects were identified.

On-Site Interior Noise Levels with Project Traffic

As noted above, the City of Roseville interior noise level standard is 45 dB L_{dn}, and generally, new construction practices consistent with the CBC would result in an exterior to interior noise reduction of 25 dB L_{dn}. However, second and third floor noise exposures at residential uses along project roadways are expected to range between 21 to 46 db L_{dn}; and thus, could exceed the City's 45 dB L_{dn} interior noise level standard. This would result in a **significant indirect** effect.

Mitigation Measure NOISE-3a would minimize this effect**.** As noted above, this mitigation measure is the same as Mitigation Measure 4.6-4 in the ARSP EIR, and has been imposed on the Proposed Action by the City of Roseville and will be enforced by the City to reduce this effect. **No direct** effects on sensitive receptors associated with elevated interior noise levels were identified under the Proposed Action.

Off-Site Exterior Noise Levels with Project Traffic

Existing traffic noise currently exceeds 60 dB L_{dn} on several roadways in the vicinity of the project site. As shown in **Table 3.13-9**, traffic noise levels in 2035 are projected to exceed the City's General Plan noise standard of 60 dB L_{dn} in the project vicinity, without the traffic added by the Proposed Action. Buildout of the Proposed Action would contribute additional traffic to these roadways, which would further increase the noise levels anywhere from 0.0 to 3.3 dB L_{dn}. Noise increases would be perceptible along Sunset Boulevard West, between Amoruso Way and Westbrook Boulevard. In addition to this, any contribution to noise levels that exceed City noise standards would be a **significant indirect** effect.

Mitigation Measure NOISE-3b would minimize this effect**.** However, use of OGAC during improvements to Sunset Boulevard West would need to be imposed and enforced by Placer County Department of Public Works. Therefore, it is not likely that **Mitigation Measure NOISE-3b** would be implemented by the time that the impact would occur. **No direct** effects on sensitive receptors associated with exterior noise levels under the Proposed Action were identified.

Following the completion of construction, there would be no traffic or traffic related noise associated with the three wetland mitigation sites. No direct or indirect effects related to traffic noise were identified.

Alts. 1,2,3 *On-Site Exterior Noise Levels with Project Traffic*

Traffic from the proposed alternatives would have a significant effect on exterior noise levels. The predicted traffic noise levels at residential uses that would be located adjacent to major roadways within the project site are shown in **Table 3.13-8**. The estimated noise levels along the planned Placer Parkway would exceed the exterior noise level standard of 60 dB L_{dn} for residential uses. However, no sensitive receptors are predicted to be exposed to exterior noise levels exceeding the City's 75 dB L_{dn} conditionally acceptable noise standard. Thus, **no direct** or **indirect** effects on sensitive receptors associated with elevated exterior noise levels due to traffic under Alternatives 1, 2, and 3 were identified.

On-Site Interior Noise Levels with Project Traffic

As noted above, the City of Roseville interior noise level standard is 45 dB L_{dn}, and generally, new construction practices consistent with the CBC would result in an exterior to interior noise reduction of 25 dB L_{dn}. However, second and third floor noise exposures at residential uses along project roadways are expected to range between 21 to 46 db L_{dn}, and thus could exceed the City's 45 dB L_{dn} interior noise level standard. This would result in a **significant indirect** effect.

Mitigation Measure NOISE-3a would minimize this effect**.** As noted above, this mitigation measure is the same as Mitigation Measure 4.6-4 in the ARSP EIR, and is highly likely to be imposed on Alternatives 1 through 3 and enforced by the City of Roseville to reduce this effect. **No direct** effects on sensitive receptors associated with interior noise levels, were identified under Alternatives 1, 2, or 3.

Off-Site Interior and Exterior Noise Levels with Project Traffic

Existing traffic noise currently exceeds 60 dB L_{dn} on several roadways in the vicinity of the project site. As shown in **Table 3.13-9**, traffic noise levels in 2035 are projected to exceed the City's General Plan noise standard of 60 dB L_{dn} in the project vicinity, without the traffic added by the Proposed Action or Alternatives 1, 2, and 3. Buildout of the Proposed Action or Alternatives 1, 2, and 3 would contribute additional traffic to these roadways, which would further increase the noise levels anywhere from 0.0 to 3.3 dB L_{dn}.[1] Noise increases would be perceptible along Sunset Boulevard West between Amoruso Way and Westbrook Boulevard. In addition to this, any contribution to noise levels that exceed City noise standards would be a **significant indirect** effect.

[1] As the amount of development under Alternatives 1, 2, and 3 would be similar to the amount of development planned under the Proposed Action, the increase in noise levels from traffic generated by the alternatives along study area roadways would be similar.

Table 3.13-9
Traffic Noise Levels on Local Roadways – 2035 Cumulative Conditions

Roadway	Segment	Distance (Feet)[1]	Traffic Noise Levels (Ldn dBA)			Significance Criteria	Significant Increase?	Distance to Contours (Feet) 2035 Cumulative[1]			Distance to Contours (Feet) 2035 Cumulative Plus Project[1]		
			2035 Cumulative	2035 Cumulative Plus Project	Change			70 dB Ldn	65 dB Ldn	60 dB Ldn	70 dB Ldn	65 dB Ldn	60 dB Ldn
Blue Oaks Blvd.	West of Fiddyment	90	63.8	63.9	0.1	+3 dB	No	35	75	161	36	77	165
Blue Oaks Blvd.	Fiddyment to Woodcreek	95	65.7	65.8	0.1	+1.5 dB	No	49	106	229	50	108	232
Blue Oaks Blvd.	Woodcreek to Foothills	110	66.0	66.0	0.0	+1.5 dB	No	59	127	274	59	128	276
Blue Oaks Blvd.	Foothills to Washington	100	71.7	71.7	0.1	+1.5 dB	No	129	278	598	130	280	604
Pleasant Grove Blvd.	West of Fiddyment	75	65.0	65.1	0.1	+3 dB	No	35	75	162	35	76	165
Pleasant Grove Blvd.	Fiddyment to Woodcreek	75	66.0	66.0	0.0	+1.5 dB	No	41	88	189	41	88	190
Pleasant Grove Blvd.	Woodcreek to Foothills	100	65.4	65.4	0.0	+1.5 dB	No	49	106	229	49	107	230
Pleasant Grove Blvd.	Foothills to Washington	75	67.4	67.4	0.0	+1.5 dB	No	50	108	232	50	108	233
Pleasant Grove Blvd.	Washington to Roseville Pkwy	100	65.9	65.9	0.0	+1.5 dB	No	53	114	246	53	114	246
Pleasant Grove Blvd.	Roseville Pkwy to SR 65	125	65.1	65.1	0.0	+1.5 dB	No	59	126	272	59	126	272
Pleasant Grove Road	North of Baseline	110	64.0	64.4	0.4	+3 dB	No	44	94	202	46	100	216
Baseline Road	West of Fiddyment	110	65.5	64.2	-1.3	+1.5 dB	No	55	118	255	45	97	209

Roadway	Segment	Distance (Feet)[1]	Traffic Noise Levels (Ldn dBA)			Significance Criteria	Significant Increase?	Distance to Contours (Feet) 2035 Cumulative[1]			Distance to Contours (Feet) 2035 Cumulative Plus Project[1]		
			2035 Cumulative	2035 Cumulative Plus Project	Change			70 dB Ldn	65 dB Ldn	60 dB Ldn	70 dB Ldn	65 dB Ldn	60 dB Ldn
Baseline Road	Fiddyment to Junction	110	63.9	64.0	0.0	+3 dB	No	43	94	202	44	94	202
Baseline Road	Junction to Woodcreek	75	65.3	65.3	0.0	+1.5 dB	No	36	79	169	37	79	170
Baseline Road	Woodcreek to Foothills	75	65.7	65.7	0.0	+1.5 dB	No	39	83	179	39	83	179
Baseline Road	Foothills to Washington	50	69.1	69.1	0.0	+1.5 dB	No	43	93	201	43	93	201
Junction Blvd.	Baseline to Woodcreek	75	62.3	62.4	0.1	+3 dB	No	23	50	107	23	50	109
Junction Blvd.	Woodcreek to Foothills	65	62.7	62.7	0.0	+3 dB	No	21	46	99	21	46	99
Junction Blvd.	Foothills to Washington	65	63.4	63.4	0.0	+3 dB	No	24	51	110	24	51	110
Roseville Pkwy	Washington to Pleasant Grove	100	63.9	64.0	0.1	+3 dB	No	39	85	183	40	86	185
Roseville Pkwy	East of Pleasant Grove	110	66.2	66.2	0.0	+1.5 dB	No	62	133	286	62	133	286
Sunset Blvd. West	Pleasant Grove to Amoruso	150	55.4	57.9	2.5	+3 dB	No	16	34	74	23	50	108
Sunset Blvd. West	Amoruso to Westbrook	150	55.0	58.3	3.3	**+3 dB**	**Yes**	15	32	70	25	54	116
Fiddyment Road	North of Blue Oaks	105	63.2	63.2	0.0	+3 dB	No	37	79	170	37	80	173
Fiddyment Road	Blue Oaks to Pleasant Grove	90	64.1	64.1	0.0	+3 dB	No	36	78	168	36	78	168
Fiddyment Road	Pleasant Grove to Baseline	90	66.2	66.3	0.1	+1.5 dB	No	51	109	235	51	110	237

Roadway	Segment	Distance (Feet)[1]	Traffic Noise Levels (Ldn dBA)			Significance Criteria	Significant Increase?	Distance to Contours (Feet) 2035 Cumulative[1]			Distance to Contours (Feet) 2035 Cumulative Plus Project[1]		
			2035 Cumulative	2035 Cumulative Plus Project	Change			70 dB Ldn	65 dB Ldn	60 dB Ldn	70 dB Ldn	65 dB Ldn	60 dB Ldn
Woodcreek Oaks Blvd.	North of Blue Oaks	85	62.1	62.1	0.0	+3 dB	No	25	55	118	25	55	118
Woodcreek Oaks Blvd.	Blue Oaks to Pleasant Grove	90	61.6	61.6	0.0	+3 dB	No	25	54	116	25	54	115
Woodcreek Oaks Blvd.	Pleasant Grove to Junction	100	60.9	61.0	0.1	+3 dB	No	25	54	115	25	54	116
Woodcreek Oaks Blvd.	Junction to Baseline	70	60.4	60.4	0.0	+3 dB	No	16	34	74	16	34	74
Foothills Blvd.	North of Blue Oaks	100	68.4	68.4	0.1	+1.5 dB	No	78	168	363	79	170	366
Foothills Blvd.	Blue Oaks to Pleasant Grove	75	65.5	65.5	0.0	+1.5 dB	No	38	81	175	38	81	175
Foothills Blvd.	Pleasant Grove to Junction	100	64.7	64.5	-0.2	+3 dB	No	45	96	207	43	93	201
Foothills Blvd.	Junction to Baseline	75	66.2	66.2	0.0	+1.5 dB	No	42	90	195	42	91	195
Foothills Blvd.	South of Baseline	65	68.2	68.2	0.0	+1.5 dB	No	49	106	228	49	106	228
Washington Blvd.	Blue Oaks to Roseville Pkwy	100	64.1	64.1	0.0	+3 dB	No	40	87	188	41	88	189
Washington Blvd.	Roseville Pkwy to Pleasant Grove	110	61.9	61.9	0.0	+3 dB	No	32	68	146	32	68	147
Washington Blvd.	Pleasant Grove to Junction	85	64.3	64.3	0.0	+3 dB	No	35	76	164	35	76	164
Washington Blvd.	Junction Baseline	55	72.1	72.1	0.0	+1.5 dB	No	76	163	351	76	164	352

Source: J.C. Brennan & Associates, 2015

1 -Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

2 -Difference between 2035 Cumulative and 2035 Cumulative Plus Project may not equal change due to rounding.

Mitigation Measure NOISE-3b would minimize this effect. However, use of OGAC during improvements to Sunset Boulevard West would need to be imposed and enforced by Placer County Department of Public Works. Therefore, it is not likely that **Mitigation Measure NOISE-3b** would be implemented by the time that the impact would occur. **No direct** effects on sensitive receptors associated with exterior noise levels under Alternatives 1, 2, and 3 were identified.

Following the completion of construction, there would be no traffic or traffic related noise associated with the three wetland mitigation sites. No direct or indirect effects related to traffic noise were identified.

Mitigation Measure NOISE-3a: **Traffic Noise Attenuation**
(*Applicability – No Action, Proposed Action, and Alternatives 1, 2, and 3*)

- *A detailed analysis of interior noise levels shall be conducted when building plans are available for the residential uses adjacent to the planned Placer Parkway alignment. The analysis shall identify noise control measures that are required to achieve compliance with the City of Roseville 45 dB Ldn interior noise level standard, such as installation of windows and doors with a Sound Transmission Class (STC) rating of 30 to 35, and these noise control measures shall be implemented to achieve compliance with the City's standard. Such analysis shall be conducted by a qualified acoustical consultant recognized by the City of Roseville.*
- *Mechanical ventilation shall be installed in all residential uses adjacent to Placer Parkway to allow residents to keep doors and windows closed, as desired for acoustical isolation.*

Mitigation Measure NOISE-3b: **Traffic Noise Control**
(*Applicability – No Action, Proposed Action, and Alternatives 1, 2, and 3*)

The following measures would reduce impacts to off-site sensitive receptors from traffic noise levels:

- *Sunset Boulevard West shall be repaved from Pleasant Grove Road to Westbrook Boulevard using Open Graded Asphalt Concrete (OGAC).*
- *Pleasant Grove Road shall be repaved north of Baseline Road using OGAC.*

Impact NOISE-4 Aviation Noise

No Action Alt., Proposed Action, Alts. 1,2,3

McClellan Airport's most recent Airport Land Use Compatibility Plan (formerly known as Comprehensive Land Use Plans) was updated in 1987 when McClellan was still operated as an Air Force Base. The manner in which the airport is now operated is significantly different than when it was operated as an Air Force Base and the fleet utilizing the facility is also significantly different. These changes have resulted in a smaller area exposed to high levels of aircraft noise and a smaller area required for aircraft safety zones. The Sacramento Area Council of Governments (SACOG), which acts as the Sacramento County Airport Land Use Commission, is in the process of updating

the Airport Land Use Compatibility Plan (City of Roseville 2016). The 60 dB CNEL noise contour at full capacity is located south of Elverta Road, approximately 6.5 miles south of the project site. Therefore, exterior noise levels from aircraft operations are not predicted to exceed the City of Roseville 60 dB L_{dn}/CNEL exterior noise standard on the project site. Additionally, aircraft operations are not predicted to exceed the City's interior standard of 45 dB L_{dn} /CNEL on the project site. Thus, **no direct** or **indirect** effects on sensitive receptors associated with aviation noise under the Proposed Action, the No Action alternative, and Alternatives 1, 2, and 3 were identified.

There would be no receptors located at the mitigation sites, and no effect related to exposure to aircraft noise. No direct or indirect effects related to aircraft noise.

3.13.5 REFERENCES

City of Roseville. 2016. *Amoruso Ranch Specific Plan*.

U.S. Department of Transportation, Federal Highway Administration. 2011. *Highway Traffic Noise.* December.

J.C. Brennan & Associates, Inc. 2015. *Environmental Noise Assessment for the Amoruso Ranch Specific Plan.*

U.S. Department of Transportation, Federal Highway Administration. 2010. *Highway Traffic Noise: Analysis and Abatement Guidance*.