

APPENDIX E

Noise Report

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McCABE RANCH II – TRACT MAP 994 PROJECT

NOISE STUDY

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MCCABE RANCH II - TRACT MAP 994 PROJECT

IMPERIAL COUNTY, CALIFORNIA

Noise Study

Table of Contents

	Page
Project Location	1
Project Background	1
Project Description	1
Setting	4
Overview of Sound Measurement	4
Project Site Setting	11
Sensitive Receptors	14
Regulatory Setting	15
Vibration Standards	18
Impact Analysis	19
Methodology and Significance Thresholds	19
Temporary Construction Noise	20
Operational Noise Exposure	23
Temporary Construction Vibration	29
Operational Vibration	31
Conclusion	31
References	33

List of Figures

Figure 1	Regional Location Map	2
Figure 2	Project Location	3
Figure 3	Proposed McCabe Ranch II Tract Map 994	5
Figure 4	Proposed Phasing Plan	6
Figure 5	McCabe Ranch II Specific Plan Land Uses	9
Figure 6	Noise Monitoring Locations	13
Figure 7	Noise Barrier Locations	25

List of Tables

Table 1:	Proposed Development Phasing	7
Table 2:	Summary of Proposed Land Uses	8

Table 3: Sound Levels of Typical Noise Sources and Environments	10
Table 4: Noise Monitoring Results.....	14
Table 5: Land Use Compatibility for Community Noise Environments.....	15
Table 6: Construction Noise Standards.....	16
Table 7: Property Line Noise Limits	17
Table 8: Human Reaction and Damage to Buildings for from Continuous or Frequent Intermittent Vibration Levels	18
Table 9: Typical Maximum Construction Equipment Noise Levels	21
Table 10: Modeled Roadway Segment Noise Levels.....	24
Table 11: Estimated Residential Reciever Exterior Noise Levels.....	24
Table 12: Vibration Source Levels for Construction Equipment	30

Appendices

Appendix A - Monitoring Sheet and Modeling Files

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MCCABE RANCH II - TRACT MAP 994 PROJECT IMPERIAL COUNTY, CALIFORNIA NOISE STUDY

This report is an analysis of the potential noise impacts associated with the proposed McCabe Ranch II – Tract Map 994 Project in unincorporated Imperial County, California. This report has been prepared by Birdseye Planning Group (BPG) under contract to Willis Environmental Planning, Inc., to support preparation of the environmental documentation pursuant to the California Environmental Quality Act (CEQA).

PROJECT LOCATION

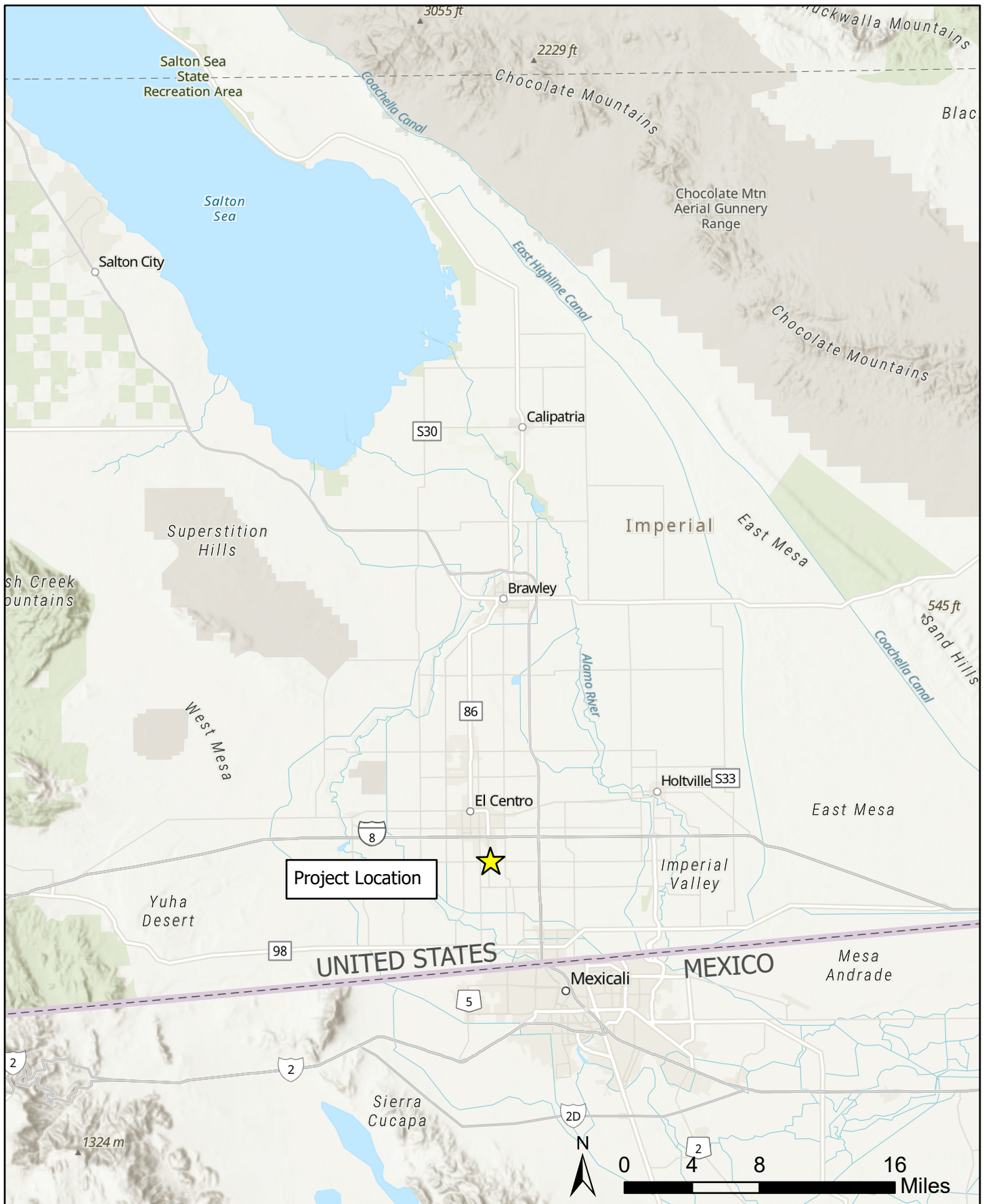
McCabe Ranch II Tract Map 994 Project site is an approximately 351.2-acre portion of the 468-acre McCabe Ranch II Specific Plan Area generally located north of the Community of Heber and south of the City of El Centro, in the County of Imperial, California (see **Figure 1, Regional Location** and **Figure 2, Project Location**). The McCabe Ranch II Tract Map 994 Project site is bounded by McCabe Road on the north, Dogwood Road on the east, State Route 86 (SR-86) on the west, and the western extension of Correll Road on the south. The McCabe Ranch II Tract Map 994 Project site is located in Section 20, Range 14 East, Township 16 South within the U.S. Geological Survey (USGS) Heber, California 7.5-minute topographic.

PROJECT BACKGROUND

The McCabe Ranch II Specific Plan (SP07-004), which established a framework for the development of a variety of land uses within the approximately 468-acre Specific Plan Area (SPA), was approved by the Imperial County Board of Supervisors (Board) in December 2010. Additionally, the Board approved a related Subdivision Tentative Map (TR 00979), which has subsequently expired. As part of the Specific Plan approval, the Board also certified the Final Environmental Impact Report (2010 Final EIR), Mitigation and Monitoring Program (MMRP) and CEQA Findings. The previously certified 2010 Final EIR (2010 Previous FEIR) analyzed the direct, indirect and cumulative changes to the physical environment that would result from development of a maximum of 2,300 single- and multiple-family dwelling units; 19.2-acres of parks; an 8.4-acre business park; 3.2 acres of commercial uses; two (2) elementary school sites for the McCabe Unified and Heber Unified School Districts (28.5 acres combined) and associated public improvements within the McCabe Ranch II SPA.

PROJECT DESCRIPTION

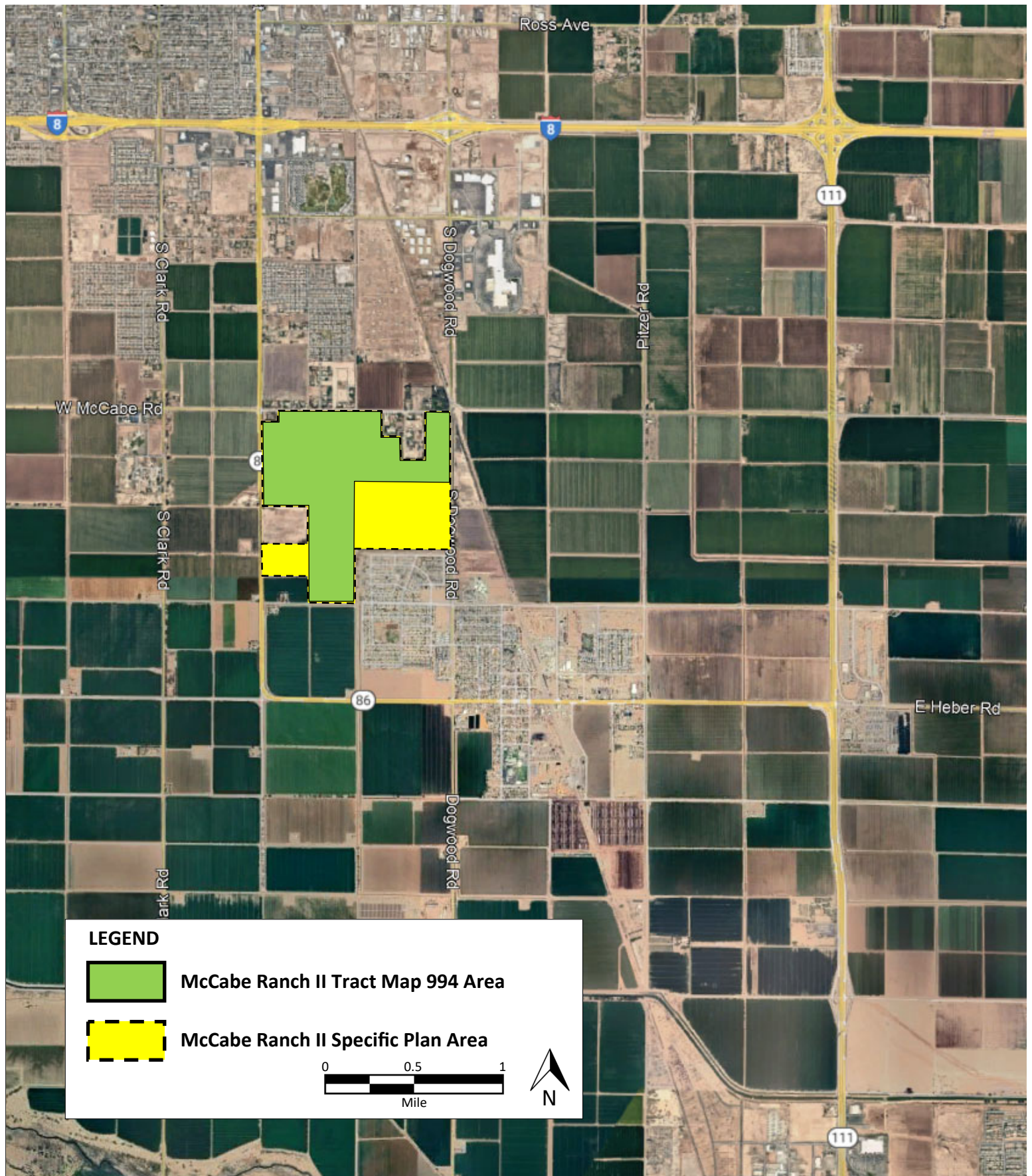
McCabe Ranch Realty, LLC (Applicant) is seeking to process a Subdivision Tentative Map, referred to as the McCabe Ranch II Tract Map 994, for an approximately 351.2-acre portion of the McCabe Ranch I Specific Plan Area to accommodate the phased development of 1,610



Source: Esri, 2024.



Regional Location
McCabe Ranch II Tract Map 994 (TR000994)
Figure 1



Source: McCabe Realty, LLC, 2024



Project Location Map
McCabe Ranch II Tract Map 994 (TR000994)
Figure 2

residential units (single- and multiple-family units), a 13-acre elementary school site for the McCabe Union School District, parks, roadways, associated utilities, drainage and storm water treatment improvements (**Figure 3, Proposed McCabe Ranch II Tract Map 994**). The McCabe Ranch II Tract Map 994 (Project or proposed Project) is comprised of four (4) parcels; County of Imperial Assessor Parcel Numbers (APNs) 054-130-072, 054-130-076, 054-130-077, and 054-130-078. The Imperial Irrigation District's Date Drain No. 3 and Dogwood Canal both traverse the Project area in a north-south direction.

Development of the proposed McCabe Ranch II Tract Map 994 is proposed to occur in phases (Phase 1A, 1B, 2A, 2B, 3A, 3B, 3C) over a 14-year period between 2025 and 2039 as shown on **Figure 4, Proposed Phasing Plan**. A detailed breakdown of development by phase for the proposed McCabe Ranch II Tract Map 994 is presented on **Table 1**. Development within that portion of the McCabe Ranch II Specific Plan area outside of Tract Map 994, may develop prior to, concurrently with, or subsequent to the Tract Map 994 and is denoted as Phase 4. **Table 2** provides a summary of proposed land uses within the entirety of the Specific Plan Area. The development phasing for McCabe Ranch II Tract Map 994, and for the Phase 4 area differs from that identified in the adopted McCabe Ranch II Specific Plan. For this reason, an amendment to the McCabe Ranch II Specific Plan is also proposed. Land uses included in the McCabe Ranch II Specific Plan are shown in **Figure 5**.

Sewer, water, park maintenance, and landscape and lighting maintenance services would be provided by the Heber Public Utility District (HPUD). However, in order for services to be provided, the Specific Plan Area must be annexed into the HPUD. The Project also includes a Development Agreement with the County of Imperial related to the 351.2-ac portion controlled by McCabe Ranch Realty LLC pursuant to Imperial County Land Use Ordinance Title 9, Division 23. The annexation and Development Agreement will also be addressed in the Supplemental EIR.

SETTING

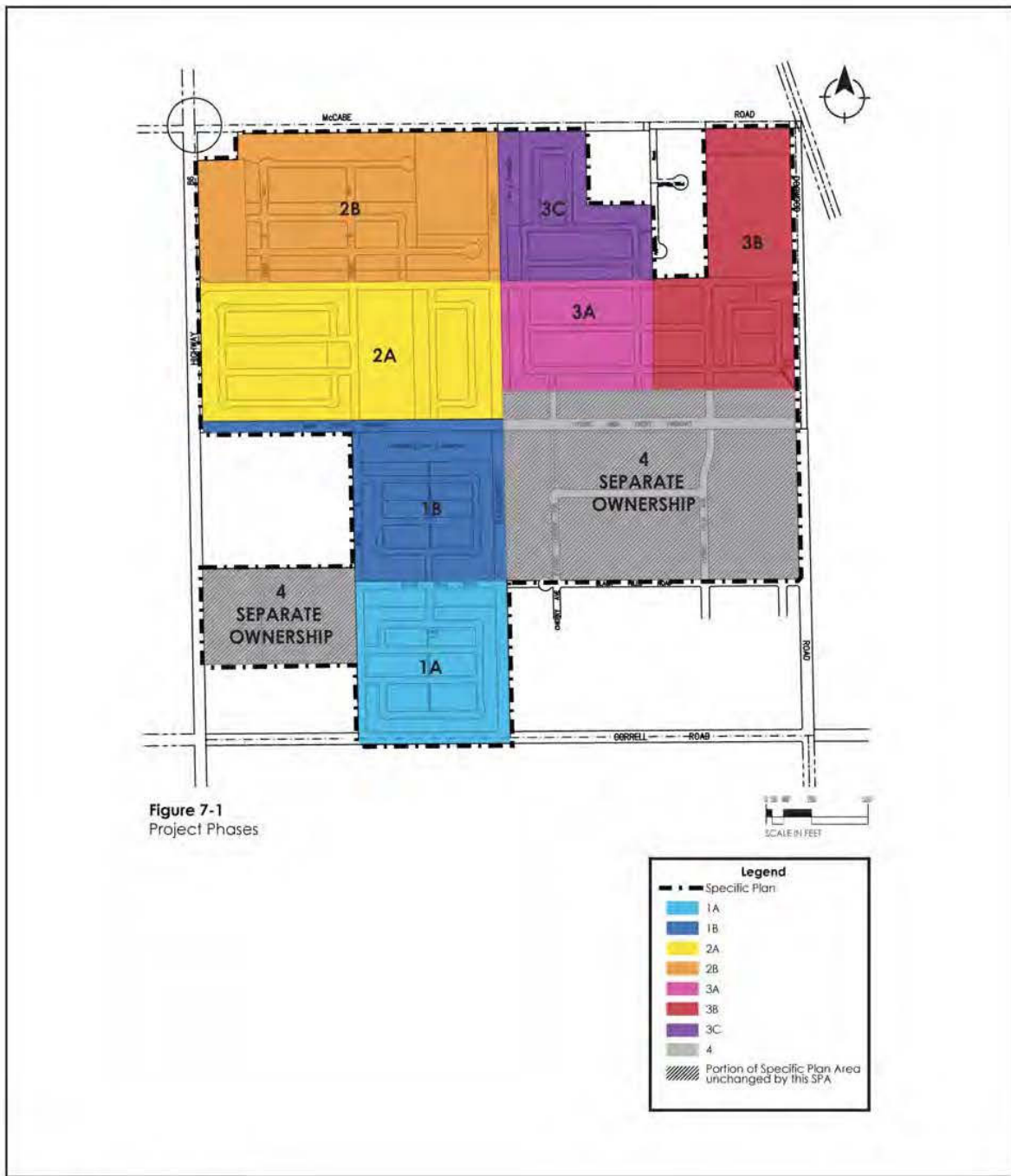
Overview of Sound Measurement

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz). Table 3 shows noise levels associated with common sources.

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no



Proposed Tract Map
McCabe Ranch II Tract Map 994
(TR000994) Figure 3



Source: McCabe Realty, LLC, 2024



Proposed Phasing Plan McCabe
Ranch II Tract Map 994 (TR000994)
Figure 4

TABLE 1. DETAILED DEVELOPMENT BY PHASE, MCCABE RANCH II TRACT MAP 994

PROPOSED LAND USES		PHASE 1 (a)		PHASE 2 (a)		PHASE 3 (a)			TOTALS
		1A	1B	2A	2B	3A	3B	3C	
Development Year		2025 - 2026	2026 -2027	2029 - 2031	2032 - 2033	2034 - 2035	2036 - 2037	2038 - 2039	
RESIDENTIAL DEVELOPMENT									DUs
Single-Family	Density								
Traditional Single Family	5 DU/AC	-0-	-0-	160	134	151	-0-	88	533
Small Lot Single-Family	7 DU/AC	-0-	157	100	-0-	-0-	-0-	-0-	257
Flex Lot Single-Family	9 DU/AC	157	-0-	-0-	-0-	-0-	88	-0-	245
Mini Estate	3 DU/AC	-0-	-0-	-0-	-0-	-0-	-0-	19	19
Estate Lot	2 DU/AC	-0-	-0-	-0-	25	-0-	-0-	-0-	25
Single-Family Subtotal		157	157	260	159	151	88	107	1,079
Multi-Family	Density								
Multi-Family 1 (NW Corner)	20 DU/AC	-0-	-0-	-0-	196	-0-	-0-	-0-	196
Multi-Family 2 (NE Corner)	19 DU/AC	-0-	-0-	-0-	-0-	-0-	335	-0-	335
Multi-Family 3	22 DU/AC	-0-	-0-	-0-	-0-	-0-	-0-	-0-	0
Multi-Family Subtotal		-0-	-0-	196	-0-	151	335	-0-	-0-
TOTAL RESIDENTIAL		157	157	260	355	151	423	107	1,610
NON - RESIDENTIAL DEVELOPMENT									Acres
McCabe Elementary (K-5) School Site		-0-	-0-	12.3	-0-	-0-	-0-	-0-	12.3
Commercial		-0-	-0-	-0-	-0-	-0-	-0-	3.14	-0-
Business Park		-0-	-0-	-0-	-0-	-0-	-0-	-0-	- 0 -
Park/Detention/Greenbelt (inc. IID Easement)		-0-	-0-	-0-	-0-	-0-	-0-	-0-	38.78
Major Collector Roads		-0-	-0-	-0-	-0-	-0-	-0-	-0-	48.3

Notes: (a) Denotes property controlled by McCabe Ranch Realty, LLC. Included in TM 994.

DU = Dwelling Units.

AC = Acres

-0- = No development during this phase

Source: McCabe Ranch Realty, April 2024.

TABLE 2. **SUMMARY OF LAND USES WITHIN
MCCABE RANCH II SPECIFIC PLAN AREA⁽¹⁾**

Land Use	Approx. Gross Acres	% of Total Specific Plan Area	Dwelling Units
Residential Uses			
Traditional Lot – Single Family (5,000 SF+)	121.46	25.9	569
Small Lot – Single Family (4,000 SF – 5,000 SF)	58.02	12.4	406
Flex Lot – Single Family (2,000 SF – 4,000 SF)	65.54	14.0	482
Mini-Estate Lot – Single Family (9,000 SF+)	6.72	1.5	19
Estate Lot – Single Family (20,000 SF+)	19.85	4.2	25
Single Family Subtotal	271.59	58.0	1,501
Multi-Family 1 (Northwest Corner)	9.82	2.0	196
Multi-Family 2 (Northeast Corner)	17.57	3.8	335
Multi-Family 3	12.2	2.6	268
Multi-Family Subtotal	39.59	8.4	799
Residential Uses Subtotal	311.18	66.4	2,300
Non-Residential Uses			
Business Park	9.41	2.0	-0-
Commercial	3.14	0.7	-0-
Elementary School Site (McCabe)	12.3	2.6	-0-
Elementary School Site (Heber)	16.29	3.5	-0-
Non-Residential Uses Subtotal	41.14	8.8	
Open Spaces/Recreation			
Parks / Detention / Greenbelts (incl IID easement)	62.3	13.3	
Open Space/Recreation Subtotal	62.38	13.3	
Major Collector Roads Subtotal	53.62	11.5	
GRAND TOTAL	468.32	100	2,300

Notes: (a) Includes properties controlled by McCabe Ranch Realty, LLC. (McCabe Ranch II TM 994) as well as property under separate ownership (not controlled by McCabe Ranch Realty LLC).

Source: McCabe Realty, LLC, April 2024.



Legend	
	Estate Lots (1/2 acre minimum)
	Mini-Estate Lots (9,000 SF minimum)
	Traditional Lots (5,000 SF minimum)
	Small Lots (4,000 SF minimum)
	Flex Lots (3,200 SF minimum)
	High-density multi-family
	Business Park
	Commercial
	School
	IID Power Station
	Park/ Retention Basin
	Portion of Specific Plan Area unchanged by this SPA

Source: McCabe Realty, LLC, 2024



McCabe Ranch II Specific Plan Land Uses
McCabe Ranch II TM 994 and SPA
Figure 5

Table 3
Sound Levels of Typical Noise Sources and Noise Environments

Noise Source (at Given Distance)	Noise Environment	A-Weighted Sound Level (Decibels)	Human Judgment of Noise Loudness (Relative to Reference Loudness of 70 Decibels*)
Military Jet Takeoff with Afterburner (50 ft)	Carrier Flight Deck	140	128 times as loud
Civil Defense Siren (100 ft)		130	64 times as loud
Commercial Jet Take-off (200 ft)		120	32 times as loud Threshold of Pain
Pile Driver (50 ft)	Rock Music Concert Inside Subway Station (New York)	110	16 times as loud
Ambulance Siren (100 ft) Newspaper Press (5 ft) Gas Lawn Mower (3 ft)		100	8 times as loud Very Loud
Food Blender (3 ft) Propeller Plane Flyover (1,000 ft) Diesel Truck (150 ft)	Boiler Room Printing Press Plant	90	4 times as loud
Garbage Disposal (3 ft)	Noisy Urban Daytime	80	2 times as loud
Passenger Car, 65 mph (25 ft) Living Room Stereo (15 ft) Vacuum Cleaner (10 ft)	Commercial Areas	70	Reference Loudness Moderately Loud
Normal Speech (5 ft) Air Conditioning Unit (100 ft)	Data Processing Center Department Store	60	1/2 as loud
Light Traffic (100 ft)	Large Business Office Quiet Urban Daytime	50	1/4 as loud
Bird Calls (distant)	Quiet Urban Nighttime	40	1/8 as loud Quiet
Soft Whisper (5 ft)	Library and Bedroom at Night Quiet Rural Nighttime	30	1/16 as loud
	Broadcast and Recording Studio	20	1/32 as loud Just Audible
		0	1/64 as loud Threshold of Hearing

Source: Compiled by dBF Associates, Inc., 2016

effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations. Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (i.e., industrial machinery). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed (approximately 30 years old or older) generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units and office buildings construction to California Energy Code standards is generally 30 dBA or more.

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance. The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. Daytime Leq levels are louder than Ldn or CNEL levels; thus, if the Leq meets noise standards, the Ldn and CNEL are also met.

Project Site Setting

The project area is an urbanizing area within unincorporated Imperial County and located south of Interstate 8/State Route 86 interchange and City of El Centro. The site is generally bordered by SR 86 to the west, West McCabe Road to the north, Dogwood Road to the east and Correll Road (if extended) to the south. The most common and primary sources of noise in the project site vicinity are motor vehicles (e.g., automobiles and trucks) operating on SR 86, McCabe Ranch Road and Dogwood Road as well as the operation of agricultural equipment. Aircraft overflights occur but do not noticeably contribute to the ambient noise environment.

Train noise is generated along the Union Pacific Railroad (UPRR) rail line, which is located approximately 200 feet northeast of the McCabe Ranch Road/Dogwood Road intersection and runs northwest to southeast. Current average daily traffic (ADT) volumes along State Route (SR) 86 ranges from 5,370 south of McCabe Road to 13,140 near the Interstate 8 interchange. The ADT along Dogwood Road ranges from approximately 14,040 south of McCabe Road to 16,810 near Interstate 8. Along McCabe Road, the ADT ranges from 5,010 west of Farnsworth Road to 5,560 east of Farnsworth Road. The ADT along Clark Road west of the site is approximately 11,340 between McCabe Road and Interstate 8. The project site is within a noise impact zone, as defined by the Imperial County General Plan, Noise Element, because it meets the following criteria:

- Within 750 feet of the centerline of any railroad; and
- Within 1,320 feet of existing farmland which is in an agricultural zone.

To gather data on the general noise environment at the project site, six weekday morning 15-minute noise measurements were taken on the site on April 11, 2024, using an ANSI Type II integrating sound level meter. The predominant noise source was traffic. The temperature during monitoring ranged from 65 to 76 degrees Fahrenheit with no cloud cover or perceptible wind.

Monitoring Site 1 is located at the southeast corner of McCabe Ranch Road and State Route 86. During monitoring, 74 cars/light trucks, two medium trucks (six tires/two axles) and four heavy truck (all vehicles with three or more axles) passed the site on SR 86. Monitoring Site 2 is located along SR 86 at the proposed main entry parkway. A total of 105 cars/light trucks, one medium truck (six tires/two axles) and seven heavy trucks (all vehicles with three or more axles) passed the site on SR 86. Monitoring Site 3 is located at the western terminus of Correll Road. A total of two cars/light trucks, zero medium trucks (six tires/two axles) and zero heavy trucks (all vehicles with three or more axles) passed the site on Correll Road. Monitoring Site 4 is located at the intersection of Black Hill Street and Dogwood Road. During monitoring, a total of 138 cars/light trucks, six medium trucks (six tires/two axles) and three heavy trucks (all vehicles with three or more axles) passed the site on Dogwood Road. Monitoring Site 5 is located at the southwest corner of McCabe Ranch Road and Dogwood Road. During monitoring, a total of 65 cars/light trucks, one medium truck (six tires/two axles) and one heavy truck (all vehicles with three or more axles) passed the site at the site on McCabe Ranch Road. Monitoring Site 6 is located on the south side of McCabe Ranch Road at the intersection with Farnsworth Road. During monitoring, a total of 56 cars/light trucks, two medium trucks (six tires/two axles) and six heavy trucks (all vehicles with three or more axles) passed the site on McCabe Ranch Road. The monitoring locations are shown in Figure 6. The measured Leq at each location is shown in Table 4.

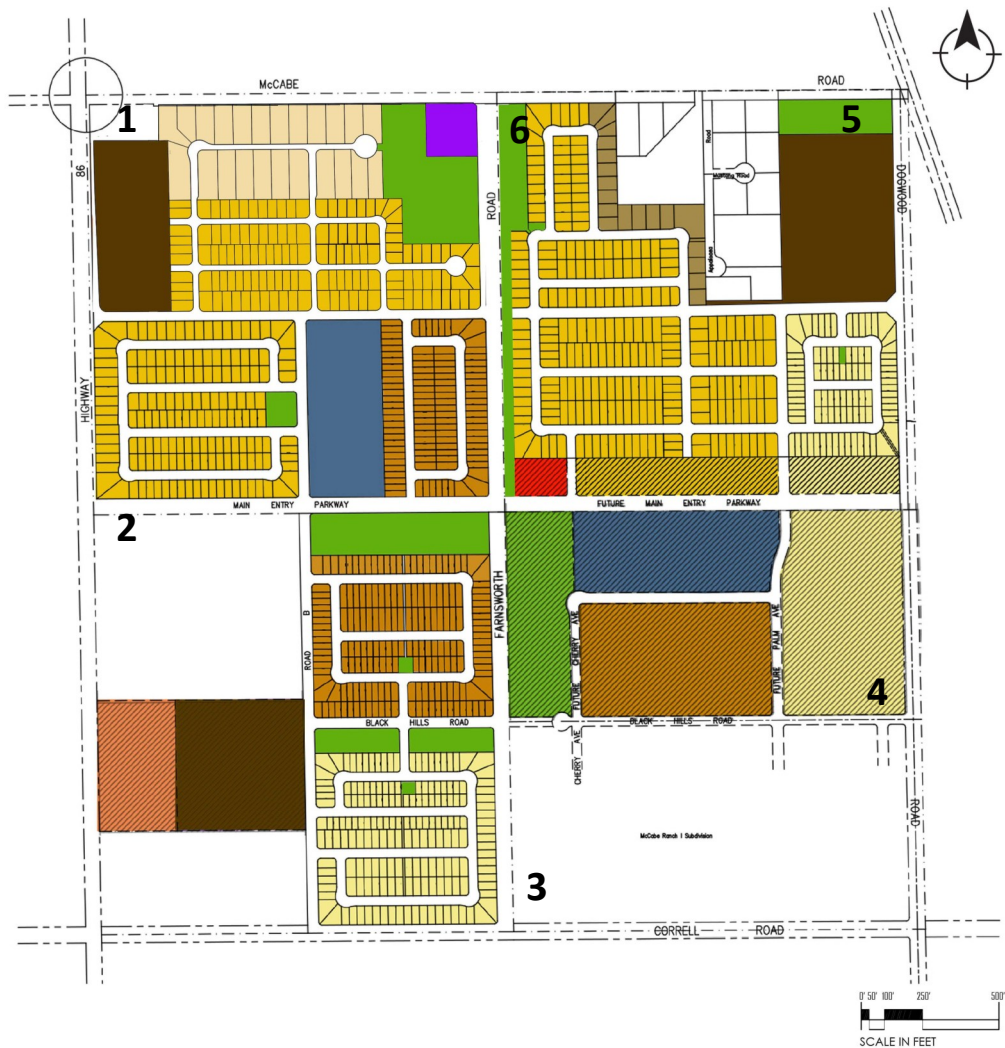


Figure 6—Noise Monitoring Locations

Table 4
Noise Monitoring Results

Measurement Location	Primary Noise Source	Sample Time	Leq (dBA)
Site 1. Southeast corner of McCabe Ranch Road and State Route 86.	Traffic	Weekday morning	66.6
Site 2. SR 86 and Main Entry Parkway.	Traffic	Weekday morning	67.6
Site 3. Western terminus of Correl Road.	Traffic	Weekday morning	49.2
Site 4. Intersection of Black Hills Road and Dogwood Road.	Traffic	Weekday morning	66.8
Site 5. Intersection of McCabe Ranch Road and Dogwood Road.	Traffic	Weekday morning	60.6
Site 6. Intersection of McCabe Ranch Road and Farnsworth Road.	Traffic	Weekday morning	62.2

Source: Field visit using ANSI Type II Integrating sound level meter.

Project Surroundings

The project site is surrounded by agricultural land to the east and west. There are several scattered single-family residential structures to the northwest, northeast, and west of the project site, including a small cluster of homes located along McCabe Road in the northeastern portion of the project site. As stated, the Union Pacific Railroad Line is located northeast of the project site. The single-family residential subdivision known as McCabe Ranch I Specific Plan abuts the project site on the southeast north of Correll Road and west of Dogwood Road. Additionally, agricultural land is located southwest of the site. Imperial County Airport is located approximately 6 miles north of the project site. According to the Airport Land Use Compatibility Plan, Imperial County Airports, the proposed project is outside the future noise impact area of the Imperial County Airport.

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Urban areas contain a variety of land use and development types that are noise sensitive including residences, schools, churches, hospitals and convalescent care facilities. Existing residences are located proximal to the monitoring locations. Heber Dogwood Elementary School is located southeast of the site adjacent to existing residences located northwest of Correll Road and Dogwood Road. Residences are also located along Dogwood Road south of the site and along SR 86 north of site between McCabe Road and West Danenberg Drive.

Regulatory Setting

In 1976, the California Department of Health, State Office of Noise Control published a recommended noise/land use compatibility matrix which many jurisdictions have adopted as a standard in their general plan noise elements. The California State Office of Planning and Research 2017 updates to the General Plan Guidelines, Appendix D Noise Element Guidelines, Figure 2, shows that exterior noise levels up to 60 dBA (CNEL or Ldn) are normally compatible in residential areas. Noise levels up to 70 dBA (CNEL or Ldn) are conditionally compatible provided interior noise levels can be reduced to 45 dBA CNEL.

Imperial County General Plan

The County has established noise guidelines in the Noise Element of the General Plan. These guidelines identify compatible exterior noise levels for various land use types. The maximum allowable noise exposure for various land uses are depicted in Table 5 below. As shown in the table, the normally acceptable exterior noise level for residential uses is 60 dB CNEL. Exterior noise levels from 60 to 70 dB CNEL are conditionally acceptable for residential uses “after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.” Commercial uses are subject to a maximum normally acceptable exterior noise level of 65 dB CNEL, while playgrounds and neighborhood parks are 70 dB CNEL.

Table 5
Land Use Compatibility for Community Noise Environments

Land Use	Normally Acceptable^a	Conditionally Acceptable^b	Normally Unacceptable^c	Clearly Unacceptable^d
Residential	To 60	60-70	70-75	Over 75
Transient Lodging – Hotels, Motels	To 60	60-75	75-80	Over 80
School, Libraries, Churches, Hospitals, Nursing Homes	To 60	60-70	70-80	Over 80
Auditoriums, Concert Halls, Amphitheaters	-	To 70	-	Over 70
Sports Arena, Outdoor Spectator Sports	-	To 70	70-75	Over 75
Playgrounds, Neighborhood Parks	To 70	-	70-75	Over 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	To 70	-	70-80	Over 80
Office Building, Business and Professional, Commercial	To 65	65-75	75-80	Over 80-
Industrial, Manufacturing, Utilities, Agriculture	To 70	70-75	75-80	Over 80-

^a Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

^b Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning would normally suffice.

^c Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

^d Clearly Unacceptable: New construction or development should generally not be undertaken.

Note: Noise levels are provided in A-weighted decibels, CNEL.
Source: Office of Noise Control, California Department of Health

As defined in the Imperial General Plan Noise Element, sensitive noise receptors are, in general, “areas of habitation where the intrusion of noise has the potential to adversely impact the occupancy, use or employment of the environment.” Sensitive receptors include, but are not limited to, residences, schools, hospitals, parks, and office buildings.

Construction Noise. The Noise Element of the County of Imperial General Plan defines a construction noise impact as noise generated from a single piece of construction equipment or a combination of equipment that exceeds 75 dBA Leq when averaged over an 8-hour period (Leq(8)) and measured at the nearest sensitive receptor (e.g., homes, schools, hospitals, parks, and office buildings, and for certain non-human species, including riparian bird species). In cases of extended-length construction times, the standard may be reduced so as to not exceed 75 dB Leq when averaged over a one-hour period. The Noise Element also limits construction equipment operation to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. Saturday and Sunday (Table 6).

Table 6
Construction Noise Standards

Construction Duration	Sound Level	Averaging Period	Hours of Operation Restrictions
Short-Term (days or weeks)	75 dBA	8 hours	7 a.m. – 7 p.m. Monday to Friday 9 a.m. – 5 p.m. Saturday No commercial construction operation is permitted on Sundays and holidays
Extended Periods	75 dBA	1 hour	7 a.m. – 7 p.m. Monday to Friday 9 a.m. – 5 p.m. Saturday No commercial construction operation is permitted on Sundays and holidays

Source: Imperial County General Plan, Noise Element, 2015

Imperial County Noise Ordinance

Operational Noise. The Property Line Noise Limits listed in Table 7 of the County of Imperial General Plan Noise Element and the County’s Ordinance, Title 9, Division 7 (Noise Abatement and Control) Section 90702.00 Subsection A provides acceptable Sound level limits based on the property zoning.

Stationary Noise. The applicable property line sound level limits are provided in Table 7 below and shall apply to noise generation from one property to an adjacent property. The standards imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. These standards do not apply to construction noise. Stationary sources associated with the project (i.e.,

heating, ventilation and air conditioning [HVAC]) would have an adverse effect if they exceed baseline conditions at receiving properties.

Table 7
Property Line Noise Level Limits

Zone	Time	Applicable Limit – One Hour Average Sound Level (decibels)
Residential Zones	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
Multi-residential Zones	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial Zones	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75
When the noise-generating property and the receiving property have different uses, the more restrictive standard shall apply. When the ambient noise level is equal to or exceeds the Property Line noise standard, the increase of the existing or proposed noise shall not exceed 3 dB Leq. The sound level limit between two zoning districts (different land uses) shall be measured at the property line between the properties. Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of subsection A of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located. This section does not apply to noise generated by helicopters at heliports or helistops authorized by a conditional use permit. This section does not apply to noise generated by standard agricultural field operating practices such as planting and harvesting of crops. The County of Imperial has a Right to Farm Ordinance (1031) which serves as recognition to agricultural practices to new development. Agricultural/industrial operations shall comply with the noise levels prescribed under the general industrial zones.		

Source: County of Imperial Ordinance, Title 9, Division 7 (Noise Abatement and Control)

The increase of noise levels generally results in an adverse impact to the noise environment. The Noise/Land Use Compatibility Guidelines are not intended to allow the increase of ambient noise levels up to the maximum without consideration of feasible noise reduction measures. The following guidelines are established by the County of Imperial for the evaluation of significant noise impact:

- a. If the future noise level after the Project is completed will be within the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, but will result in an increase of 5 dB CNEL or greater, the Project will have a potentially significant noise impact and mitigation measures must be considered.
- b. If the future noise level after the Project is completed will be greater than the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, a noise

increase of 3 dB CNEL or greater shall be considered a potentially significant noise impact and mitigation measures must be considered.

Traffic Noise. The Imperial County General Plan Noise Element (2015) (Table 7), provides a range of land uses and compatibility criteria based on exterior noise levels. These standards are the same as those referenced in the California State Office of Planning and Research 2017 updates to the General Plan Guidelines, Appendix D Noise Element Guidelines, Figure 2. These data show that exterior noise levels up to 60 dBA (CNEL or Ldn) are normally compatible in rural residential areas. Noise levels up to 70 dBA (CNEL or Ldn) are conditionally compatible. For the purpose of identifying potential traffic-related impacts associated with the proposed project, these standards are used. Because baseline conditions exceed 60 dBA around the perimeter of the site, an impact is determined based on whether the project would cause a 3 dBA or greater increase in noise levels over baseline conditions.

Vibration Standards

Vibration is a unique form of noise as the energy is transmitted through buildings, structures and the ground whereas audible noise energy is transmitted through the air. Thus, vibration is generally felt rather than heard. The ground motion caused by vibration is measured as particle velocity in inches per second (PPV) and which is also referenced as vibration decibels (VdB). The vibration velocity level threshold of perception for humans is approximately 0.006–0.019 PPV or 65 VdB. There are no federal or state regulatory standards for ground-borne vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For example, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. Table 8 shows various PPV and VdB levels and related human reactions and effects on buildings.

Table 8
Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent
Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effects on Buildings
0.006–0.019	64–74	Range of threshold of perception.	Vibrations unlikely to cause damage of any type.
0.08	87	Vibrations readily perceptible.	Recommended upper level to which ruins and ancient monuments should be subjected.
0.01	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities.	Virtually no risk of architectural damage to normal buildings.
0.2	94	Vibrations may begin to annoy people in buildings.	Threshold at which there is a risk of architectural damage to normal dwellings.
0.4–0.6	98-104	Vibrations considered unpleasant by people subjected to continuous	Architectural damage and possibly minor structural damage.

		vibrations and unacceptable to some people walking on bridges.	
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Source: Caltrans, April 2020

For the protection of fragile, historic, and residential structures, Caltrans recommends a threshold of 0.2 inches per second PPV (94 VdB). This same threshold would represent the level at which vibrations would be potentially annoying to people in buildings.

Construction activities such as blasting, pile driving, demolition, excavation and drilling have the potential to generate ground vibrations near structures. No historic buildings occur on the site or are known to occur near the site; thus, 94 VdB is used to quantify potential vibration impacts to neighboring structures. Construction activities referenced above that would generate significant vibration levels are not proposed. However, to provide information for use in completing the CEQA evaluation, construction-related vibration impacts are evaluated using the above referenced criteria.

IMPACT ANALYSIS

Methodology and Significance Thresholds

Construction noise estimates are based upon noise levels reported by the Federal Highway Administration for construction equipment and the distance between sensitive properties and the project site. Reference noise levels are used herein to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 3 dBA for line sources such as haul roads and 6 dB per doubling of distance (line-of-sight method of sound attenuation) for stationary sources and construction equipment. For the purpose of CEQA review, noise levels along SR 86, McCabe Road, Dogwood Road and Clark Road are estimated based on traffic volumes provided by Linscott, Law and Greenspan Engineers, Inc., (December 2024).

The impact analysis provided below is based on the following CEQA Guidelines, as listed in Appendix G of the CEQA Guidelines. An impact is considered significant if the project would:

- a. *Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*
- b. *Generate excessive groundborne vibration or groundborne noise levels?*
- c. *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

Construction noise estimates are based upon noise levels reported by the Federal Transit Administration, Office of Planning and Environment, and the distance to nearby sensitive receptors. Reference noise levels from that document were used to estimate noise levels at

nearby sensitive receptors based on the applicable noise attenuation rate of 6 dB per doubling of distance (free field propagation of sound attenuation).

The proposed project would be a new use; thus, noise levels associated with existing and future traffic were based on the difference in trip volumes between existing conditions and the proposed use less the pass by trips generated by existing traffic. A doubling of traffic volumes would be required to cause a noticeable increase (3 dBA) in traffic noise. As stated, measured baseline conditions exceed 60 dBA CNEL, the normally acceptable exterior sound level for rural residential properties referenced in the General Plan Noise Element. However, baseline conditions do not exceed 70 dBA, the conditionally compatible standard.

As noted, a noise increase greater than 3 dBA is readily perceptible to the average human ear; and thus, is the level considered a substantial noise increase related to traffic operations. For the purpose of this evaluation, the CNEL is used for traffic noise as it provides a conservative estimate of potential noise levels.

- a. Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Temporary Construction Noise

The primary source of noise during construction activities would be comprised of heavy machinery used during site preparation (i.e., clearing/grubbing), grading and clearing the site, as well as equipment used during building construction and paving. Table 9 shows the typical noise levels associated with heavy construction equipment. As shown in Table 9, average noise levels associated with the use of heavy equipment at construction sites can range from 81 to 91 dBA at 25 feet from the source, depending upon the types of equipment in operation at any given time and phase of construction (FTA 2018).

Project construction would occur over the entire project site as individual project components and phases are developed. Noise could impact receivers surrounding the site as well as those located on-site as each phase is constructed. Construction activities will vary in distance from the nearest on- and off-site sensitive properties; thus, noise levels will vary over the workday. The closest off-site receivers are located east of the proposed Phase I improvements, north/northwest of the proposed Phase II improvements, north of McCabe Road (Phases II and III), south of McCabe Road just west of the Dogwood Road intersection surrounded by Phase III improvements. Existing residences that were constructed as part of McCabe Ranch Phase I, are located south of the proposed Phase IV improvements which are concentrated north of Black Hills Road between Dogwood Road (east) and Farnsworth Lane (west).

Table 9
Typical Maximum Construction Equipment Noise Levels

Equipment Onsite	Typical Maximum Level (dBA) 25 Feet from the Source	Typical Maximum Level (dBA) 50 Feet from the Source	Typical Maximum Level (dBA) 100 Feet from the Source
Air Compressor	86	80	74
Backhoe	86	80	74
Bobcat Tractor	86	80	74
Concrete Mixer	91	85	79
Loader	86	80	74
Bulldozer	91	85	79
Jack Hammer	94	88	82
Pavement Roller	91	85	79
Street Sweeper	88	82	76
Man Lift	81	75	69
Dump Truck	90	84	78
Mobile Crane	89	83	77
Excavator/Scraper	91	85	79

*Source: FTA Noise and Vibration Impact Assessment Manual (September 2018), Table 7-1.
Noise levels are based on actual maximum measured noise levels at 50 feet (L_{max}).
Noise levels are based on a noise attenuation rate of 6 dBA per doubling of distance.*

While construction noise would attenuate over the distance between the nearest receivers and the work area, construction noise would likely be audible at on- and off-site properties. It is possible that noise levels could periodically exceed 75 dBA at the property line and adjacent receivers, particularly if bulldozers, excavator/scrapers and similar types of equipment are used. However, this type of equipment is mobile and moves around the site during a typical workday. Thus, while noise levels may exceed 75 dBA during pass by events, they are not likely to exceed a 75 dBA average over an 8-hour workday. However, Mitigation Measures NOI-1 through NOI-6 can be implemented to ensure that noise levels during construction do not exceed the County of Imperial construction noise standards at on- and off-site receivers:

Mitigation Measure NOI-1: Construction Equipment. Electrical power shall be used to run air compressors and similar power tools. Internal combustion engines should be equipped with a muffler of a type recommended by the manufacturer and in good repair. All diesel equipment should be operated with closed engine doors and should be equipped with factory-recommended mufflers. Construction equipment that continues to generate substantial noise at the project boundaries should be shielded with temporary noise barriers, such as barriers that meet a sound transmission class (STC) rating of 25, sound absorptive panels, or sound blankets on individual pieces of construction equipment. Stationary noise-

generating equipment, such as generators and compressors, should be located as far as practically possible from the nearest residential property lines.

Mitigation Measure NOI-2: Limit Operations Adjacent to Receivers. Limit the number of large pieces of equipment (i.e., bulldozers or concrete mixers) operating adjacent to receivers to one at any given time to the extent feasible.

Mitigation Measure NOI-3. Construction Staging. Construction contractors shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities.

Mitigation Measure NOI-4. Limit Deliveries. Construction contractors shall limit haul truck deliveries to the same hours specified for allowable use of construction equipment. To the extent feasible, haul routes shall avoid sensitive land uses or residential dwellings.

Mitigation Measure NOI-5: Neighbor Notification. Provide notification to residential occupants nearest to the project site 7-14 days prior to initiation of construction activities that could result in noise levels exceeding 75 dBA at the property line adjacent to residences. This notification should include the anticipated hours and duration of construction and a description of noise reduction measures being implemented at the project site. The notification should include a telephone number for local residents to call to submit complaints associated with construction noise.

Mitigation Measure NOI-6 Noise Control Plan. Construction contractors shall develop and implement a noise control plan that includes a noise control monitoring program to avoid construction noise levels exceeding 75 dBA Leq at the nearest sensitive receivers. The plan may include the following requirements:

- Contractor shall turn off idling equipment;
- Contractor shall perform noisier operation during the times least sensitive to receptors;
- All diesel equipment shall be operated with closed engine doors and shall be equipped with factory-recommended mufflers;
- Electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or security staff facilities.

With implementation of the above-referenced mitigation, temporary on- and off-site construction noise impacts would be **less than significant**.

Operational Noise

A programmatic evaluation of potential exterior traffic and stationary source noise impacts generated by development of the McCabe Ranch II Tract Map 994 Project. Traffic would primarily be comprised of new trips as each phase is developed. Stationary sources include activities associated with development of the proposed commercial center, business parks and schools. Phase I is estimated to generate 2,691 new daily vehicle trips, Phase II is estimated to generate 6,342 new daily vehicle trips, Phase III is estimated to generate 5,521 new daily vehicle trips and Phase IV is estimated to generate 11,536 new daily vehicle trips. Total daily trips generated by the combined phases would be 26,342. Of the total, morning peak hour (i.e., the heaviest hour between 7:00 a.m. and 9:00 a.m.) would generate 2,489 trips. A total of 2,483 trips would be generated during the evening peak hour (i.e., the heaviest hour between 4:00 p.m. and 6:00 p.m.).

Traffic Noise at On-Site Receivers. As stated, existing noise levels were measured around the perimeter of the project site on April 11, 2024 (Table 2). The Leq during the 15-minute monitoring period ranged from a low of 49.7 dBA at the western terminus of Correll Road and a high of 67.6 dBA along SR 86 generally along the western boundary of the Phase II improvement area. To evaluate potential traffic-related noise impacts associated with the project, roadway segments were modeled using the Federal Highway Administration Traffic Noise Model (TNM) version 2.5 software. The model calculates traffic noise at receiver locations based on traffic volumes, travel speed, mix of vehicle types operating on the roadways and related factors. The scenarios modeled comprise existing conditions, year 2026 and year 2040 under cumulative build out conditions on the following roadway segments:

Dogwood Road

- Heber Road to Correll Road;
- Correll Road to McCabe Road;
- McCabe Road to Danenberg Road;
- Danenberg Road to Interstate 8 interchange.

SR 86

- Heber Road to Correll Road;
- Correll Road to McCabe Road;
- McCabe Road to Danenberg Road;
- Danenberg Road to Interstate 8 interchange.

McCabe Road

- SR 86 to Farnsworth Road;
- Farnsworth Road to Dogwood Road
- SR 86 to Clark Road

Clark Road

- McCabe Road to Danenberg Road

- Danenberg Road to Interstate 8

The roadway segments modeled correspond with the ADT numbers provided by Linscott, Law and Greenspan Engineers, Inc. (December 2024). Modeling assumes 10 percent of the ADT occurs during the peak hour. Table 10 shows the CNEL for existing, year 2026 and year 2040 under cumulative build out conditions along the above-referenced roadway segments at 100 feet from the modeled roadway centerline.

Table 10
Modeled Roadway Segment Noise Levels

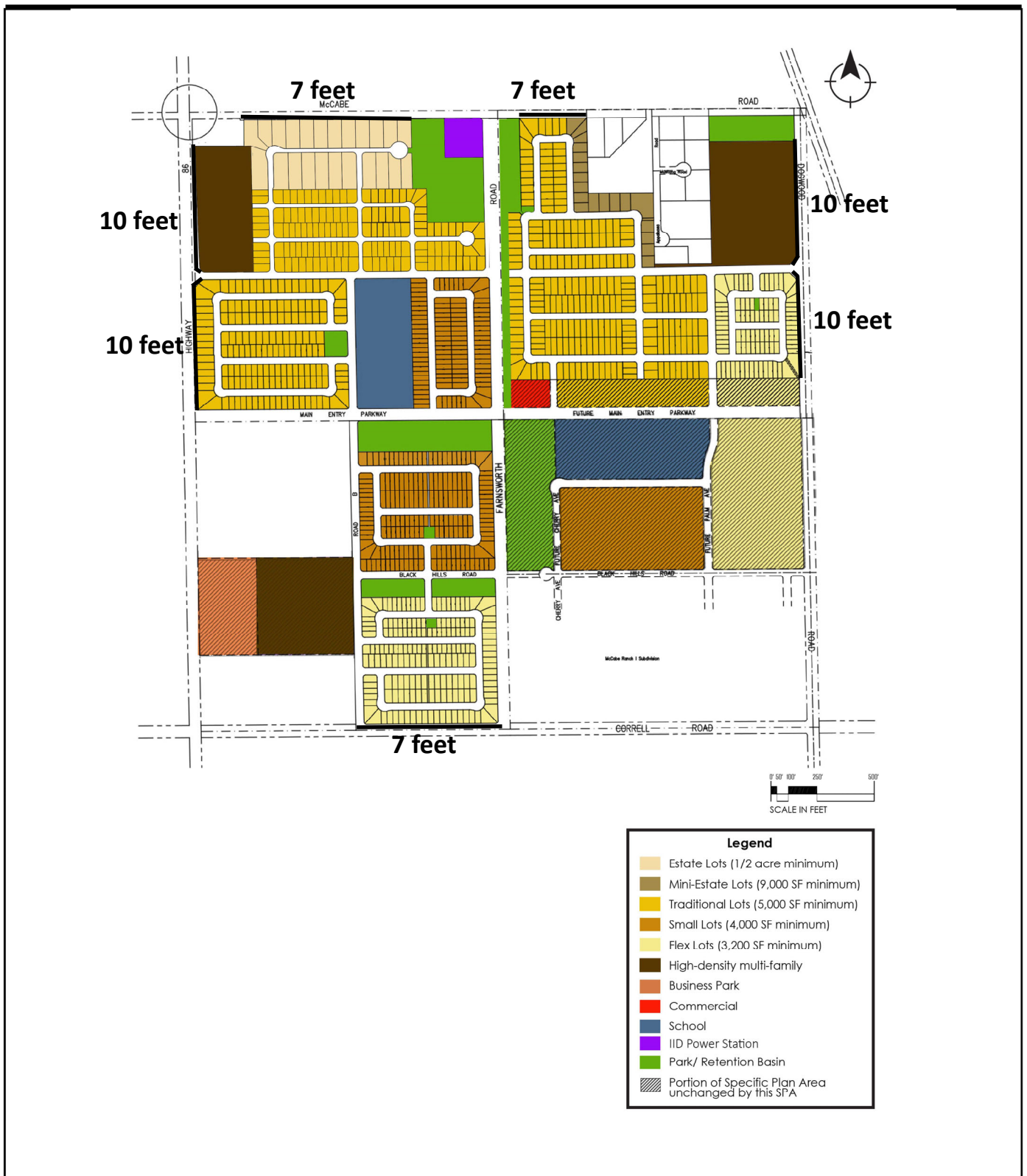
Roadway	Segment	CNEL 100 feet from Roadway Centerline			
		Existing	With Project	Project Contribution	Potentially Significant Impact
Dogwood Road	Heber Road to Correll Road	68.7	70.4	1.7	No
Dogwood Road	Correll Road to McCabe Road	68.0	69.7	1.7	No
Dogwood Road	McCabe Road to Danenberg Road;	68.5	70.1	1.6	No
Dogwood Road	Danenberg Road to Interstate 8	66.1	67.8	1.7	No
State Route 86	Heber Road to Correll Road	64.8	68.2	3.4	Yes
State Route 86	Correll Road to McCabe Road	64.9	68.3	3.4	Yes
State Route 86	McCabe Road to Danenberg Road;	67.6	69.9	2.3	No
State Route 86	Danenberg Road to Interstate 8	67.0	69.2	2.2	No
McCabe Road	SR 86 to Farnsworth Road;	67.3	70.2	2.9	No
McCabe Road	Farnsworth Road to Dogwood Road	63.9	65.0	1.1	No
McCabe Road	SR 86 to Clark Road	62.2	65.8	3.6	Yes
Clark Road	McCabe Road to Danenberg Road	66.1	69.9	3.8	Yes
Clark Road	Danenberg Road to Interstate 8	67.6	69.2	1.6	No

As shown in Table 10, the Project would increase noise levels along all road segments modeled. The project could contribute to significant noise impacts along SR 86 south of McCabe Road and along McCabe Road west of SR 86 to the intersection with Clark Lane and along Clark Lane north to Danenberg Road. Thus, without mitigation, the project would have a significant impact to on- and off-site receivers under **threshold b**.

Future exterior noise levels were estimated at building façades based on unmitigated traffic noise. Table 11 shows the estimated CNEL at the proposed on-site residential communities based on projected traffic volumes for year 2040. As shown, without mitigation, traffic noise would exceed 60 dBA CNEL at the first row of residences located adjacent to each roadway surrounding the site. Estimated exterior sound levels can be reduced to 60 dBA CNEL or less with the installation of barriers between the residences and adjacent roadways. The estimated barrier heights and associated noise reduction is shown in Table 11. Barrier locations are shown in Figure 7.

Table 11
Estimated Residential Exterior Noise Levels

Planning Area	Roadway	Unmitigated CNEL	Mitigated	Barrier Height
Estate Lots and Single-Family	McCabe Road	64.4	58.1	7
Flex Lots and Multi-family	Dogwood Road	70.8	60.4	10 feet
Flex Lots	Correll Road	65.7	60.0	7 feet
Single- and Multi-Ffamily	SR 86	68.3	60.1	10 feet



Source: McCabe Realty, LLC, 2024



Figure 7—Barrier Locations

Sound barriers are most effective for reducing exterior noise in outdoor backyard open space area and with the first floor interior living space. With respect to second floor residential noise exposure, California Energy Code Title 24 standards specify construction methods and materials that result in energy efficient structures that provide up to a 30 dBA reduction in exterior noise levels (assuming windows are closed). This includes operation of mechanical ventilation (e.g., heating and air conditioning), in combination with standard building construction that includes dual-glazed windows with a minimum Sound Transmission Class (STC) rating of 26 or higher. A 30 dBA reduction would reduce all exterior noise levels reported in Tables 10 and 11 to below 45 dBA. Thus, the interior residential noise standard is expected to be met. Mitigation Measure NOI-7 would address on-site exterior and interior noise impacts associated with development of each phase or components thereof. With implementation of Mitigation Measure NOI-7, potential on-site exterior and interior noise impacts would be reduced to less than significant under threshold b.

Mitigation Measure NOI-7. A site-specific noise study shall be performed for each development phase, or portion thereof, to determine exterior noise levels at affected on- and off-site residential properties to ensure interior noise levels of 45 dBA CNEL or lower are achieved in residential units exposed to exterior noise levels greater than 60 dBA CNEL. The analysis shall include an evaluation of noise barrier specifications required to achieve County of Imperial noise standards. Building sound insulation requirements shall include the use of forced-air mechanical ventilation, so that windows could be kept closed at the occupant's discretion to control noise. Determination of specific treatments shall be conducted on a unit-by-unit basis during project design. Results of the analysis, including the description of the necessary noise control treatments, shall be incorporated into a site/project specific environmental review and be submitted along with the building plans and approved prior to issuance of a building permit.

The County shall, at its discretion, determine whether off-site residences affected by project-related traffic noise warrant an evaluation of potential project impacts and mitigation options should impacts be determined potentially significant.

Exterior Noise at School Sites. As stated, two school sites are included in the development program. One is programmed as part of Phase II and the other as part of Phase IV. Schools generate noise and are also sensitive to noise sources proximal to the school site. Both school sites are interior to the project site and located 500-700 feet east of SR 86 and west of Dogwood Road; and thus, would be shielded from traffic noise. Other on-site noise sources would include the 3.14-acre commercial area and the two business parks. While these are not noise sensitive uses, they can generate noise that is audible at neighboring receivers depending on the type of uses developed.

Noise associated with schools generally consists of intermittent traffic noise and outdoor playground activities that can affect the surrounding land uses. The school sites are adjacent to

proposed residential developments and parks. To determine the approximate noise level generated by activities on school sites, previous noise measurements are referenced as follows:

- Soccer/outdoor field games – 52 dBA at 210 feet from the center of the field;
- Basketball/Sport Courts – 64 dBA Leq at 40 feet from the center of court;
- Playground - 64 dBA at 25 feet from the main concentration of activity;

The measured one-hour average noise level associated with outdoor school activities range from 52 to 64 dBA depending on the distance from the source. Daytime hourly average noise levels in excess of 50 dB would exceed the County's noise criteria at the residential properties. Specific residential setback information and the location of the school facilities within the proposed school sites are not available. Therefore, using the worst-case scenario, elementary school noise impacts on residential land uses are considered potentially significant.

Because each school would require a site-specific CEQA evaluation, a noise study would be prepared to determine noise impacts associated with operation of the school and neighboring uses. Based on future traffic volumes and related noise levels associated with near-term and project build-out, traffic noise along each of the project-related roadways was modeled. The results of the noise modeling for roadway traffic noise are presented in Table 10 above. Traffic noise at the school sites would attenuate by approximately 3 dBA per doubling of distance from the roadways and the intervening buildings as well as the noise barriers installed to reduce traffic noise at adjacent residences (see Table 11 below) would further reduce traffic noise at the school sites. However, it is possible that exterior noise exposure at the school sites caused by traffic or operation of the commercial center and/or business park could exceed 60 dB CNEL. This would be a significant impact. Mitigation Measure NOI-8 would reduce potential noise impacts at sensitive properties to **less than significant** per threshold b..

Mitigation Measure NOI-8. A site-specific acoustical analysis shall be prepared for the two elementary school sites proposed to address exterior use areas of the site (playground, sports fields, athletic courts, etc.). The acoustical study shall identify appropriate control measures for traffic-related noise sources upon the exterior use areas to ensure that noise levels do not exceed 60 dB CNEL at exterior use areas. Control measures may include physical improvements such as the installation of noise barriers to address traffic noise and operational controls such as limiting the hours of delivery and operation, designing site plans to minimize areas of noise exposure, selecting and locating HVAC equipment to comply with the County's Noise Ordinance, and/or installing enclosures around noisy equipment. All noise control measures required to meet County of Imperial noise standards shall be made conditions of development approval.

Off-Traffic Noise Impacts. The project would generate traffic along existing roads in the area including SR 86, McCabe Road, Dogwood Road, Farnsworth Road, Correll Road and Clark Road. Off-site traffic noise impacts are evaluated based on the direct project noise impact (existing plus project traffic volumes) and relative to the long-term cumulative noise impact.

The County of Imperial has established guidelines for the evaluation of significant noise impacts. They are as follows:

- a. If the future noise level after the project is completed will be within the “normally acceptable” noise levels shown in the Noise/Land Use Compatibility Guidelines, but will result in an increase of 5 dBA CNEL or greater, the project will have a potentially significant noise impact and mitigation measures must be considered.
- b. If the future noise level after the project is completed will be greater than the “normally acceptable” noise levels shown in the Noise/Land Use Compatibility Guidelines, a noise level increase of 3 dBA CNEL or greater shall be considered a potentially significant noise impact and mitigation measures must be considered.

As shown in Table 10 above, the Project would increase noise levels along all road segments modeled; and thus, could contribute to significant noise impacts at existing receivers along SR 86 south of McCabe Road, along McCabe Road west of SR 86 to the intersection with Clark Lane and along Clark Lane north to Danenberg Road. Thus, without mitigation, the project would have a significant impact under **threshold b**. With implementation of Mitigation Measure NOI-7, potentially significant impacts to off-site residential receivers would be reduced to less than significant.

Train-Generated Noise Impacts On-Site. As stated, the UPRR freight rail line is located approximately 200 feet northeast of the McCabe Road/Dogwood Road intersection. Rail noise at the project site was estimated using proprietary program which calculates noise generated by train operation. According to the Federal Rail Commission crossing inventory (2019), a total of one freight train and two switching trains use the Dogwood Crossing daily between 6:00 a.m. and 6:00 p.m. No nighttime train movements occur. The CNEL estimated at 200 feet from the track is 50.5 dBA. This is below the County of Imperial exterior noise standard of 60 dBA CNEL. Rail noise impacts would be less than significant.

Commercial Center and Business Park Noise Levels. Phase IV includes development of a 3.14-acre commercial center and 9.41 acres of business park uses. These project components would be located proximal to residences and the proposed schools. Sources of commercial noise typically include truck maneuvering and unloading, air conditioning units (HVAC), trash compactors and menu board speakers. Noise levels associated with the commercial activities would be dependent on the types of uses and based on the number of delivery trucks, loading dock areas, and customer traffic generated by the commercial site. Similarly, HVAC equipment noise would vary depending on the number and types of equipment selected, location and architectural screening. It is unknown at this time what uses would be constructed on the commercial and business park sites; however, based on the location and proximity of residences and schools, noise impacts associated with commercial activities could be potentially

significant. Implementation of Mitigation Measure NOI-9 would reduce potentially significant impacts to less than significant.

Mitigation Measure NOI-9. A detailed noise analysis shall be prepared as part of site plan/development plan review for future commercial development applications submitted to the County, to ensure noise levels would comply with the County's General Plan Noise Element standards and County Noise Ordinance standards and not result in significant noise impacts to adjacent residences or schools, if constructed. All required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

b. Generate excessive groundborne vibration or groundborne noise levels?

Temporary Construction-Related Vibration

Construction activity on the project site would be temporary and vibration events would be transitory occurring only during equipment pass bys. Using vibration levels associated with a large bulldozer the piece of equipment with the highest vibration level (see Table 13), as a worst case scenario, typical groundborne vibration could reach 87 VdB at 25 feet and attenuate to 81 VdB at 50 feet, the distance between the property boundary and nearest receivers which are located at the southeast corner of SR 86 and McCabe Road intersection and west of Dogwood Road, south of McCabe Road. Construction would also occur adjacent to sensitive properties on-site as they are developed. Vibration at this level can cause annoyance for brief periods of time during pass by events. However sustained equipment operation is not expected to occur nor would the PPV reach levels that may cause structural damage to existing or future buildings.

As stated, vibration levels in excess of 75 VdB may be perceptible; thus, vibration may be perceptible at the nearest residences periodically during equipment pass by events. While there are no specific standards for use in quantifying excessive vibration levels, the PPV would not be high enough to damage buildings (i.e., 0.2 PPV) nor would construction activities generate vibration levels high enough to annoy people (i.e., 94 dBA). Mitigation Measures NOI-1 to NOI-7 would reduce temporary construction noise, although not required to mitigate vibration impacts, would also minimize vibration associated with the project. While temporary vibration impacts are expected to be less than significant, Mitigation Measure NOI-10 is recommended to address project-specific vibration impacts. With implementation of Mitigation Measure NOI-10, potential impacts associated with vibration would be reduced to less than significant.

Mitigation Measure NOI-10. A detailed vibration analysis shall be prepared as part of site plan/development plan review for future development applications submitted to the County, to ensure noise levels would comply with the County's General Plan Noise Element standards and County Noise Ordinance standards and not result in significant noise impacts at adjacent residences. The acoustical analysis shall include an analysis of

vibration related impacts. All required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

Table 12
Vibration Source Levels for Construction Equipment

	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.		

Rail Vibration. As noted, the northeast corner of the project site is located approximately 200 feet southwest of the UPRR rail corridor. Thus, a screening evaluation of potential vibration impacts was performed to determine whether development proximal to this location would be exposed to vibration levels that could be perceived by residents. Because the receivers would be residential, it would be considered a Category 2 land use for the purposes of vibration assessment as defined in the *Federal Transit Administration, Transit Noise and Vibration Impact Assessment* (2018). This category covers all residential land uses and any buildings where people sleep, such as hotels and hospitals.

The impact criteria for a Category 2 land use is 80 VdB along infrequently used corridors (i.e., fewer than five events daily). As noted, a vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels.

A screening level evaluation was performed to determine the likelihood of vibrations from the UPRR corridor affecting the proposed project. The screening distance for conventional commuter railroads was used to account for both passenger and freight trains. The distance between a conventional commuter railroad and Category 2 land use where the potential for a vibration impact to occur is 200 feet as defined in Table 6.8 within the FTA noise and vibration impact assessment methodology referenced above. The screening distances include a 5-decibel safety factor. The proposed project site at the 200-foot screening distance; thus, a general vibration assessment was performed to provide a more detailed evaluation of potential vibration impacts.

The general vibration assessment methodology is provided in Chapter 6 of the assessment manual identified above. It is based on the use of a base curve to determine vibration as a function of distance from the track assuming a standard rail and ballast configuration. Using the diesel powered locomotive powered passenger or freight base curve (see Figure 6-4 in the *Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual*), the vibration level is 72.0 VdB at approximately 200 feet from the track at a reference speed of 50 miles per hour. Using a correction factor of 2 VdB for speed (40 in the study area vs. a 50 VdB reference level), the vibration level at 200 feet is estimated to be 70.0 VdB. Projected vibration levels would not exceed the 72 VdB threshold.

Operational Vibration

The proposed project would include residential, commercial, school, business park and park development. These uses do not involve heavy industrial activities or impact sources that would generate vibration detectable off-site. **No impact** related operational vibration would occur.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Project site is located approximately 5.8 miles southeast of the Imperial County Airport. The site is located outside the Airport Influence Area according to Figure 3-E. Thus, the project site is located outside the 60 dB contour line for airport operations. Project residents and employees would not be exposed to excessive airport noise. **No impact** would occur.

CONCLUSION

The proposed project was evaluated for potential construction and operational noise impacts. As discussed herein, temporary construction noise impacts may exceed County of Imperial noise standard of 75 dBA (8-hour) Leq. Implementation of conditions N-1 through N-6 would reduce potentially significant construction impacts to less than significant. Traffic noise is likely to exceed the residential standard at multiple locations along the roadways modeled for both on- and off-site receiving properties. Operation of the proposed commercial uses and business parks have the potential to generate impacts to on-site receivers. Mitigation Measure NOI-7 would address potential impacts associated with traffic noise. Mitigation Measure NOI-8 would address impacts associated with operation of the two school sites. Mitigation Measure NOI-9 would address potential impacts associated with the business park and commercial center.

Temporary impacts associated with construction vibration would be addressed with implementation of Mitigation Measure NOI-10. The proposed uses do not generate vibration; thus, no vibration impacts are anticipated to occur with operation of the project.

With respect to airport operations, the project site is not located within a noise exposure range of 60–75 dB CNEL associated with operation of the Imperial County Airport. Thus, the project employees would not be exposed to excessive noise levels. Impacts would be less than significant.

REFERENCES

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- Federal Highway Administration. *Roadway Construction Noise Model*. 2006. Users Guide Table 1.
- Imperial County Airport, Compatibility Maps, Figure 3E, September 2004.
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- United States Environmental Protection Agency. *Federal Noise Control Act of 1972*, 42 U.S.C. §4901 *et seq.*, 1972

Appendix A

Monitoring Data Sheet and Modeling Results

FIELD NOISE MEASUREMENT DATA

Project Name: McCabe Ranch Page 1 of 1

Project #: _____ Day / Date _____ My Name: _____

Sound Level Meter				Calibrator				Weather Meter				
Model #	Serial #	Weighting:	Response:	Model #	Serial #	Pre-Test:	Post-Test:	Model #	Serial #	Terrain:	Topo:	Wind:
<u>Pico II</u>		<u>A</u> / C / Flat	<u>Slow</u> / Fast / Impl							<u>Hard</u> / Soft / <u>Wet</u>	<u>Flat</u> / Hilly (describe)	<u>Steady</u> / Gusty
Windscreen:	<u>Yes</u> / No											

ID	Time Start	Time Stop	Leq	Lmin	Lmax	L10	L50	L90	Wind Spd/ Dir (mph)	Temp (°F)	RH (%)	Bar Psr (in Hg)	Cloud Cover (%)
1	7:25	7:40	66.6	59.5	82.6								
2	7:50	8:05	67.6	48.6	85.3					65			0%
3	8:15	8:30	69.2	40.8	84.8					68			0%
4	8:40	8:55	66.8	44.0	83.7					70			0%
										72			0%

Roadway Name	Speed (post/obs)	Number of Lanes	Width (pave/row)	1- or 2- way	Grade	Bus Stops	Stoplights	Street Parking	Automobiles	Medium Trucks	Heavy Trucks
<u>SR 86</u>	<u>55</u>	<u>2</u>	<u>24</u>	<u>2</u>	<u>0%</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>74</u>	<u>2</u>	<u>4</u>
<u>SR 86</u>	<u>55</u>	<u>24</u>	<u>2</u>	<u>2</u>	<u>0%</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>105</u>	<u>1</u>	<u>7</u>
<u>Corral</u>	<u>25</u>	<u>2</u>	<u>24</u>	<u>2</u>	<u>0%</u>	<u>NO</u>	<u>NO</u>	<u>45</u>	<u>2</u>	<u>6</u>	<u>0</u>
<u>Donkey / Road 11/1</u>	<u>35</u>	<u>2/3</u>	<u>30</u>	<u>2</u>	<u>0%</u>	<u>NO</u>	<u>NO</u>	<u>138</u>	<u>6</u>	<u>6</u>	<u>3</u>

Location(s) / GPS Reading(s): _____

Other Noise Sources: distant aircraft / roadway traffic / trains / landscaping / rustling leaves / children playing / dogs barking / birds vocalizing

Notes and Sketches on Reverse

Site 2 - truck turnaround event (3)
Site 3 -

FIELD NOISE MEASUREMENT DATA

Project Name: <u>McLabe Ranch</u>										Page <u>1</u> of <u>1</u>				
Project #:		Day / Date <u>4-11-2024</u>								My Name:				
Sound Level Meter					Calibrator					Weather Meter				
Model #: <u>Pico 10 II</u>					Model #:					Model #:				
Serial #:					Serial #:					Serial #:				
Weighting: <u>A</u> C / Flat					Pre-Test: _____ dBA SPL					Terrain: Hard / Soft <u>Mixed</u>				
Response: <u>Slow</u> / Fast / Impl					Post-Test: _____ dBA SPL					Topo: <u>Flat</u> / Hilly (describe)				
Windscreen: <u>Yes</u> / No										Wind: <u>Steady</u> / Gusty				

ID	Time Start	Time Stn	Leq	Lmin	Lmax	L10	L50	L90	Wind Spd/ Dir (mph)	Temp (°F)	RH (%)	Bar Psr (in Hg)	Cloud Cover (%)
5	9:00	9:15	60.0						1-2 W	76			0%
6	9:20	9:35	62.2	42.8	76.8				1-2	76			0%

Roadway Name: <u>McLabe Ranch</u> Speed (post/obs): <u>40</u> Number of Lanes: <u>2</u> Width (pave/row): <u>24</u> 1- or 2- way: <u>2</u> Grade: <u>0%</u> Bus Stops: <u>NO</u> Stoplights: <u>2 Dogwood</u> Street Parking: <u>NO</u> Automobiles: <u>65</u> Medium Trucks: <u>1</u> Heavy Trucks: <u>1</u>	Location(s) / GPS Reading(s): <u>McLabe Ranch</u> <u>40</u> <u>2</u> <u>24</u> <u>2</u> <u>0%</u> <u>NO</u> <u>NO</u> <u>NO</u> <u>56</u> <u>2</u> <u>6</u>
--	---

Other Noise Sources: distant aircraft / roadway traf / trains / landscaping / rustling leaves / children playing / dogs barking / birds vocalizing

Notes and Sketches on Reverse

Site 1

Start Date	4/11/2024
Start Time	7:25:38 AM
End Time	7:40:37 AM
Duration	00:14:59
Meas Mode	Single
Input Range	Low
Input Type	Mic
SPL Time Weight	Fast
LN% Freq Weight	dB
Overload	No
UnderRange	No
Sensitivity	18.44mV/Pa

LZeq	74.1
LCeq	72.9
LAeq	66.6
LZFmax	93.9
LCFmax	89.3
LAFmax	82.6
LZFmin	61.5
LCFmin	60.3
LAFmin	50.3
LZE	103.6
LCE	102.4
LAE	96.1
LZpk	101.2
LCpk	100.0
LApk	96.6
LAF1%	77.9
LAF2%	76.2
LAF5%	73.8
LAF8%	71.9
LAF10%	70.7
LAF25%	64.1
LAF50%	57.7
LAF90%	53.7
LAF95%	53.0
LAF99%	51.7

Site 2

Start Date	4/11/2024
Start Time	7:49:28 AM
End Time	8:04:27 AM
Duration	00:14:59
Meas Mode	Single
Input Range	Low
Input Type	Mic
SPL Time Weight	Fast
LN% Freq Weight	dBA
Overload	No
UnderRange	No
Sensitivity	18.44mV/Pa

LZeq	75.0
LCeq	74.4
LAEq	67.6
LZFmax	96.6
LCFmax	96.4
LAFmax	85.3
LZFmin	61.4
LCFmin	59.4
LAFmin	48.6
LZE	104.5
LCE	103.9
LAE	97.1
LZpk	104.3
LCpk	103.6
LApk	98.4
LAF1%	78.1
LAF2%	75.9
LAF5%	73.8
LAF8%	72.5
LAF10%	71.9
LAF25%	67.4
LAF50%	60.1
LAF90%	54.1
LAF95%	52.7
LAF99%	50.7

Site 3

Start Date	4/11/2024
Start Time	8:17:41 AM
End Time	8:32:40 AM
Duration	00:14:59
Meas Mode	Single
Input Range	Low
Input Type	Mic
SPL Time Weight	Fast
LN% Freq Weight	dBA
Overload	No
UnderRange	No
Sensitivity	18.44mV/Pa

LZeq	65.9
LCeq	62.5
LAeq	49.2
LZFmax	81.5
LCFmax	72.6
LAFmax	64.8
LZFmin	56.6
LCFmin	54.0
LAFmin	40.8
LZE	95.4
LCE	92.0
LAE	78.7
LZpk	89.4
LCpk	83.1
LApk	75.5
LAF1%	55.8
LAF2%	54.8
LAF5%	53.3
LAF8%	52.3
LAF10%	51.9
LAF25%	50.1
LAF50%	48.1
LAF90%	43.5
LAF95%	42.9
LAF99%	42.1

Site 4

Start Date	4/11/2024
Start Time	8:39:46 AM
End Time	8:54:46 AM
Duration	00:15:00
Meas Mode	Single
Input Range	Low
Input Type	Mic
SPL Time Weight	Fast
LN% Freq Weight	dBA
Overload	No
UnderRange	No
Sensitivity	18.44mV/Pa

LZeq	75.1
LCeq	74.4
LAEq	66.8
LZFmax	99.6
LCFmax	99.4
LAFmax	83.7
LZFmin	58.9
LCFmin	56.4
LAFmin	44.0
LZE	104.6
LCE	103.9
LAE	96.3
LZpk	106.6
LCpk	105.8
LApk	97.8
LAF1%	76.2
LAF2%	74.8
LAF5%	72.7
LAF8%	71.6
LAF10%	70.9
LAF25%	67.5
LAF50%	61.6
LAF90%	49.4
LAF95%	47.3
LAF99%	44.9

Site 5

Start Date	4/11/2024
Start Time	9:04:28 AM
End Time	9:19:28 AM
Duration	00:15:00
Meas Mode	Single
Input Range	Low
Input Type	Mic
SPL Time Weight	Fast
LN% Freq Weight	dBA
Overload	No
UnderRange	No
Sensitivity	18.44mV/Pa

LZeq	72.6
LCeq	69.9
LAeq	60.6
LZFmax	88.4
LCFmax	85.7
LAFmax	77.4
LZFmin	56.7
LCFmin	54.8
LAFmin	39.9
LZE	102.1
LCE	99.4
LAE	90.1
LZpk	96.7
LCpk	97.3
LApk	91.0
LAF1%	71.7
LAF2%	69.3
LAF5%	66.5
LAF8%	65.3
LAF10%	64.7
LAF25%	59.7
LAF50%	50.4
LAF90%	43.4
LAF95%	42.4
LAF99%	41.4

Site 6

Start Date	4/11/2024
Start Time	9:23:50 AM
End Time	9:38:49 AM
Duration	00:14:59
Meas Mode	Single
Input Range	Low
Input Type	Mic
SPL Time Weight	Fast
LN% Freq Weight	dBA
Overload	No
UnderRange	No
Sensitivity	18.44mV/Pa

LZeq	74.4
LCeq	71.5
LAeq	62.2
LZFmax	89.4
LCFmax	87.0
LAFmax	78.8
LZFmin	62.4
LCFmin	58.8
LAFmin	42.8
LZE	103.9
LCE	101.0
LAE	91.7
LZpk	104.3
LCpk	103.2
LApk	105.0
LAF1%	73.6
LAF2%	72.2
LAF5%	69.3
LAF8%	67.4
LAF10%	66.4
LAF25%	60.0
LAF50%	52.3
LAF90%	45.1
LAF95%	44.5
LAF99%	43.8

RESULTS: SOUND LEVELS

<Project Name?>

<Organization?>								13 February 2025					
<Analysis By?>								TNM 2.5					
								Calculated with TNM 2.5					
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		McCabe Ranch SP Existing											
BARRIER DESIGN:		INPUT HEIGHTS							Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.				
ATMOSPHERICS:		68 deg F, 50% RH											
Receiver													
Name	No.	#DUs	Existing	No Barrier				With Barrier					
			LAeq1h	LAeq1h		Increase over	existing	Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'I Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0	
Receiver2	2	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0	
Receiver3	3	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
Receiver4	4	1	0.0	67.8	66	67.8	10	Snd Lvl	67.8	0.0	8	-8.0	
Receiver5	5	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0	
Receiver6	6	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0	
Receiver7	7	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0	
Receiver8	8	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0	
Receiver9	9	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0	
Receiver10	12	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0	
Receiver11	13	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0	
Receiver12	14	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0	
Receiver13	15	1	0.0	66.3	66	66.3	10	Snd Lvl	66.3	0.0	8	-8.0	
Receiver14	16	1	0.0	62.9	66	62.9	10	----	62.9	0.0	8	-8.0	
Receiver15	17	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0	
Receiver16	18	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0	
Receiver17	19	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0	
Receiver18	20	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
Receiver19	21	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0	
Receiver20	22	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0	
Receiver23	23	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								

RESULTS: SOUND LEVELS

<Project Name?>

			dB	dB	dB							
All Selected		21	0.0	0.0	0.0							
All Impacted		10	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

<Project Name?>

<Organization?>								13 February 2025					
<Analysis By?>								TNM 2.5					
								Calculated with TNM 2.5					
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		McCabe Ranch SP w-Project											
BARRIER DESIGN:		INPUT HEIGHTS											
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.											
ATMOSPHERICS:		68 deg F, 50% RH											
Receiver													
Name	No.	#DUs	Existing	No Barrier				With Barrier					
			LAeq1h	LAeq1h		Increase over	existing	Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'I Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0	
Receiver2	2	1	0.0	69.7	66	69.7	10	Snd Lvl	69.7	0.0	8	-8.0	
Receiver3	3	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0	
Receiver4	4	1	0.0	69.6	66	69.6	10	Snd Lvl	69.6	0.0	8	-8.0	
Receiver5	5	1	0.0	69.7	66	69.7	10	Snd Lvl	69.7	0.0	8	-8.0	
Receiver6	6	1	0.0	69.1	66	69.1	10	Snd Lvl	69.1	0.0	8	-8.0	
Receiver7	7	1	0.0	69.1	66	69.1	10	Snd Lvl	69.1	0.0	8	-8.0	
Receiver8	8	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0	
Receiver9	9	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0	
Receiver10	12	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0	
Receiver11	13	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0	8	-8.0	
Receiver12	14	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0	8	-8.0	
Receiver13	15	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0	
Receiver14	16	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0	
Receiver15	17	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0	
Receiver16	18	1	0.0	66.2	66	66.2	10	Snd Lvl	66.2	0.0	8	-8.0	
Receiver17	19	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0	
Receiver18	20	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0	
Receiver19	21	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0	
Receiver20	22	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0	
Receiver23	23	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								

RESULTS: SOUND LEVELS

<Project Name?>

			dB	dB	dB							
All Selected		21	0.0	0.0	0.0							
All Impacted		19	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

<Project Name?>

<Organization?>								13 February 2025				
<Analysis By?>								TNM 2.5				
								Calculated with TNM 2.5				
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		<Project Name?>										
RUN:		McCabe Ranch SP w-Project										
BARRIER DESIGN:		INPUT HEIGHTS										
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.										
ATMOSPHERICS:		68 deg F, 50% RH										
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h			Increase over existing	Type	Calculated	Noise Reduction		
				Calculated	Crit'n		Calculated	Crit'n			Calculated	Goal
								Sub'I Inc				Calculated
												minus
												Goal
			dBA	dBA	dBA		dB	dB		dBA	dB	dB
Receiver1	1	1	0.0	69.2	66		69.2	10	Snd Lvl	69.2	0.0	8
Receiver2	2	1	0.0	69.7	66		69.7	10	Snd Lvl	69.7	0.0	8
Receiver3	3	1	0.0	67.0	66		67.0	10	Snd Lvl	67.0	0.0	8
Receiver4	4	1	0.0	69.6	66		69.6	10	Snd Lvl	69.6	0.0	8
Receiver5	5	1	0.0	69.7	66		69.7	10	Snd Lvl	69.7	0.0	8
Receiver6	6	1	0.0	69.1	66		69.1	10	Snd Lvl	69.1	0.0	8
Receiver7	7	1	0.0	69.1	66		69.1	10	Snd Lvl	69.1	0.0	8
Receiver8	8	1	0.0	66.8	66		66.8	10	Snd Lvl	66.8	0.0	8
Receiver9	9	1	0.0	66.8	66		66.8	10	Snd Lvl	66.8	0.0	8
Receiver10	12	1	0.0	67.2	66		67.2	10	Snd Lvl	67.2	0.0	8
Receiver11	13	1	0.0	67.3	66		67.3	10	Snd Lvl	67.3	0.0	8
Receiver12	14	1	0.0	67.3	66		67.3	10	Snd Lvl	67.3	0.0	8
Receiver13	15	1	0.0	69.2	66		69.2	10	Snd Lvl	69.2	0.0	8
Receiver14	16	1	0.0	64.0	66		64.0	10	----	64.0	0.0	8
Receiver15	17	1	0.0	64.8	66		64.8	10	----	64.8	0.0	8
Receiver16	18	1	0.0	66.2	66		66.2	10	Snd Lvl	66.2	0.0	8
Receiver17	19	1	0.0	66.7	66		66.7	10	Snd Lvl	66.7	0.0	8
Receiver18	20	1	0.0	66.6	66		66.6	10	Snd Lvl	66.6	0.0	8
Receiver19	21	1	0.0	68.9	66		68.9	10	Snd Lvl	68.9	0.0	8
Receiver20	22	1	0.0	68.9	66		68.9	10	Snd Lvl	68.9	0.0	8
Receiver23	23	1	0.0	68.2	66		68.2	10	Snd Lvl	68.2	0.0	8
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							

RESULTS: SOUND LEVELS

<Project Name?>

			dB	dB	dB							
All Selected		21	0.0	0.0	0.0							
All Impacted		19	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

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