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# **Appendix G**

## Noise Reports



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# Environmental Noise and Vibration Assessment (February 2024)



# Environmental Noise & Vibration Assessment

## Creekside Village Residential Development

El Dorado County, California

BAC Job # 2020-143

Prepared For:

Winn Ridge Investments, LLC.

Attn: George M. Carpenter Jr.  
3001 I Street, Suite 300  
Sacramento, CA 95816

Prepared By:

**Bollard Acoustical Consultants, Inc.**



Dario Gotchet, Principal Consultant

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## Introduction

The proposed Creekside Village Residential Development (project) is a 208-acre residential development located south of El Dorado Hills Business Park, and west of Latrobe Road in El Dorado County, California. The project site is bordered to the north by the El Dorado Hills Business Park, the Blackstone master planned community (Valley View Specific Plan) to the east, undeveloped R & D land within the Carson Creek Specific Plan to the west, and undeveloped rural residential and industrial lands to the south. The proposed project consists of approximately 918 dwelling units, one village and two neighborhood parks, a 1.8-acre neighborhood commercial site, and approximately 46-acres of open space. The project area and site plan are shown in Figures 1 and 2, respectively.

The purposes of this assessment are to quantify the existing noise and vibration environments, identify potential noise and vibration impacts resulting from the project, identify appropriate mitigation measures, and provide a quantitative and qualitative analysis of impacts associated with the project. Specifically, impacts are identified if project-related activities would cause a substantial increase in ambient noise or vibration levels at existing sensitive land uses in the project vicinity, or if future traffic, commercial / business, or project-generated noise or vibration levels would exceed applicable federal, state, or local standards at the residences proposed within this development.

## Noise and Vibration Fundamentals

### Noise

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are designated as sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or Hertz (Hz). Definitions of acoustical terminology are provided in Appendix A.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness. Noise levels associated with common noise sources are provided in Figure 3.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by filtering the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of

environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ( $L_{eq}$ ). The  $L_{eq}$  is the foundation of the day-night average noise descriptor, DNL (or  $L_{dn}$ ), and shows very good correlation with community response to noise. DNL is based on the average noise level over a 24-hour day, with a +10-decibel weighting applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours. The nighttime penalty is based on the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because DNL represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

## **Vibration**

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, while vibration is usually associated with transmission through the ground or structures. As with noise, vibration consists of an amplitude and frequency. A person's response to vibration will depend on their individual sensitivity as well as the amplitude and frequency of the source.

Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of velocity in inches per second peak particle velocity (IPS, PPV) or root-mean-square (VdB, RMS). Standards pertaining to perception as well as damage to structures have been developed for vibration in terms of peak particle velocity as well as RMS velocities.

As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases.

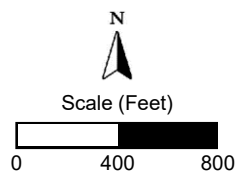
According to the Transportation and Construction-Induced Vibration Guidance Manual (Caltrans, April 2020), operation of construction equipment and construction techniques generate ground vibration. Traffic traveling on roadways can also be a source of such vibration. At high enough amplitudes, ground vibration has the potential to damage structures and/or cause cosmetic damage. Ground vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. However, traffic, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage.





**Legend**

- - - Project Area Boundary (Approximate)
- Noise & Vibration Survey Locations



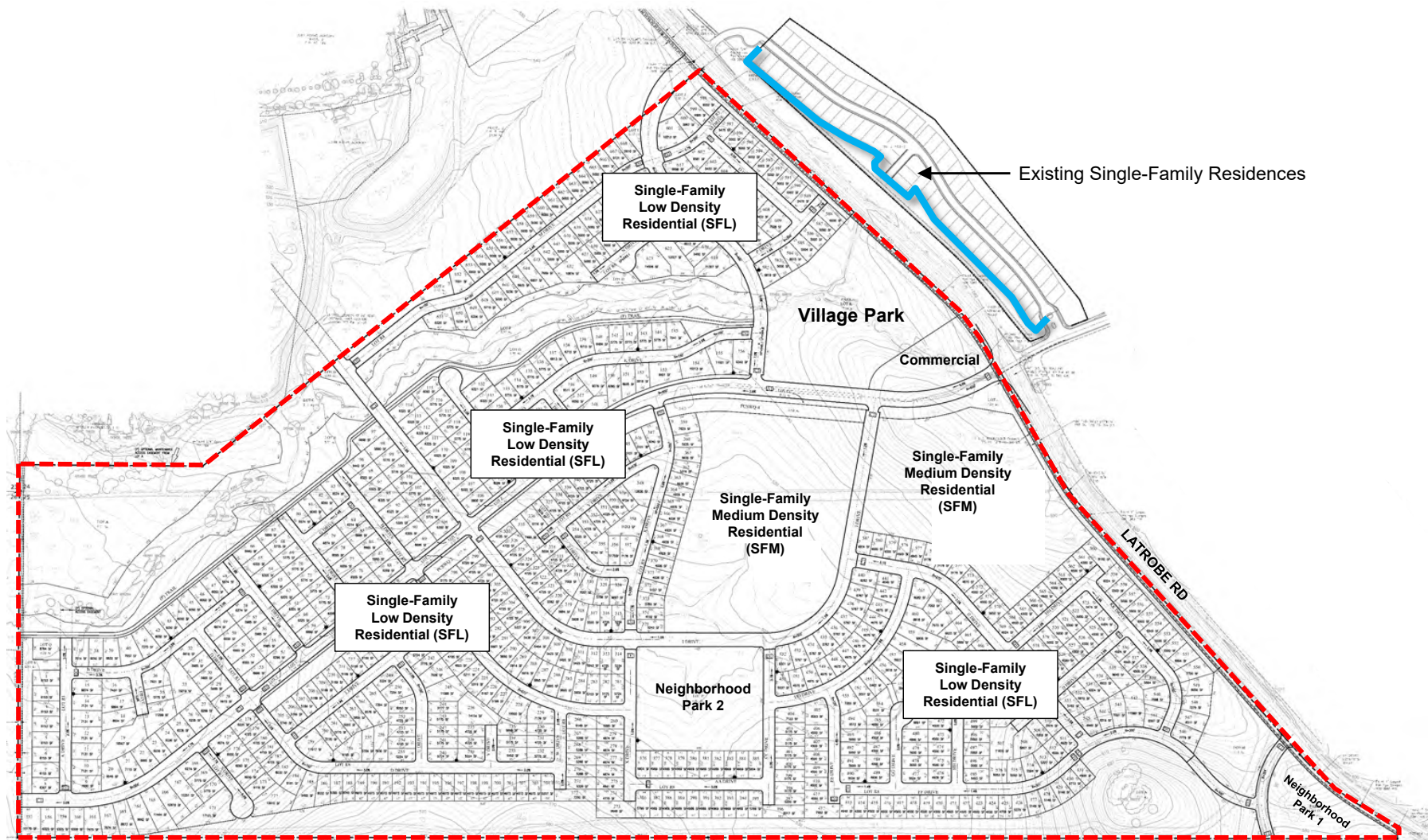
Creekside Village Residential Development  
El Dorado County, California

Project Area

Figure 1







Existing Single-Family Residences

Single-Family Low Density Residential (SFL)

Village Park

Commercial

Single-Family Low Density Residential (SFL)

Single-Family Medium Density Residential (SFM)

Single-Family Medium Density Residential (SFM)

Single-Family Low Density Residential (SFL)

LA TROBE RD

Neighborhood Park 2

Single-Family Low Density Residential (SFL)

Neighborhood Park 1

**Legend**

- Project Area Boundary
- Existing Solid Traffic Noise Barrier

Creekside Village Residential Development  
El Dorado County, California

Project Site Plan



Scale (Feet)

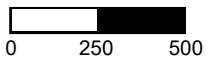
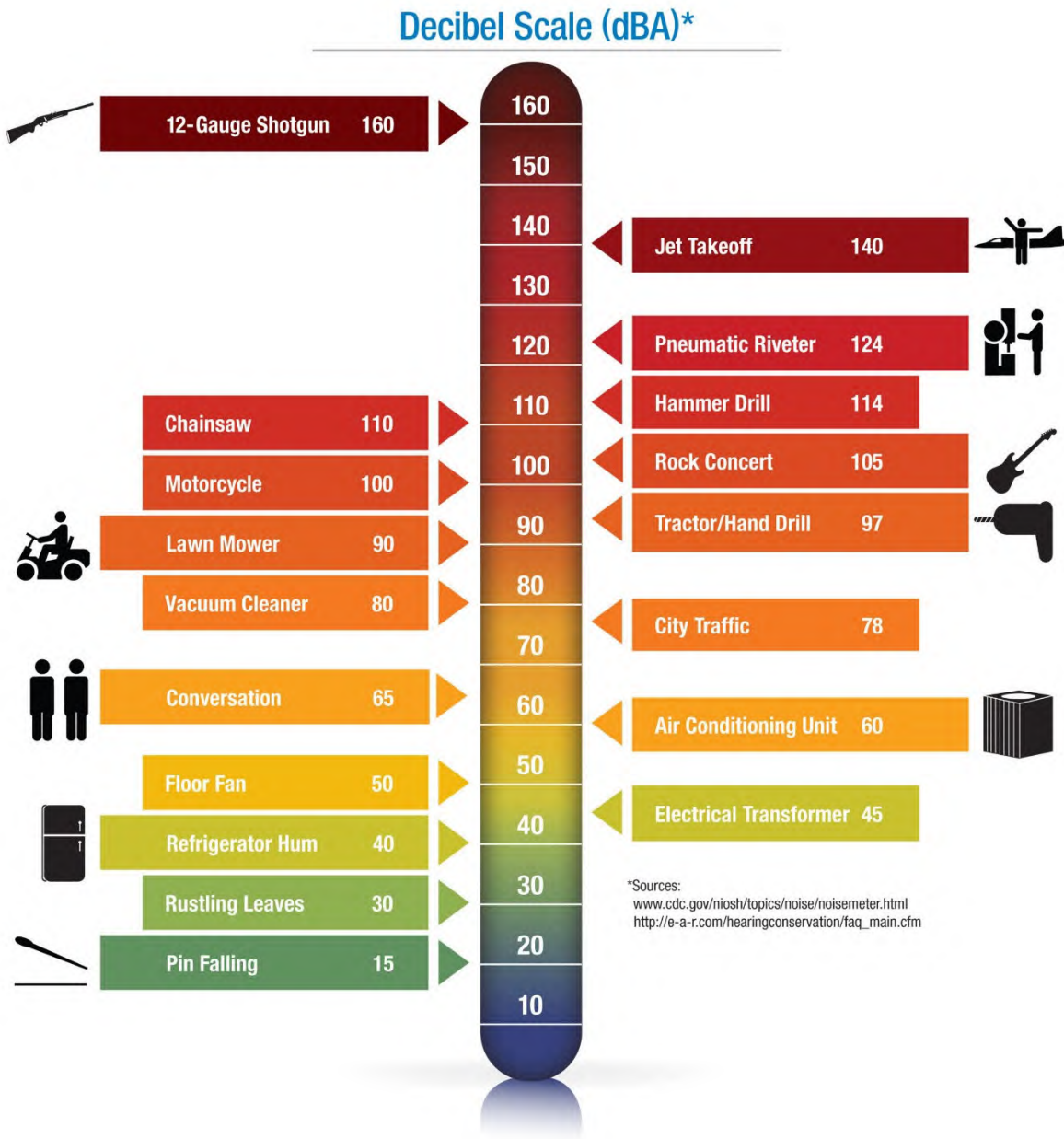


Figure 2





**Figure 3  
Noise Levels Associated with Common Noise Sources**





## Environmental Setting – Existing Ambient Noise and Vibration Environment

### Land Uses in the Project Vicinity

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the primary intended use of the land. Places where people live, sleep, recreate, worship, and study are generally considered to be sensitive to noise because intrusive noise can be disruptive to these activities. Existing noise-sensitive land uses within the project vicinity consist of residential uses to the east of the project across Latrobe Road, and a school use located northwest of the project area (John Adams Academy). Existing commercial / office uses are located to the north of the project site (El Dorado Hills Business Park), which are typically not considered to be noise-sensitive. The project area and surrounding land uses are shown in Figure 1.

### Existing Traffic Noise Levels along Project Area Roadway Network

To predict traffic noise levels along existing roadway networks with multiple segments, modelling is commonly used rather than monitoring. The FHWA Traffic Noise Model (FHWA-RD-77-108) was used to quantify existing traffic noise levels at the existing sensitive land uses nearest to the project area roadway network. The Model was also used to quantify the distances to the 60, 65 and 70 dB DNL traffic noise contours for these roadways. The FHWA Model predicts hourly average ( $L_{eq}$ ) values for free-flowing traffic conditions. Estimates of the hourly distribution of traffic for a typical 24-hour period were used to develop DNL values from  $L_{eq}$  values.

Existing (2023) traffic data in the form of AM and PM peak hour intersection turning movements were obtained from the traffic impact analysis prepared by the project transportation consultant (T. Kear Transportation Planning & Management). Those data were converted to Average Daily Traffic (ADT) segment volumes by applying a factor of 5 to the sum of AM and PM peak hour conditions. Other inputs were obtained from BAC observations and noise measurement data. The existing traffic noise levels at the distances representing the nearest noise-sensitive land uses to the project area roadways and distances from the centerlines of selected roadways to the 60 dB, 65 dB and 70 dB DNL contours are summarized in Table 1. Appendix B-1 contains the FHWA Model inputs for existing conditions.

**Table 1  
Existing (2023) Traffic Noise Levels at Nearest Receptors and Distances to DNL Contours**

#	Roadway	Segment Description	DNL at Nearest Sensitive Receptor	Distance to Contour (ft)		
				70 dB DNL	65 dB DNL	60 dB DNL
1	El Dorado Hills Blvd	North of Serrano Pkwy	68	82	176	380
2	El Dorado Hills Blvd	Serrano Pkwy to White Rock Rd	62	88	189	408
3	Latrobe Rd	White Rock Rd to Golden Foothill Pkwy	68	98	212	457
4	Latrobe Rd	Golden Foothill Pkwy to Investment Blvd	53	8	16	35
5	Latrobe Rd	Investment Blvd to Avanti Dr/Q Dr	51	13	29	62
6	Latrobe Rd	Avanti Dr/Q Dr to Project Commercial Entry	56	13	27	59
7	Latrobe Rd	Project Commercial Entry to Royal Oaks Dr	56	13	27	59
8	Latrobe Rd	Royal Oaks Dr to Wetsel Oviatt Rd	50	11	25	53
9	Latrobe Rd	Wetsel Oviatt Rd to S Shingle Rd	62	38	81	175
10	Latrobe Rd	South of S Shingle Rd	60	31	67	144
11	Lassen Ln	West of El Dorado Hills Blvd	54	9	18	40
12	Serrano Pkwy	East of El Dorado Hills Blvd	58	29	62	133
13	White Rock Rd	West of Latrobe Rd	58	17	37	81
14	White Rock Rd	East of Latrobe Rd	64	30	66	141
15	Golden Foothill Pkwy	West of Latrobe Rd	57	11	24	52
16	Clubview Dr	East of Latrobe Rd	52	5	10	22
17	Investment Blvd	Latrobe Rd to Robert J Mathews Pkwy	36	2	5	11
18	Investment Blvd	West of Robert J Mathews Pkwy	47	5	10	21
19	Project Q Dr	West of Latrobe Rd (within project area)	--	--	--	--
20	Avanti Dr	East of Latrobe Rd	37	1	1	3
21	Project Commercial Entry	West of Latrobe Rd (within project area)	--	--	--	--
22	Royal Oaks Dr	West of Latrobe Rd (within project area)	--	--	--	--
23	Royal Oaks Dr	East of Latrobe Rd	42	2	5	11
24	Wetsel Oviatt Rd	West of Latrobe Rd	19	1	2	4
25	S Shingle Rd	West of Latrobe Rd	46	4	9	19
26	S Shingle Rd	East of Latrobe Rd	54	15	32	69
27	Robert J Mathews Pkwy	Investment Blvd to Golden Foothill Pkwy	51	16	35	76
28	Robert J Mathews Pkwy	South of Investment Blvd	50	20	43	92
29	Palmdale Dr	South of Carson Crossing Dr	45	2	4	8
30	Carson Crossing Dr	Palmdale Dr to Four Seasons Dr	51	4	8	17
31	Carson Crossing Dr	Palmdale Dr to Golden Foothill Pkwy	51	4	8	18

Source: FHWA-RD-77-108, T. Kear Transportation Planning & Management, and BAC 2023.

### Existing Overall Ambient Noise Environment within the Project Vicinity

The existing ambient noise environment at the project site is defined primarily by noise from traffic on Latrobe Road, and to a lesser extent by activities within the El Dorado Business Park to the north. To generally quantify existing ambient noise environment within the project area, BAC conducted long-term (72-hour) ambient noise level measurements at four (4) locations from

October 3-5, 2020. The long-term noise survey locations are shown in Figure 1. Photographs of the noise survey locations are provided in Appendix C.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used to complete the noise level measurements. The meters were calibrated immediately before and after use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all specifications of the American National Standards Institute requirements for Type 1 sound level meters (ANSI S1.4).

The results of the long-term ambient noise survey are shown numerically and graphically in Appendices D and E (respectively) and are summarized in Table 2.

**Table 2**  
**Long-Term Noise Level Measurement Results – October 3-5, 2020<sup>1</sup>**

Site Description <sup>2</sup>	Date	DNL	Average Measured Hourly Noise Levels, dBA			
			Daytime <sup>3</sup>		Nighttime <sup>4</sup>	
			Leq	L <sub>max</sub>	Leq	L <sub>max</sub>
Site 1: Western project area boundary, approximately 800' from existing commercial / offices uses to north	10/3/20	52	45	59	46	54
	10/4/20	57	41	56	51	56
	10/5/20	50	44	60	43	50
Site 2: Northwest project area boundary, approximately 800' from existing commercial / office uses to north	10/3/20	53	50	68	46	63
	10/4/20	57	55	69	48	62
	10/5/20	54	54	69	45	61
Site 3: Northern project area boundary, approximately 50' from centerline of Latrobe Road	10/3/20	63	63	83	55	74
	10/4/20	61	60	80	52	74
	10/5/20	65	62	82	57	77
Site 4: Southeast project area boundary, approximately 200' from centerline of Latrobe Road	10/3/20	56	53	70	49	64
	10/4/20	54	51	68	47	65
	10/5/20	58	53	70	51	67

<sup>1</sup> Detailed summaries of the noise monitoring results are provided in Appendices D and E.  
<sup>2</sup> Long-term ambient noise monitoring locations are identified in Figure 1.  
<sup>3</sup> Daytime hours: 7:00 AM to 10:00 PM  
<sup>4</sup> Nighttime hours: 10:00 PM to 7:00 AM

Source: BAC 2020.

As shown in Table 2, average measured hourly noise levels were generally consistent at each individual site throughout the monitoring period. The Table 2 data also indicate that measured day-night average noise levels were highest at site 3, which was likely due to the proximity of the measurement location to Latrobe Road. The slightly elevated measured nighttime noise levels at Sites 1 and 2 are believed to have been caused by natural sounds (crickets, frogs, etc.).

### Existing Ambient Vibration Environment

During a site visit on October 2, 2020, vibration levels were below the threshold of perception at the project site. Nonetheless, to quantify existing vibration levels at the project site, BAC

conducted short-term (15-minute) vibration measurements at the four (4) locations identified in Figure 1. Photographs of the vibration survey locations are provided in Appendix C.

A Larson-Davis Laboratories Model LxT precision integrating sound level meter equipped with a vibration transducer was used to complete the measurements. The results are summarized below in Table 3.

**Table 3**  
**Summary of Ambient Vibration Monitoring Results – October 2, 2020**

Site Description	Time	Average Measured Vibration Level, PPV (in. sec) <sup>1</sup>
Site 1: Western project area boundary	12:06 p.m.	<0.001
Site 2: Northwest project area boundary	12:59 p.m.	<0.001
Site 3: Northern project area boundary	1:59 p.m.	<0.001
Site 4: Southeast project area boundary	2:29 p.m.	<0.001
<sup>1</sup> PPV = Peak Particle Velocity (inches/second)		

Source: BAC 2020.

The Table 3 data indicate that measured average vibration levels at the project area boundaries were less than 0.001 in/sec PPV.

## Regulatory Setting: Criteria for Acceptable Noise and Vibration Exposure

### Federal

There are no federal noise or vibration criteria which would be directly applicable to this project.

### State of California

#### California Environmental Quality Act (CEQA)

The State of California has established regulatory criteria that are applicable to this assessment. Specifically, Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. According to Appendix G of the CEQA guidelines, the project would result in a significant noise or vibration impact if the following occur:

- A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or other applicable standards of other agencies.
- B. Generation of 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.

It should be noted that audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered significant according to CEQA. Because every physical process creates noise, the use of audibility alone as significance criteria would be unworkable. CEQA requires a substantial increase in noise levels before noise impacts are identified, not simply an audible change.

California Department of Transportation (Caltrans)

El Dorado County does not currently have adopted standards for groundborne vibration. As a result, the vibration impact criteria developed by the California Department of Transportation (Caltrans) was applied to the project. The Caltrans criteria applicable to damage and annoyance from transient and continuous vibration typically associated with construction activities are presented in Tables 4 and 5. Equipment or activities typical of continuous vibration include: excavation equipment, static compaction equipment, tracked vehicles, traffic on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include impact pile drivers, blasting, drop balls, “pogo stick” compactors, and crack-and-seat equipment (California Department of Transportation 2013).

**Table 4  
Guideline Vibration Damage Potential Threshold Criteria**

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment. PPV = Peak Particle Velocity		

Source: 2020 Caltrans Transportation and Construction Vibration Guidance Manual, Table 13.

**Table 5  
Guideline Vibration Annoyance Potential Criteria**

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.40	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Severe	2.0	0.4
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment. PPV = Peak Particle Velocity		

Source: 2020 Caltrans Transportation and Construction Vibration Guidance Manual, Table 20.

## Local

### El Dorado County General Plan

The Public Health, Safety, and Noise Element of the El Dorado County General Plan contains the County’s noise-related policies. The specific policies which are generally applicable to this project are reproduced below:

- Policy 6.5.1.1** Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 6 (General Plan Table 6-1) or the performance standards of Table 7 (General Plan Table 6-2), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.
- Policy 6.5.1.2** Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 7 at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design
- Policy 6.5.1.3** Where noise mitigation measures are required to achieve the standards of Tables 6 and Table 7, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

- Policy 6.5.1.7** Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 7 for noise-sensitive uses.
- Policy 6.5.1.8** New development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6.
- Policy 6.5.1.9** Noise created by new transportation noise sources, excluding airport expansion but including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 6 at existing noise-sensitive land uses.
- Policy 6.5.1.11** The standards outlined in Tables 8, 9 and 10 (General Plan Tables 6-3, 6-4, 6-5) shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends, and on federally-recognized holidays. Further, the standards outlined in Tables 8 through 10 shall not apply to public projects to alleviate traffic congestion and safety hazards.
- Policy 6.5.1.12** When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration:
- a) Where existing or projected future traffic noise levels are less than 60 dB DNL at the outdoor activity areas of residential uses, an increase of more than 5 dBA DNL caused by a new transportation noise source will be considered significant.
  - b) Where existing or projected future traffic noise levels range between 60 and 65 dBA DNL at the outdoor activity areas of residential uses, an increase of more than 3 dBA DNL caused by a new transportation noise source will be considered significant; and
  - c) Where existing or projected future traffic noise levels are greater than 65 dBA DNL at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA DNL caused by a new transportation noise source will be considered significant.
- Policy 6.5.1.13** When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration:

- a) In areas in which ambient noise levels are in accordance with the standards in Table 7, increases in ambient noise levels caused by new non-transportation noise sources that exceed 5 dBA shall be considered significant; and
- b) In areas in which ambient noise levels are not in accordance with the standards in Table 7, increases in ambient noise levels caused by new non-transportation noise sources that exceed 3 dBA shall be considered significant.

**Table 6  
Maximum Allowable Noise Exposure for Transportation Noise Sources**

Land Use	Outdoor Activity Areas <sup>1</sup> DNL/CNEL, dB	Interior Spaces	
		DNL/CNEL, dB	L <sub>eq</sub> , dB <sup>2</sup>
Residential	60 <sup>3</sup>	45	--
Transient Lodging	60 <sup>3</sup>	45	--
Hospitals, Nursing Homes	60 <sup>3</sup>	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60 <sup>3</sup>	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

<sup>1</sup> In Community Regions and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB DNL shall be applied at the building facade, in addition to a 60 dB DNL criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB DNL shall be applied at a 100-foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB DNL may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.

<sup>2</sup> As determined for a typical worst-case hour during periods of use.

<sup>3</sup> Where it is not possible to reduce noise in outdoor activity areas to 60 dB DNL/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB DNL/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: El Dorado County General Plan, Public Health & Safety Element, Table 6-1

**Table 7  
Noise Level Performance Protection Standards for Noise-Sensitive Land Uses  
Affected by Non-Transportation Sources**

Noise Level Descriptor	Daytime 7 am – 7 pm		Evening 7 pm – 10 pm		Nighttime 10 pm – 7 am	
	Community	Rural	Community	Rural	Community	Rural
	Hourly, $L_{eq}$	55	50	50	45	45
Maximum, $L_{max}$	70	60	60	55	55	50

-Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).  
 -The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.  
 -In Community Regions the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise-sensitive land use as defined in Objective 6.5.1.

Source: El Dorado County General Plan, Public Health & Safety Element, Table 6-2.

**Table 8  
Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in  
Community Regions and Adopted Plan Areas – Construction Noise**

Land Use Designation <sup>1</sup>	Time Period	Noise Level (dB)	
		$L_{eq}$	$L_{max}$
Higher-Density Residential (MFR, HDR, MDR)	7 am – 7 pm	55	75
	7 pm – 10 pm	50	65
	10 pm – 7 am	45	60
Commercial and Public Facilities (C, R&D, PF)	7 am – 7 pm	70	90
	10 pm – 7 am	65	75
Industrial (I)	Any Time	80	90

<sup>1</sup> Adopted Plan areas should refer to those land use designations that most closely correspond to the similar General Plan land use designations for similar development.

Source: El Dorado County General Plan, Public Health & Safety Element, Table 6-3.

**Table 9  
Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in  
Rural Centers – Construction Noise**

Land Use Designation	Time Period	Noise Level (dB)	
		Leq	Lmax
All Residential (MFR, HDR, MDR)	7 am – 7 pm	55	75
	7 pm – 10 pm	50	65
	10 pm – 7 am	40	55
Commercial and Public Facilities (C, TR, PF)	7 am – 7 pm	65	75
	10 pm – 7 am	60	70
Industrial (I)	Any Time	70	80
Open Space (OS)	7 am – 7 pm	55	75
	7 pm – 10 pm	50	65

Source: El Dorado County General Plan, Public Health & Safety Element, Table 6-4

**Table 10  
Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in  
Rural Regions and Adopted Plan Areas – Construction Noise**

Land Use Designation	Time Period	Noise Level (dB)	
		Leq	Lmax
All Residential (LDR)	7 am – 7 pm	50	60
	7 pm – 10 pm	45	55
	10 pm – 7 am	40	50
Commercial and Public Facilities (C, TR, PF)	7 am – 7 pm	65	75
	10 pm – 7 am	60	70
Industrial (I)	Any Time	70	80
Rural Land, Natural Resources, Open Space, Agricultural Lands (RR, NR, OS, AL)	7 am – 7 pm	65	75
	7 pm – 10 pm	60	70

Source: El Dorado County General Plan, Public Health & Safety Element, Table 6-5.

According to Figure LU-1 of the El Dorado County General Plan (Land Use Diagram), the project property and adjacent properties are located within a community region of the county. As a result, the noise level limits and associated criteria applicable to community regions identified in Tables 6-8 would be applicable to the project.

El Dorado County Municipal Code

The provisions of the El Dorado County Municipal Code which would be most applicable to this project are reproduced below.

**130.37.020 Exemptions**

The following noise sources shall be exempt from the standards of this Chapter:

- A. Activities conducted in public parks, public playgrounds, and public or private school grounds, including but not limited to school athletic and school entertainment events, providing an amplified sound system is not required or used.
- B. The use of any mechanical device, apparatus, or equipment related to or connected with emergency activities or emergency work to protect life or property.
- C. Safety signals, warning devices, and emergency pressure relief valves properly operated and in good working order.
- D. Noise sources associated with property maintenance, such as lawn mowers, trimmers, snow blowers, power tools in good working order, and cutting of firewood for non-commercial personal use, provided that the activities take place between the hours of eight a.m. and nine p.m. on weekdays and nine a.m. to nine p.m. on weekends and federal holidays.
- E. Noise sources associated with agricultural uses listed in Section 130.21.020 (Agricultural Zones: Matrix of Allowed Uses) in Article 2 (Zones, Allowed Uses, and Zoning Standards) of this Title that are performed consistent with the standards and practices of the agricultural industry.
- F. Noise sources associated with work performed by public or private utilities in the maintenance or modification of its facilities.
- G. Noise sources associated with public holidays, or other commonly celebrated occasions.
- H. Traffic on public roadways, railroad line operations, aircraft in flight, and any other activity where regulation thereof has been preempted by state or federal law.
- I. Construction (e.g., construction, alteration or repair activities) during daylight hours provided that all construction equipment shall be fitted with factory installed muffling devices and maintained in good working order.

**130.37.060 Noise Standards.**

The following standards shall apply to all development projects for which an acoustic analysis is required:

- A. Noise sensitive land uses affected by non-transportation noise sources shall not exceed standards set forth in Table 11 (MC Table 130.37.060.1) provided below:

**Table 11  
Noise Level Performance Standards for Noise-Sensitive Land Uses Affected by  
Non-Transportation Sources**

Noise Level Descriptor	Daytime (7am – 7pm)		Evening (7pm – 10pm)		Nighttime (10pm – 7am)	
	Community	Rural	Community	Rural	Community	Rural
Hourly Leq, dB	55	50	50	45	45	40
Maximum level (L <sub>max</sub> ), dB	70	60	60	55	55	50

Source: El Dorado County Municipal Code, Section 130.37.060.

1. Each of the noise levels specified above shall be lowered by five dBA for simple tone noises, noises consisting primarily of unamplified speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses, such as caretaker dwellings.
  2. The Director can impose noise level standards which are up to five dBA less than those specified above, based upon a -determination of existing low ambient noise levels in the vicinity of the project site.
  3. The exterior noise level standard shall be applied as follows:
    - a. In Community Regions, at the property line of the receiving property;
    - b. In Rural Centers and Regions, at a point 100 feet away from a sensitive receptor or, if the sensitive receptor is within the Platted Lands Overlay (-PL) where the underlying land use designation is consistent with Community Region densities, at the property line of the receiving property or 100 feet away from the sensitive receptor, whichever is less; or
    - c. In all areas, at the boundary of a recorded noise easement between affected properties
- B. Transportation noise shall not exceed thresholds set forth in Table 12 (MC Table 130.37.060.2) provided below:

**Table 12**  
**Noise Level Standards for Noise-Sensitive Land Uses Affected by**  
**Transportation Noise Sources**

Land Use	Outdoor Activity Areas <sup>1</sup> DNL/CNEL, dB	Interior Spaces	
		DNL/CNEL, dB	Leq, dB
Residential	60	45	--
Transient Lodging	60	45	--
Hospitals, Nursing Homes	60	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Source: El Dorado County Municipal Code, Section 130.37.060.2.

1. In Community Regions and Rural Centers:
  - a. Where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied at the property line of the sensitive receptor.
  - b. For residential uses with front yards facing the identified noise source, an exterior noise level threshold of 65 dBA DNL shall be applied at the dwelling facade in addition to the required threshold at the outdoor activity area.

2. In Rural Regions: An exterior noise level threshold of 60 dBA DNL shall be applied at a 100-foot radius from the dwelling on lots five acres and larger. Those lots less than five acres shall have the noise level standards applied at the property line.
  3. Where it is not possible to reduce noise levels in those outdoor activity areas limited to 60 dBA DNL/CNEL thresholds using a practical application of the best-available noise reduction measures, an exterior noise threshold of up to 65 dBA DNL/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
- C. Construction-related noise shall allow for exceptions to the evening and nighttime standards or other temporary exceedances of noise standards as may be approved by the Director, where necessary to alleviate traffic congestion and safety hazards, or where authorized by an approved permit.

## Impacts and Mitigation Measures

### Thresholds of Significance

For the purposes of this assessment, a noise and vibration impact is considered significant if the project would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or other applicable standards of other agencies; or
- Generation of excessive groundborne vibration or groundborne noise levels; or
- 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 not within the vicinity of a private airstrip, an airport land use plan, or within two miles of a public airport. Therefore, the last threshold listed above is not discussed further.

The following criteria based on standards established by the California Department of Transportation (Caltrans) and El Dorado County General Plan were used to evaluate the significance of environmental noise and vibration resulting from the project:

- A significant noise impact would be identified if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the El Dorado County General Plan or El Dorado County Municipal Code.
- A significant impact would be identified if off-site traffic noise exposure or on-site activities generated by the project would substantially increase noise levels at existing sensitive receptors in the vicinity. A substantial increase would be identified relative to the noise level increase significance criteria established in Policies 6.5.1.12 (transportation noise

sources) and 6.5.1.13 (non-transportation noise sources) of the El Dorado County General Plan.

- A significant impact would be identified if project construction activities or proposed on-site operations would expose noise-sensitive receptors to excessive groundborne vibration levels. Specifically, an impact would be identified if groundborne vibration levels due to these sources would exceed the Caltrans vibration impact criteria.

### **Noise Impacts Associated with Project-Generated Increases in Off-Site Traffic**

With development of the project, traffic volumes on the local roadway network will increase. Those increases in daily traffic volumes will result in a corresponding increase in traffic noise levels at existing uses located along those roadways. Impacts 1 & 2 evaluate increases in off-site traffic noise levels which would result from the project.

#### **Impact 1: Increases in Existing Traffic Noise Levels due to the Project**

The FHWA Traffic Noise Model (FHWA-RD-77-108) was used to quantify increases in existing traffic noise levels at the existing sensitive land uses nearest to the project area roadway network. The FHWA Model predicts hourly  $L_{eq}$  values for free-flowing traffic conditions. Estimates of the hourly distribution of traffic for a typical 24-hour period were used to develop DNL values from  $L_{eq}$  values.

Traffic data in the form of peak hour intersection turning movements were obtained from the traffic impact analysis prepared by the project transportation consultant (T. Kear Transportation Planning & Management, Inc.). Those data were converted to Average Daily Traffic (ADT) segment volumes by applying a factor of 5 to the sum of AM and PM peak hour conditions. Other inputs were obtained from BAC observations and noise measurement data. Appendices B-1 and B-2 contain the FHWA Model inputs for existing and existing plus project conditions, respectively. The existing and existing plus project traffic noise levels at the distances representing the nearest noise-sensitive land uses to the project area roadways are summarized in Table 13. Table 13 also shows the thresholds for determination of a significant traffic noise increase, whether the roadway segment contains sensitive uses, and whether or not significant noise impacts are identified for each segment.

It should be noted that the FHWA Model predictions presented in Table 13 are based on inputs that include weekday peak hour traffic volumes, day/night, and truck type percentages (e.g., medium and heavy trucks), vehicle speed, and distance from roadway centerlines. The FHWA Model does not account for non-traffic ambient noise sources such as nearby wildlife (e.g., birds chipping) or other anthropogenic noise sources within an area (e.g., distant traffic from other roadways, recreational activities, commercial or industrial operations, etc.).

**Table 13**  
**Predicted Traffic Noise Level Increases at Existing Noise-Sensitive Receptors – Existing (2023) vs. Existing (2023) Plus Project Conditions**

#	Roadway	Segment Description	Predicted DNL (dB)			Significance Threshold <sup>1</sup>	Threshold Exceeded?	Sensitive Receptors Present? <sup>2</sup>	Significant Impact Identified? <sup>3</sup>
			E	E+P	Increase				
1	El Dorado Hills Blvd	North of Serrano Pkwy	67.8	67.9	0.1	1.5	No	Yes-Residence	No
2	El Dorado Hills Blvd	Serrano Pkwy to White Rock Rd	62.0	62.4	0.4	3.0	No	Yes-Residence	No
3	Latrobe Rd	White Rock Rd to Golden Foothill Pkwy	68.4	69.0	0.6	1.5	No	Yes-Residence	No
4	Latrobe Rd	Golden Foothill Pkwy to Investment Blvd	52.6	54.7	2.1	5.0	No	Yes-Residence	No
5	Latrobe Rd	Investment Blvd to Avanti Dr/Q Dr	50.9	53.6	2.7	5.0	No	Yes-Residence	No
6	Latrobe Rd	Avanti Dr/Q Dr to Project Commercial Entry	55.7	58.5	2.8	5.0	No	Yes-Residence	No
7	Latrobe Rd	Project Commercial Entry to Royal Oaks Dr	56.3	58.9	2.6	5.0	No	Yes-Residence	No
8	Latrobe Rd	Royal Oaks Dr to Wetsel Oviatt Rd	49.7	50.6	1.0	5.0	No	Yes-Residence	No
9	Latrobe Rd	Wetsel Oviatt Rd to S Shingle Rd	61.9	62.5	0.5	3.0	No	Yes-Residence	No
10	Latrobe Rd	South of S Shingle Rd	59.7	59.9	0.2	5.0	No	Yes-Residence	No
11	Lassen Ln	West of El Dorado Hills Blvd	53.7	53.7	0.0	5.0	No	Yes-Residence	No
12	Serrano Pkwy	East of El Dorado Hills Blvd	58.4	58.4	0.0	5.0	No	Yes-Residence	No
13	White Rock Rd	West of Latrobe Rd	58.3	58.2	0.0	5.0	No	Yes-Residence	No
14	White Rock Rd	East of Latrobe Rd	64.1	64.4	0.3	3.0	No	Yes-Residence	No
15	Golden Foothill Pkwy	West of Latrobe Rd	56.8	57.3	0.5	5.0	No	Yes-Residence	No
16	Clubview Dr	East of Latrobe Rd	52.0	52.4	0.4	5.0	No	Yes-Residence	No
17	Investment Blvd	Latrobe Rd to Robert J Mathews Pkwy	36.1	36.2	0.1	5.0	No	Yes-Residence	No
18	Investment Blvd	West of Robert J Mathews Pkwy	47.3	47.3	0.0	5.0	No	Yes-Church	No
19	Project Q Dr	West of Latrobe Rd (within project area)	56.0 <sup>4</sup>	31.3	-24.7	5.0	No	Yes-Residence	No
20	Avanti Dr	East of Latrobe Rd	36.7	36.7	0.0	5.0	No	Yes-Residence	No
21	Project Commercial Entry	West of Latrobe Rd (within project area)	56.0 <sup>4</sup>	29.0	-27.0	5.0	No	Yes-Residence	No
22	Royal Oaks Dr	West of Latrobe Rd (within project area)	56.0 <sup>4</sup>	45.5	-10.5	5.0	No	Yes-Residence	No
23	Royal Oaks Dr	East of Latrobe Rd	42.1	42.2	0.1	5.0	No	Yes-Residence	No
24	Wetsel Oviatt Rd	West of Latrobe Rd	19.4	22.1	2.7	5.0	No	Yes-Residence	No
25	S Shingle Rd	West of Latrobe Rd	45.5	46.4	0.9	5.0	No	Yes-Residence	No
26	S Shingle Rd	East of Latrobe Rd	53.9	54.4	0.5	5.0	No	Yes-Residence	No
27	Robert J Mathews Pkwy	Investment Blvd to Golden Foothill Pkwy	51.4	51.5	0.1	5.0	No	Yes-Church	No
28	Robert J Mathews Pkwy	South of Investment Blvd	50.2	50.2	0.0	5.0	No	Yes-School	No
29	Palmdale Dr	South of Carson Crossing Dr	45.4	45.4	0.0	5.0	No	Yes-Residence	No
30	Carson Crossing Dr	Palmdale Dr to Four Seasons Dr	50.6	52.7	2.1	5.0	No	Yes-Residence	No
31	Carson Crossing Dr	Palmdale Dr to Golden Foothill Pkwy	51.1	53.0	1.9	5.0	No	Yes-Residence	No

<sup>1</sup> Significance thresholds established in General Plan Policy 6.5.1.12.  
<sup>2</sup> Sensitive receptors identified as existing residential, school or church uses.  
<sup>3</sup> A significant impact is identified only along segments where the project-related traffic noise level increase would exceed threshold AND where sensitive receptors are present along the roadway segment.  
<sup>4</sup> Project traffic study did not contain data for segments 19, 21 and 22, which are access points to the project property (located within the project area). For the purposes of this analysis, the measured ambient DNL at BAC site 4 was utilized, which is believed to be representative of the existing ambient noise level environment along those roadway segments.

Source: FHWA-RD-77-108 with inputs from T. Kear Transportation Planning & Management. Appendices B-1 & B-2 contain FHWA Model inputs.

Based on the analyses presented in Table 13, project-generated traffic noise level increases would not result in significant noise impacts at existing noise-sensitive receptors located along the project area roadway network relative to the increase significance criteria contained in Policy 6.5.1.12 of the El Dorado County General Plan. As a result, this impact is identified as being ***less than significant***.

**Impact 2: Increases in Cumulative Traffic Noise Levels due to the Project**

The FHWA Traffic Noise Model (FHWA-RD-77-108) was used within inputs obtained from the traffic impact analysis prepared by the project transportation consultant (T. Kear Transportation Planning & Management, Inc.) to quantify increases in future (cumulative) traffic noise levels at the nearest existing noise-sensitive land uses to the project area roadway network. This analysis first assesses whether a cumulative roadway noise impact would occur by comparing the cumulative with project conditions to existing conditions, which is presented in Table 14. If a cumulative roadway noise impact is identified, it is further evaluated to assess whether the proposed project would make a cumulatively considerable contribution to the cumulative impact. This process is completed through a comparison of the roadway noise associated with the cumulative with project scenario against the cumulative no-project scenario, which is shown in Table 15. Appendices B-3 and B-4 contain the FHWA Model inputs for cumulative and cumulative plus project conditions, respectively.

**Table 14**  
**Predicted Traffic Noise Level Increases at Existing Noise-Sensitive Receptors – Existing (2023) vs. Cumulative (2040) Plus Project Conditions**

#	Roadway	Segment Description	Predicted DNL (dB)			Significance Threshold <sup>1</sup>	Threshold Exceeded?	Sensitive Receptors Present? <sup>2</sup>	Significant Impact Identified? <sup>3</sup>
			E	C+P	Increase				
1	El Dorado Hills Blvd	North of Serrano Pkwy	67.8	68.2	0.4	1.5	No	Yes-Residence	No
2	El Dorado Hills Blvd	Serrano Pkwy to White Rock Rd	62.0	62.8	0.8	3.0	No	Yes-Residence	No
3	Latrobe Rd	White Rock Rd to Golden Foothill Pkwy	68.4	69.9	1.4	1.5	No	Yes-Residence	No
4	Latrobe Rd	Golden Foothill Pkwy to Investment Blvd	52.6	55.2	2.5	5.0	No	Yes-Residence	No
5	Latrobe Rd	Investment Blvd to Avanti Dr/Q Dr	50.9	53.9	3.0	5.0	No	Yes-Residence	No
6	Latrobe Rd	Avanti Dr/Q Dr to Project Commercial Entry	55.7	58.7	3.1	5.0	No	Yes-Residence	No
7	Latrobe Rd	Project Commercial Entry to Royal Oaks Dr	56.3	59.2	2.9	5.0	No	Yes-Residence	No
8	Latrobe Rd	Royal Oaks Dr to Wetsel Oviatt Rd	49.7	50.8	1.1	5.0	No	Yes-Residence	No
9	Latrobe Rd	Wetsel Oviatt Rd to S Shingle Rd	61.9	62.7	0.8	3.0	No	Yes-Residence	No
10	Latrobe Rd	South of S Shingle Rd	59.7	59.7	0.0	5.0	No	Yes-Residence	Yes
11	Lassen Ln	West of El Dorado Hills Blvd	53.7	55.2	1.5	5.0	No	Yes-Residence	No
12	Serrano Pkwy	East of El Dorado Hills Blvd	58.4	58.7	0.3	5.0	No	Yes-Residence	No
13	White Rock Rd	West of Latrobe Rd	58.3	59.7	1.4	5.0	No	Yes-Residence	No
14	White Rock Rd	East of Latrobe Rd	64.1	66.1	2.0	3.0	No	Yes-Residence	No
15	Golden Foothill Pkwy	West of Latrobe Rd	56.8	58.4	1.6	5.0	No	Yes-Residence	No
16	Clubview Dr	East of Latrobe Rd	52.0	54.5	2.5	5.0	No	Yes-Residence	No
17	Investment Blvd	Latrobe Rd to Robert J Mathews Pkwy	36.1	37.7	1.7	5.0	No	Yes-Residence	No
18	Investment Blvd	West of Robert J Mathews Pkwy	47.3	49.5	2.2	5.0	No	Yes-Church	No
19	Project Q Dr	West of Latrobe Rd (within project area)	56.0 <sup>4</sup>	30.2	-25.8	5.0	No	Yes-Residence	No
20	Avanti Dr	East of Latrobe Rd	36.7	36.7	0.0	5.0	No	Yes-Residence	No
21	Project Commercial Entry	West of Latrobe Rd (within project area)	56.0 <sup>4</sup>	28.5	-27.5	5.0	No	Yes-Residence	No
22	Royal Oaks Dr	West of Latrobe Rd (within project area)	56.0 <sup>4</sup>	45.2	-10.8	5.0	No	Yes-Residence	No
23	Royal Oaks Dr	East of Latrobe Rd	42.1	43.8	1.8	5.0	No	Yes-Residence	No
24	Wetsel Oviatt Rd	West of Latrobe Rd	19.4	22.1	2.7	5.0	No	Yes-Residence	No
25	S Shingle Rd	West of Latrobe Rd	45.5	47.1	1.6	5.0	No	Yes-Residence	No
26	S Shingle Rd	East of Latrobe Rd	53.9	54.8	0.9	5.0	No	Yes-Residence	No
27	Robert J Mathews Pkwy	Investment Blvd to Golden Foothill Pkwy	51.4	53.5	2.1	5.0	No	Yes-Church	No
28	Robert J Mathews Pkwy	South of Investment Blvd	50.2	50.8	0.6	5.0	No	Yes-School	No
29	Palmdale Dr	South of Carson Crossing Dr	45.4	52.0	6.7	5.0	Yes	Yes-Residence	Yes
30	Carson Crossing Dr	Palmdale Dr to Four Seasons Dr	50.6	54.6	4.0	5.0	No	Yes-Residence	No
31	Carson Crossing Dr	Palmdale Dr to Golden Foothill Pkwy	51.1	55.2	4.1	5.0	No	Yes-Residence	No

<sup>1</sup> Significance thresholds established in General Plan Policy 6.5.1.12.  
<sup>2</sup> Sensitive receptors identified as existing residential, school or church uses.  
<sup>3</sup> A significant impact is identified only along segments where the project-related traffic noise level increase would exceed threshold AND where sensitive receptors are present along the roadway segment.  
<sup>4</sup> Project traffic study did not contain data for segments 19, 21 and 22, which are access points to the project property (located within the project area). For the purposes of this analysis, the measured ambient DNL at BAC site 4 was utilized, which is believed to be representative of the existing ambient noise level environment along those roadway segments.

Source: FHWA-RD-77-108 with inputs from T. Kear Transportation Planning & Management. Appendices B-1 & B-4 contain FHWA Model inputs.

**Table 15**  
**Predicted Traffic Noise Level Increases at Existing Noise-Sensitive Receptors – Cumulative (2040) vs. Cumulative (2040) Plus Project Conditions**

#	Roadway	Segment Description	Predicted DNL (dB)			Significance Threshold <sup>1</sup>	Threshold Exceeded?	Sensitive Receptors Present? <sup>2</sup>	Significant Impact Identified? <sup>3</sup>
			C	C+P	Increase				
29	Palmdale Dr	South of Carson Crossing Dr	52.0	52.0	0.0	5.0	No	Yes-Residence	No

<sup>1</sup> Significance thresholds established in General Plan Policy 6.5.1.12.  
<sup>2</sup> Sensitive receptors identified as existing residential, school or church uses.  
<sup>3</sup> A significant impact is identified only along segments where the project-related traffic noise level increase would exceed threshold AND where sensitive receptors are present along the roadway segment.

Source: FHWA-RD-77-108 with inputs from T. Kear Transportation Planning & Management. Appendices B-3 & B-4 contain FHWA Model inputs.

As indicated in Table 14, project-generated traffic is calculated to exceed the applicable General Plan Policy 6.5.1.12 impact significance criterion along one roadway segment containing a noise-sensitive receptor (segment 29). However, the project-generated increase along that roadway segment is not calculated to have a cumulatively considerable contribution to the cumulative impact relative to the General Plan Policy 6.5.1.12 criterion (Table 15).

Based on the analyses presented in Tables 14 and 15, project-generated traffic noise level increases would not result in significant noise impacts at existing noise-sensitive receptors located along the project area roadway network relative to the increase significance criteria contained in Policy 6.5.1.12 of the El Dorado County General Plan. As a result, this impact is identified as being ***less than significant***.

### **Impact 3: Increases in Project-Generated Traffic Noise Levels at Existing Schools**

As mentioned previously, traffic volumes on the local roadway network will increase with development of the project. Those increases in daily traffic volumes will result in a corresponding increase in traffic noise levels at existing uses located along those roadways – which would include schools.

Existing and cumulative increases in off-site traffic noise levels which would result from the project were evaluated in **Impacts 1 and 2**. As indicated in Table 13, existing plus project increases in traffic noise levels at the outdoor area/playground of the nearest existing school along the project roadway network (John Hancock Academy, roadway segment 28) were calculated to be less than 0.1 dB DNL. In addition, Table 14 data indicates that cumulative plus project increases in traffic noise levels at the outdoor area/playground of the closest existing school within project roadway network (John Hancock Academy, roadway segment 28) were calculated to be 0.6 dB DNL. The threshold of perception of the human ear is approximately 3 to 5 dB – a 5 dB change is considered to be clearly noticeable. Further, when considering a doubling of traffic volumes, which is unlikely to occur within the local roadway network, would result in a logarithmic increase of 3 dB. The calculated range of project-generated increases in ambient noise levels at the closest schools within the project roadway network (0.1 dB DNL to 0.6 dB DNL) would be well below the threshold of human perception.

Based on the analysis provided in this report and the information above, project-generated increases in traffic noise levels are not expected to result in significant increases in ambient noise levels at existing outdoor areas of schools within the local roadway network (Latrobe School District). As a result, this impact is identified as being ***less than significant***.

### **Off-Site Noise Impacts Associated with Proposed On-Site Activities**

The proposed project consists of approximately 918 dwelling units, one village and two neighborhood parks, approximately 46-acres of open space, and a 1.8-acre commercial component. The primary noise sources associated with proposed uses of the development have been identified as park and commercial activities. An assessment of project-related park and commercial activity noise levels at the nearest existing noise-sensitive uses follows.

Section 130.37.020 of the El Dorado County Municipal Code provides an exemption for noise from activities conducted in parks, such as those proposed by the project. As a result, an impact discussion for project park noise at existing noise-sensitive uses relative to Municipal Code noise level criteria is not included in this assessment. Rather, this assessment provides an analysis of project park noise at existing off-site uses relative to the applicable El Dorado County General Plan noise level limits.

**Impact 4: Park Activity Noise at Nearest Existing Noise-Sensitive Uses**

According to the project site plans, the project proposes three (3) parks. Specifically, the project proposes one large Village Park and two smaller Neighborhood Parks. The locations of the proposed parks are shown in Figure 2.

Noise generated by parks vary depending on whether the parks are intended for passive or active use. Passive use includes picnic and sitting areas whereas active use includes playing fields and play structures. Based on information contained in the Public Facilities and Services Chapter of the Creekside Village Specific Plan, the proposed Village and Neighborhood Parks will have both passive and active uses. According to BAC file data, parks consisting of active uses (playing fields / playgrounds) have noise levels of approximately 60 dB  $L_{eq}$  and 70 dB  $L_{max}$  at a distance of 50 feet.

The nearest existing noise-sensitive uses to a proposed park have been identified as residences constructed along Latrobe Road east of the development (adjacent to the Village Park, identified in Figure 2). Based on the reference noise levels presented above, and assuming standard spherical spreading loss (-6 dB per doubling of distance), park activity noise exposure at the nearest existing noise-sensitive uses was calculated. The results of those calculations are provided in Table 16.

Because park activities would likely consist of human speech (i.e., shouting and cheering during activities), noise associated with park activities would be subject to the El Dorado County General Plan's more restrictive daytime, evening, and nighttime noise level standards for community regions shown in Table 7 (the criteria contain a 5 dB penalty for noise consisting primarily of speech). However, it is reasonable to assume that park hours would be likely be restricted to daytime and evening hours only (7:00 a.m. to 10:00 p.m.). Satisfaction with the General Plan's more restrictive evening noise level standards would ensure for compliance with the General Plan's less restrictive daytime noise level limits. Therefore, project park noise exposure at the nearest existing noise-sensitive uses was assessed relative to the applicable General Plan evening noise level standards for community regions shown in Table 7.

**Table 16  
Predicted Park Activity Noise Levels at Nearest Existing Noise-Sensitive Uses**

Receiver <sup>1</sup>	Nearest Park <sup>2</sup>	Distance (ft) <sup>3</sup>	Predicted Noise Levels (dB) <sup>4</sup>		County Evening Noise Standards (dB)	
			Leq	Lmax	Leq	Lmax
Residential – East	Village	450	33	43	45	55

<sup>1</sup> Locations of existing residences are shown in Figure 2.  
<sup>2</sup> Locations of proposed park areas are shown in Figure 2.  
<sup>3</sup> Distances measured from effective noise center of nearest park to nearest residential property line.  
<sup>4</sup> Predicted park activity noise levels at the nearest existing residences include consideration of the shielding that would be provided by existing 8' traffic noise barriers along the property lines of those residences, and have been adjusted by -8 dB. Figure 2 shows the location of the existing traffic noise barriers.

Source: BAC 2020.

As indicated in Table 16, project park noise level exposure is predicted to satisfy the applicable El Dorado County General Plan evening noise level standards at the nearest existing noise-sensitive uses (single-family residential uses to the east of the project).

In addition, the predicted park activity noise levels shown in Table 16 are well below ambient daytime (7:00 a.m. to 10:00 p.m.) noise levels measured within close proximity to the nearest residential uses to the east of the park (BAC ambient measurement site 3). Based on this information, increases in ambient daytime and evening noise levels at the nearest existing sensitive uses due to project park activities would not be significant relative to the criteria contained in General Plan Policy 6.5.1.13.

Because project park activity noise exposure is predicted to satisfy the applicable El Dorado County General Plan noise level standards at the nearest existing sensitive uses (residential), and because increases in ambient noise levels due to project park activity noise levels at those locations would not be significant relative to the General Plan Policy 6.5.1.13 criteria, this impact is considered to be **less than significant**.

**Impact 5: Commercial Operations Noise at Nearest Existing Noise-Sensitive Uses**

The project site plan indicates that a 1.8-acre commercial component (Neighborhood Commercial – NC) will be included in the site design. The location of the proposed commercial component is shown in Figure 2. A complete list of allowed commercial uses within the component is provided below:

- Building supply store
- Banks and financial services
- Bars and drinking establishments
- Brewpub
- Child day care center
- Community care facility
- Drive-through facility
- Offices: professional
- Pet grooming
- Research and laboratory services
- Restaurant
- Retail sales and services
- Specialized education and training
- Veterinary clinic

- Food and beverage retail
- Medical services: clinic
- Mixed-use dwelling
- Offices: medical
- Automotive: fuel sales (CUP required)
- Microbrewery (CUP required)
- Nursery retail (CUP required)
- Winery: full-service facilities (CUP required)

As indicated above, the automotive (w/fuel sales), microbrewery, nursery/retail, and winery (full-service facilities) uses would trigger the need for a county conditional use permit (CUP). It is reasonably assumed that specific noise studies would be required for each of those uses as part of the county's CUP approval process at a later point in time. Based on this assumption, further consideration of noise sources associated with the automotive (w/fuel sales), microbrewery, nursery/retail, and winery uses within the proposed commercial component of the development were not included in this discussion. The primary noise sources associated with the remaining allowable commercial uses in the list above have been identified as parking movements, truck delivery activities, drive-through operations, childcare outdoor play area activities, building mechanical equipment (i.e., HVAC), and forklift operations.

Although the tentative map plan contains the general location of the planned commercial component within the development, detailed plans illustrating locations of specific uses within those components have not yet been developed. It is expected that detailed development plans for the commercial component will be reviewed at a future date as part of the county's project approval process. As a result, the following section provides a generalized analysis of commercial operations noise exposure at nearby existing noise-sensitive uses.

#### Parking Lot Movements

As a means of determining potential noise exposure due to commercial component parking lot activities, BAC utilized specific parking lot noise level measurements conducted by BAC. Specifically, a series of individual noise measurements were conducted of multiple vehicle types arriving and departing a parking area, including engines starting and stopping, car doors opening and closing, and persons conversing as they entered and exited the vehicles. The results of those measurements revealed that individual parking lot movements generated mean noise levels of 65 dB SEL and 65 dB  $L_{max}$  at a reference distance of 50 feet.

For a conservative assessment of parking area noise generation, it was assumed that a parking area within the commercial component could accommodate up to 200 vehicles. This estimate of vehicle capacity was based on review of the tentative map plan shown in Figure 2 and the use types envisioned within the commercial component. It was also assumed that a parking area could fill or empty during any given peak hour of business operations. Using BAC parking lot noise measurement data and based on the operations assumptions above, noise exposure from an individual parking area having 200 vehicle stalls computes to approximately 52 dB  $L_{eq}$  and 65 dB  $L_{max}$  at a distance of 50 feet from the effective noise center of the area.

#### Truck Delivery Activities

It is the experience of BAC that deliveries of product to commercial uses such as the ones allowed within the commercial component occur are typically done with medium-duty vendor trucks/vans. The primary noise sources associated with delivery activities are trucks stopping (air brakes), trucks backing into position (back-up alarms), and pulling away from the loading/unloading area

(revving engines). BAC file data indicate that noise levels associated with medium-duty truck deliveries (including side-step vans) are approximately 76 dB SEL and 66 dB  $L_{max}$  at a distance of 100 feet.

For a conservative assessment of commercial component delivery truck noise generation, it was assumed that 5 medium duty trucks/vans would deliver products to the store on a typical busy day. To compute delivery truck activity noise exposure relative to the county's hourly average ( $L_{eq}$ ) noise descriptor, it was assumed that 3 truck deliveries could occur with the same given hour. Using the BAC noise measurement data and operations assumptions above, noise exposure from 3 truck deliveries computes to approximately 45 dB  $L_{eq}$  at a distance of 100 feet (maximum noise level of 66 dB  $L_{max}$ ).

### Drive-Through Operations

It is the experience of BAC that the primary noise sources associated with drive-through operations are the amplified menu speaker board/post and vehicle passages. To quantify the noise emissions of drive-through operations, BAC utilized noise measurement data collected for similar drive-through operations in the greater Sacramento area in recent years. The BAC file data indicate that drive-through speakers were measured to have average and maximum noise levels of approximately 60 dB  $L_{eq}$  and 67 dB  $L_{max}$  (respectively) at a distance of 10 feet. BAC file data further indicate that vehicles within drive-throughs were measured to have average and maximum noise levels of 57 dB  $L_{eq}$  and 70 dB  $L_{max}$  (respectively) at a distance of 5 feet.

### Playground Activities

It is reasonably assumed that child care uses within the commercial component (should they be development) would have an outdoor play area. For the assessment of play area noise impacts, noise level data collected by BAC staff at various outdoor playgrounds in recent years was utilized. The primary noise source associated with play area use is shouting children. BAC file data indicate that average and maximum noise levels are approximately 55 dB  $L_{eq}$  and 75 dB  $L_{max}$  at a distance of 50 feet from the focal point of the playground area.

### HVAC Equipment

The HVAC systems within future buildings of the commercial component will likely consist of packaged rooftop air conditioning systems. Such HVAC units, which typically stand about 4-5 feet tall, would be shielded from view of nearby sensitive uses by the building parapets. It is the experience of BAC that such rooftop HVAC units frequently generate a noise level of approximately 45 dB  $L_{eq}$  at a reference distance of 100 feet from the building facade, including shielding by the building parapet (estimated to provide approximately 10 dB of noise level reduction).

### Forklift Activities

According the list of allowed commercial uses within the commercial development, it is expected that the building supply store and winery uses would have forklift operations for moving deliveries of product. To quantify the noise emissions of forklift activities, BAC utilized noise measurement data collected from commercial forklift operations. Those data indicate that average and

maximum noise levels for forklift loading/ unloading operations can be expected to be approximately 67 dBA  $L_{eq}$  and 82 dBA  $L_{max}$  (respectively) at a distance of 10 feet from the operating forklift.

**Predicted Commercial Operations Noise Levels at Existing Noise-Sensitive Uses**

Based on the reference noise level data and operations assumptions presented above, and assuming standard spherical spreading loss (-6 dB per doubling of distance), commercial operations noise exposure at the nearest existing noise-sensitive uses was calculated. The results of those calculations are presented in Tables 17 and 18. The nearest existing noise-sensitive uses to the commercial component have been identified as residences constructed along Latrobe Road east of the development.

**Table 17**  
**Predicted Commercial Noise Levels at Nearest Existing Noise-Sensitive Uses – Hourly  $L_{eq}$**

Receiver <sup>1</sup>	Predicted Noise Level, $L_{eq}$ (dB) <sup>2,3</sup>						Cumulative <sup>4</sup>
	Parking (250')	Truck Delivery (250')	Drive-Thru (200')	Playground (200')	HVAC (200')	Forklift (200')	
Residential – East	30	29	29	25	39	33	41

<sup>1</sup> Locations of existing residences are shown in Figure 2.  
<sup>2</sup> Predicted noise level when projected from commercial component to nearest residential property line.  
<sup>3</sup> Predicted commercial noise levels at the nearest existing residences include consideration of the shielding that would be provided by existing 8' traffic noise barriers along the property lines of those residences, and have been adjusted by -8 dB. Figure 2 shows the location of the existing traffic noise barriers.  
<sup>4</sup> Cumulative noise level exposure, or logarithmic sum of concurrent operations/activities.

Source: BAC 2023.

**Table 18**  
**Predicted Commercial Noise Levels at Nearest Existing Noise-Sensitive Uses – Maximum  $L_{max}$**

Receiver <sup>1</sup>	Predicted Noise Level, $L_{max}$ (dB) <sup>2,3</sup>						Highest Predicted <sup>4</sup>
	Parking (250')	Truck Delivery (250')	Drive-Thru (200')	Playground (200')	HVAC (200')	Forklift (200')	
Residential – East	43	50	33	46	39	48	50

<sup>1</sup> Locations of existing residences are shown in Figure 2.  
<sup>2</sup> Predicted noise level when projected from commercial component to nearest residential property line.  
<sup>3</sup> Predicted commercial noise levels at the nearest existing residences include consideration of the shielding that would be provided by existing 8' traffic noise barriers along the property lines of those residences, and have been adjusted by -8 dB. Figure 2 shows the location of the existing traffic noise barriers.  
<sup>4</sup> Highest predicted maximum noise level from analyzed commercial operations/activities.

Source: BAC 2023.

According to the data presented in Tables 17 and 18, commercial operations noise level exposure is predicted to satisfy the applicable El Dorado County General Plan daytime, evening, and

nighttime hourly average ( $L_{eq}$ ) and maximum ( $L_{max}$ ) community noise level criteria at the nearest existing noise-sensitive uses (single-family residential uses to the east of the project).

Additionally, the predicted commercial operations noise levels shown in Tables 17 and 18 are well below ambient daytime, evening, and nighttime noise levels measured within close proximity to the nearest residential uses to the east of the park (BAC ambient measurement site 3). Based on this information, increases in ambient daytime, evening, and nighttime noise levels at the nearest existing sensitive uses due to project commercial activities would not be significant relative to the criteria contained in General Plan Policy 6.5.1.13.

Based on the analysis and results provided above, noise level exposure from the analyzed commercial operations is predicted to satisfy the applicable El Dorado County General Plan noise level standards at the nearest existing sensitive uses (residential). Further, increases in ambient noise levels from those operations at the nearest existing sensitive uses would not be significant relative to applicable General Plan Policy 6.5.1.13 criteria. As a result, this impact is considered to be *less than significant*.

### **Noise Impacts Associated with Proposed Off-Site Infrastructure Improvements**

The project proposes off-site improvements associated with transportation and utility infrastructure. The overall area of potential effect (APE) for the improvements is presented in Appendix F. The off-site infrastructure improvements include:

- Improvement I: Intersection improvements at Latrobe Road/Town Center Boulevard (turn lane extension, roadway re-paving and re-striping)
- Improvement II: Roadway improvements at Royal Oaks Drive/Latrobe Road and Avanti Drive/Latrobe Road intersections (intersection signalization and roadway re-striping)
- Improvement III: Transportation improvements (roadway and bicycle access connection, and waterline connection)
- Improvement IV: Infrastructure improvements (wastewater force main extension)

During the infrastructure improvements, noise from heavy equipment operations would add to the noise environment in the immediate project vicinity.

#### **Impact 6: Off-Site Infrastructure Improvement Noise at Existing Noise-Sensitive Uses**

Heavy equipment associated with project off-site infrastructure improvement activities would increase ambient noise levels when in use. Noise levels would vary depending on the type of equipment used, how it is operated, and how well it is maintained. Noise exposure at any single point outside the project work area would also vary depending upon the proximity of equipment activities to that point.

The nearest existing noise-sensitive receptors to the off-site infrastructure improvement work areas have been identified as residences along Latrobe Road – located as close as 150 feet away from the acoustic noise center of the Improvement II work areas. However, it should be noted

that those nearest residences have existing property line noise barriers that would provide screening of work area noise levels.

Table 19 includes the range of maximum noise levels for equipment commonly used in roadway improvement projects at full-power operation at a distance of 50 feet. The Table 19 data also include predicted maximum equipment noise levels at the nearest identified sensitive receptor to an off-site infrastructure improvement work area located approximately 150 feet away, which assume a standard spherical spreading loss of 6 dB per doubling of distance.

It should be noted that average noise levels associated with construction activities are dependent upon equipment type, duration of activity, and location within a given work area, and therefore tend to be highly variable. As a result, this analysis focuses on maximum noise levels associated with construction equipment only.

**Table 19  
Typical Construction Equipment Noise – Roadway Improvement Projects**

<b>Equipment Description</b>	<b>Typical Maximum Noise Level at 50 Feet (dBA)</b>	<b>Predicted Maximum Noise Level at 150 Feet (dBA)</b>
Concrete mixer truck	85	75
Concrete saw	90	80
Dump truck	84	74
Flatbed truck	84	74
Front end loader	80	70
Generator (more than 25 kVA)	82	72
Paver	85	75
Pickup truck	55	45

*Source: 2018 Federal Transit Administration Noise and Vibration Impact Assessment Manual, Table 7-1.*

Based on the equipment noise levels in Table 19, maximum noise levels from construction equipment are predicted to range from 45 to 80 dB at a distance of 150 feet – the distance from the acoustical noise center of the nearest work area to the nearest residence. Although it is expected that existing noise barriers along the property lines of the nearest residences to the work areas would reduce equipment noise levels at those locations, it is possible that a portion of the heavy equipment associated with project infrastructure improvements could result in temporary short-term increases over ambient maximum noise levels at those residences. Further, it is possible that those noise levels could exceed the applicable El Dorado County noise level limits.

Policy 6.5.1.11 of the El Dorado County General Plan exempts noise sources associated with construction provided such activities take place between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 8:00 p.m. on weekends, and on federally recognized holidays. Section 130.37.20 of the El Dorado County Municipal Code also provides an exemption for construction noise provided that such activities occur during daylight hours and that all equipment is fitted with factory installed muffling devices and maintained in good working order. Provided that project roadway improvement construction activities occur pursuant to the criteria identified in General Plan Policy 6.5.1.11 and Municipal Code Section 130.37.20, noise from those project-generated activities would be exempt, and this impact would be considered less than

significant. However, if construction activities are proposed during the hours/days not exempted by the General Plan or Municipal Code, noise levels generated by project roadway improvement construction activities could exceed the maximum noise level standards identified in Table 8 at the nearest existing residential uses. As a result, noise impacts associated with project on-site construction activities are identified as being **potentially significant**.

**Mitigation for Impact 6:** Construction Noise Control Measures

MM-6: To the maximum extent practical, the following construction-related measures should be incorporated into the project off-site infrastructure improvement operations:

- Noise-generating infrastructure improvement construction activities should occur between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends and on federal holidays.
- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive uses.
- Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.

**Significance of Impact 6 after Mitigation:** *Less than Significant*

**Noise Impacts Associated with Project On-Site Construction Activities**

**Impact 6: On-Site Construction Noise Levels at Existing Sensitive Uses**

During project construction, heavy equipment would be used for grading excavation, paving, and building construction, which would increase ambient noise levels when in use. Noise levels would vary depending on the type of equipment used, how it is operated, and how well it is maintained. Noise exposure at any single point outside the project work area would also vary depending upon the proximity of equipment activities to that point. The property boundary of the nearest existing residential use (east of Latrobe Road) is located approximately 200 feet away from where construction activities would occur within the project area.

Table 20 includes the range of maximum noise levels for equipment commonly used in general construction projects at full-power operation at a distance of 50 feet. Not all of these construction activities would be required of this project. The Table 20 data also include predicted maximum

equipment noise levels at the boundary of the nearest sensitive use located approximately 200 feet away, which assume a standard spherical spreading loss of 6 dB per doubling of distance.

**Table 20**  
**Construction Equipment Reference Noise Levels and Predicted Noise Levels at 200 Feet**

Equipment Description	Maximum Noise Level at 50 Feet (dBA)	Predicted Maximum Noise Level at 200 feet (dBA)
Air compressor	80	68
Backhoe	80	68
Ballast equalizer	82	70
Ballast tamper	83	71
Compactor	82	70
Concrete mixer	85	73
Concrete pump	82	70
Concrete vibrator	76	64
Crane, mobile	83	71
Dozer	85	73
Generator	82	73
Grader	85	70
Impact wrench	85	73
Loader	80	73
Paver	85	68
Pneumatic tool	85	73
Pump	77	73
Saw	76	65
Scarifier	83	64
Scraper	85	71
Shovel	82	73
Spike driver	77	70
Tie cutter	84	65
Tie handler	80	72
Tie inserter	85	68
Truck	84	73

Source: 2018 Federal Transit Administration Noise and Vibration Impact Assessment Manual, Table 7-1.

Based on the equipment noise levels in Table 20, worst-case on-site project construction equipment maximum noise levels at the nearest existing residential use located 200 feet away are expected to range from approximately 64 to 73 dB. However, the predicted project construction equipment maximum noise levels of 64 to 73 dB are below ambient daytime maximum noise levels measured within close proximity to those residences (BAC ambient measurement site 3). Further, it is expected that existing traffic noise barriers along the property boundaries of those nearest residential uses would further reduce project construction noise levels at those locations (the existing barriers are illustrated in Figure 2). However, it is possible that worst-case one-site project construction noise levels could exceed the applicable El Dorado County General Plan noise level limits applicable to construction noise in community regions identified in Table 8, including consideration of the existing noise barriers.

Policy 6.5.1.11 of the El Dorado County General Plan exempts noise sources associated with construction provided such activities take place between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 8:00 p.m. on weekends, and on federally recognized holidays. Section 130.37.20 of the El Dorado County Municipal Code also provides an exemption

for construction noise provided that such activities occur during daylight hours and that all equipment is fitted with factory installed muffling devices and maintained in good working order. Provided project construction activities occur during these hours/days, construction activities would be exempt, and this impact would be considered less than significant. However, if construction activities are proposed during the hours not exempted by the General Plan or Municipal Code, noise levels generated by construction activities could exceed the maximum noise level standards identified in Table 8 at the nearest existing residential uses. As a result, noise impacts associated with project on-site construction activities are identified as being **potentially significant**.

**Mitigation for Impact 7: On-Site Construction Noise Control Measures**

MM-7: To the maximum extent practical, the following measures should be incorporated into the project on-site construction operations:

- Noise-generating infrastructure improvement construction activities should occur between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends and on federal holidays.
- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive uses.
- Project area and site access road speed limits shall be established and enforced during the construction period.
- Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.

**Significance of Impact 7 after Mitigation: *Less than Significant***

## Vibration Impacts Associated with Project Activities

### Impact 8: Vibration Generated by Project Construction and On-Site Operations

During project construction, heavy equipment would be used for grading, excavation, paving, and building construction, which would generate localized vibration in the immediate vicinity of the construction. The nearest identified existing structures (residences east of Latrobe Road) are located approximately 215 feet from where from construction activities which would occur within the project area.

Table 21 includes the range of vibration levels for equipment commonly used in general construction projects at a distance of 25 feet. The Table 21 data also include predicted equipment vibration levels at the nearest existing residences to the project area located approximately 215 feet away.

**Table 21**  
**Vibration Source Levels for Construction Equipment and Predicted Levels at 215 Feet**

Equipment	Maximum Vibration Level at 25 Feet (PPV) <sup>1</sup>	Predicted Maximum Vibration Level at 215 Feet (PPV)
Large bulldozer	0.089	0.004
Hoe ram	0.089	0.004
Caisson drilling	0.089	0.004
Loaded trucks	0.076	0.003
Backhoe	0.051	0.002
Excavator	0.051	0.002
Grader	0.051	0.002
Loader	0.051	0.002
Jackhammer	0.035	0.001
Small bulldozer	0.003	<0.001

<sup>1</sup> PPV = Peak Particle Velocity

Source: 2018 FTA Transit Noise and Vibration Impact Assessment Manual and BAC calculations

As shown in Table 21, vibration levels generated from on-site construction activities at the nearest existing structures located approximately 215 feet away (residences east of Latrobe Road) are predicted to be well below the Caltrans thresholds for damage to new residential structures of 0.5 in/sec PPV shown in Table 4. In addition, the predicted vibration levels in Table 21 are well below the threshold for a barely perceptible human response as defined by Caltrans in Table 5 (vibration damage potential threshold criteria). Therefore, on-site construction within the project area is not expected to result in excessive groundborne vibration levels at nearby existing residential uses.

Results from the ambient vibration level monitoring at the project site (Table 3) indicate that measured average vibration levels were well below the strictest Caltrans thresholds for damage to structures and thresholds for annoyance. Therefore, it is expected that the project would not result in the exposure of persons to excessive groundborne vibration levels at proposed uses of the project.

The project proposes residential and park uses within the development. It is the experience of BAC these uses do not typically have equipment that generates appreciable vibration. Further, it is our understanding that the project does not propose equipment that will produce appreciable vibration.

Because vibration levels due to and upon the proposed project are expected to satisfy the applicable Caltrans groundborne impact vibration criteria, this impact is considered to be **less than significant**.

#### **Impact 9: Vibration Generated by Off-Site Infrastructure Improvements**

During project off-site infrastructure improvements, heavy equipment would be used, which would generate localized vibration in the immediate vicinity of the construction. The worst-case vibration exposure from off-site heavy equipment activities would occur at the sensitive receptors (residences) located along Latrobe Road – located as close as 110 feet away from Improvement II work areas.

According to the reference vibration levels for construction equipment presented in Table 21, vibration levels associated with typical construction equipment range from 0.003 to 0.089 PPV at a distance of 25 feet. When projected to the nearest existing residence located near an off-site infrastructure improvement work area approximately 110 feet away, construction equipment vibration levels are calculated to range from less than 0.001 to 0.010 PPV. The calculated vibration levels of less than 0.001 to 0.010 PPV are well below the Caltrans thresholds for damage to new residential structures of 0.5 in/sec PPV shown in Table 4. In addition, the calculated vibration levels are below the threshold for a barely perceptible human response as defined by Caltrans in Table 5 (vibration damage potential threshold criteria).

Because vibration level exposure due to project off-site infrastructure improvements would satisfy the Caltrans groundborne impact vibration criteria, this impact is considered to be **less than significant**.

#### **Noise Impacts Upon the Development**

The California Supreme Court issued an opinion in *California Building Industry Association v. Bay Area Air Quality Management District (2015)* holding that CEQA is primarily concerned with the impacts of a project on the environment and generally does not require agencies to analyze the impact of existing conditions on a project's future users or residents. Nevertheless, El Dorado County has policies that address existing/future conditions affecting the proposed project, which are discussed in the following section.

#### **On-Site Traffic Noise Impacts**

##### **Impact 10: Future Exterior Traffic Noise Levels at Proposed Residential and Park Uses**

The FHWA Model was used with future traffic data to predict future traffic noise levels at the residential and park uses of the development. The future (Cumulative 2040 Plus Project) average daily traffic (ADT) volume for Latrobe Road was calculated using data provided in the project

transportation impact analysis completed by T. Kear Transportation Planning & Management, Inc. Specifically, the future Latrobe Road average daily traffic (ADT) volume was conservatively estimated by applying a factor of 5 to the sum of AM and PM peak hour conditions. The predicted future Latrobe Road traffic noise levels at the residential and park uses proposed nearest to Latrobe Road are summarized in Table 22. Detailed FHWA Model inputs and results are provided in Appendix G.

**Table 22  
Predicted Future Exterior Latrobe Road Traffic Noise Levels at Proposed Residential Uses<sup>1</sup>**

Location <sup>2</sup>	Description	Distance from Roadway Centerline (ft) <sup>3</sup>	Future Exterior DNL (dB) <sup>4</sup>
Park	Village Park	300	61
Park	Neighborhood Park 1	150	62
SFL Lots 588-598	Backyards	95	68
	First-Floor Facades	110	67
	Upper-Floor Facades	110	69
SFL Lots 550-560	Backyards	95	65
	First-Floor Facades	110	64
	Upper-Floor Facades	110	66
SFM Large Lot 2	Backyards	230	60
	First-Floor Facades	60	68
	Upper-Floor Facades	60	70

<sup>1</sup> A complete listing of FHWA Model inputs and results are provided in Appendix G.  
<sup>2</sup> Locations of parks and lots are shown in Figure 2.  
<sup>3</sup> Distances scaled from effective noise center of proposed parks and residential lots to roadway centerline using provided site plans.  
<sup>4</sup> A +2 dB offset was applied to upper-floor facades for reduced ground absorption of sound at elevated locations.

Source: BAC 2023.

As indicated in Table 22, predicted future Latrobe Road traffic noise level exposure at the nearest proposed park uses of the development (Village Park and Neighborhood Park 1) would satisfy the applicable El Dorado County General Plan exterior noise level standard of 70 dB DNL for playgrounds and neighborhood park uses. However, at the nearest single-family low density residential (SFL) backyards, future Latrobe Road traffic noise level exposure is predicted to exceed the General Plan exterior noise level standard of 60 dB DNL for residential uses.

Although the project site plans contain the general location of the proposed single-family medium density residential (SFM) large lot, the locations of the individual residences and outdoor activity areas are currently unknown. However, the Table 22 data indicate that future Latrobe Road exterior traffic noise levels are predicted to be 60 dB DNL at a distance of 230 feet from the centerline of the roadway. Thus, future Latrobe Road traffic noise exposure would exceed the applicable El Dorado County General Plan 60 dB DNL exterior noise level standard should the outdoor activity areas of the residences within the proposed SFM large lot be located within 230 feet from the centerline of Latrobe Road. Based on the analysis provided above, this impact is identified as being **potentially significant**.

Mitigation Impact 10:

To satisfy the El Dorado County General Plan 60 dB DNL exterior noise level standard at the single-family low and medium density residential outdoor activity areas proposed nearest to Latrobe Road, the following noise mitigation measures should be implemented:

**MM-10A:** To satisfy the General Plan 60 dB DNL exterior noise level standard at the backyards of the single-family residential lots proposed nearest to Latrobe Road, the construction of solid traffic noise barriers ranging from 6 to 9' in height at the locations illustrated in Figure 4 would be required. Appendix H contains the inputs and results from the barrier analysis.

It is recommended that the traffic noise barriers take the form of a masonry wall, earthen berm, or combination of the two. Other materials may be acceptable (i.e., wood or wood composite fence with overlapping slat construction) but should be reviewed by an acoustical consultant prior to construction.

**MM-10B:** To satisfy the General Plan 60 dB DNL exterior noise level standard at the backyards of the single-family medium density (SFM) lots, one of the following two noise measures could be implemented by the project developer:

1. Ensure that the outdoor activity areas of the residential lots proposed within the SFM area maintain a minimum setback distance of 230 feet from the centerline of Latrobe Road; or
2. Should the outdoor activity areas of the proposed residential lots within the SFM area be proposed within 230 feet from the centerline of Latrobe Road, the construction of solid traffic noise barriers would be required along the property lines of the lots located within that setback distance. Once site plans that include building pad elevations are available, a site-specific noise study would need to be completed by a qualified noise consultant in order to determine the overall final heights of barriers required at those locations.

It is recommended that the traffic noise barriers take the form of a masonry wall, earthen berm, or combination of the two. Other materials may be acceptable (i.e., wood or wood composite fence with overlapping slat construction) but should be reviewed by an acoustical consultant prior to construction.

**Significance of Impact 10 after Mitigation: *Less than Significant***

**Impact 11: Future Interior Traffic Noise Levels at Proposed Residential Uses**

Standard residential construction (stucco siding, STC-27 windows, door weather-stripping, exterior wall insulation, composition plywood roof), *typically* results in an exterior to interior noise reduction of approximately 25 dB with windows closed and approximately 15 dB with windows open. Therefore, provided future traffic noise levels do not exceed 70 dB DNL at exterior building facades, standard construction practices should be adequate to ensure compliance with the El Dorado County General Plan 45 dB DNL interior noise level standard at the project site.

After implementation of Mitigation Measure 8A (construction of property line traffic noise barriers), future exterior traffic noise levels from Latrobe Road are predicted to be approximately 60 dB DNL or less at the first-floor facades of the single-family low density (SFL) residences constructed nearest to the roadway. Due to reduced ground absorption at elevated positions and lack of shielding by the noise barriers identified in Mitigation Measure 9A, future Latrobe Road traffic noise levels at the upper-floor facades of those residences are predicted to be as high as 69 dB DNL (Table 22). According to the Table 22 data, future exterior Latrobe Road traffic noise levels at the SFM residences are predicted to be approximately 68 dB DNL at a distance of 60 feet from the roadway centerline. Due to reduced ground absorption at elevated positions, upper-level traffic noise levels from Latrobe Road would approach 70 dB DNL at that same distance.

Based on the information above, standard construction should be adequate to reduce future Latrobe Road traffic noise levels within all floors of SFL residences constructed adjacent to the roadway. However, future traffic noise level exposure is calculated to be only 1 dB below the General Plan 45 dB DNL interior noise level standard.

Predicted future Latrobe Road interior traffic noise levels within the SFM residences constructed at least 60 feet from the roadway centerline would satisfy the 45 dB DNL interior noise level standard (i.e., standard building construction practices with windows closed and mechanical ventilation provided). However, should residences within the SFM large lot be constructed within 60 feet from the centerline of Latrobe Road, future interior traffic noise levels from the roadway could exceed the General Plan 45 dB DNL interior noise level standard at the upper-floors of those residences. As a result, this impact is identified as being **potentially significant**.

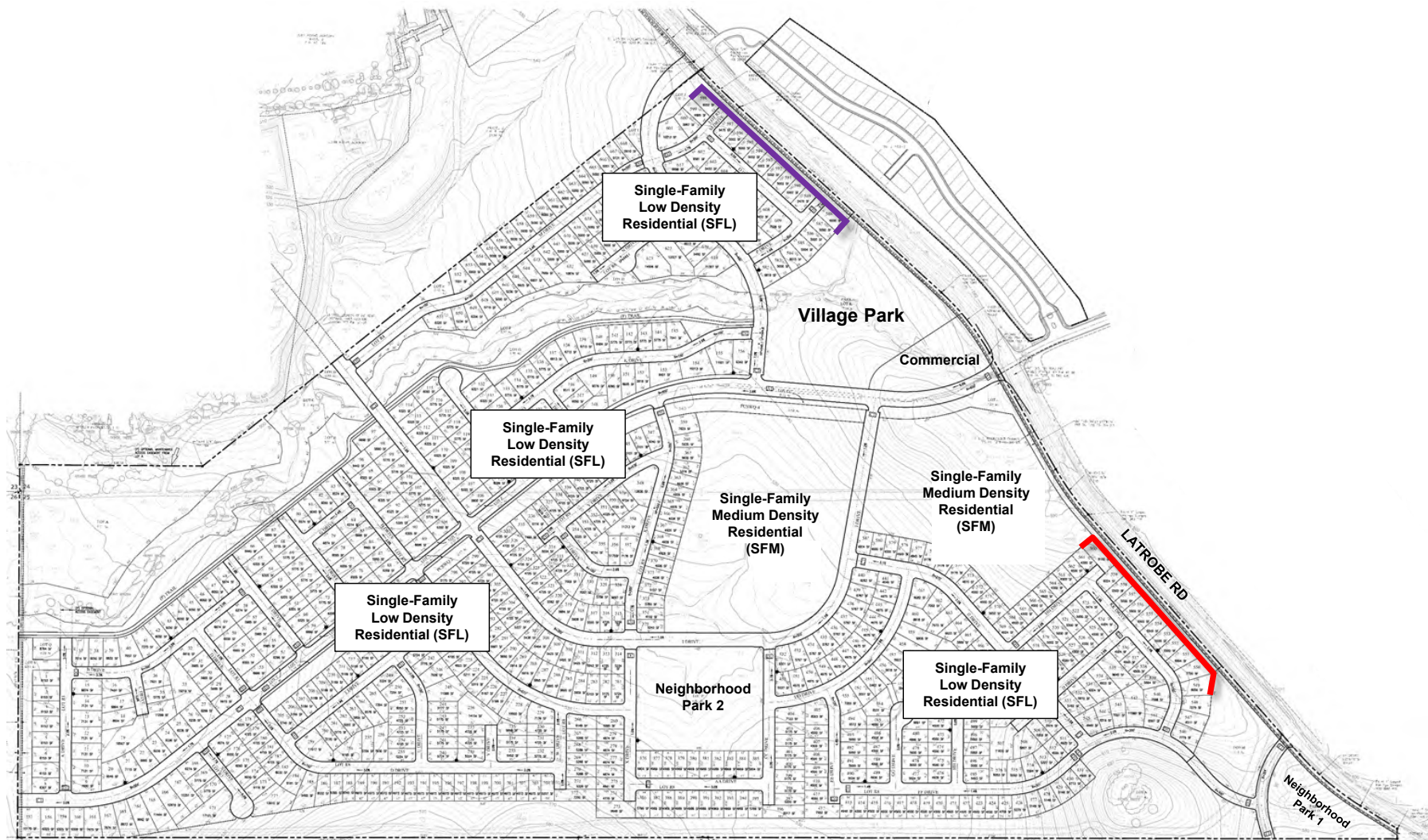
#### Mitigation Impact 11:

To satisfy the El Dorado County General Plan 45 dB DNL interior noise level standard within the single-family low and medium density residences proposed nearest to Latrobe Road (*including* a factor of safety), the following noise mitigation measures should be implemented:

**MM-11A:** To achieve a greater margin of safety, the window construction upgrades identified in Figure 5 should be integrated into the project design. Specifically, the upper-floor bedrooms windows of the lots identified in Figure 5 from which Latrobe Road would be visible should be upgraded to have a minimum Sound Transmission Rating (STC) of 32. In addition, mechanical ventilation (air conditioning) should be provided for all residences within this development to allow the occupants to close doors and windows to achieve compliance with General Plan 45 dB DNL interior noise level standard.

**MM-11B:** Should the building facades of residences located within the SFM large lot be proposed within 60 feet from the centerline of Latrobe Road, all upper-floor bedroom windows of the residences located within that setback distance that would have a view of the roadway should be upgraded to a minimum STC of 32.

**Significance of Impact 11 after Mitigation: *Less than Significant***



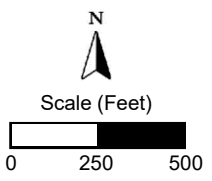
**Legend**

- 9' Solid Noise Barriers (Mitigation Measure MM-10A – Traffic Noise)
- 6' Solid Noise Barriers (Mitigation Measure MM-10A – Traffic Noise)

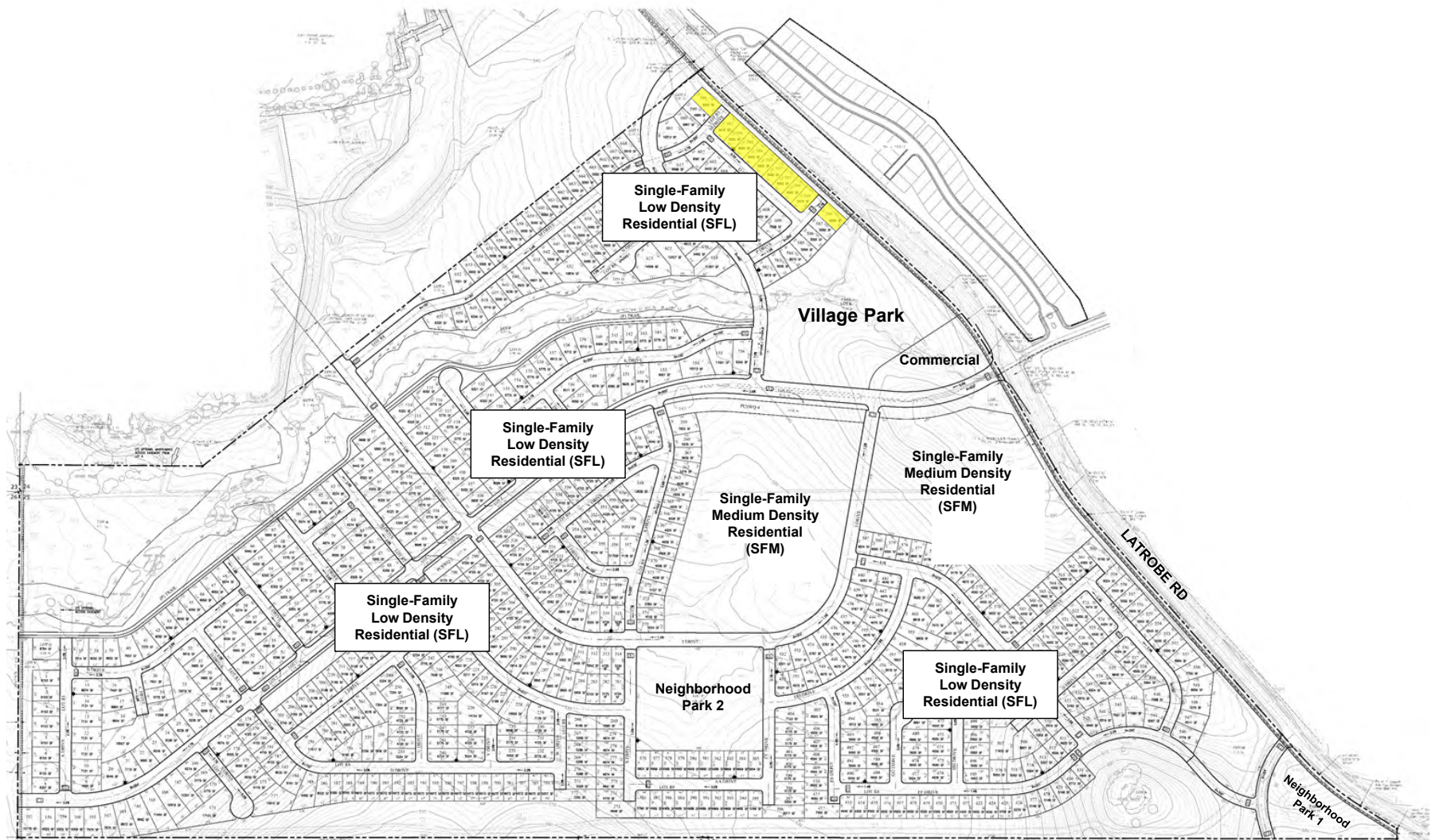
Creekside Village Residential Development  
 El Dorado County, California

Mitigation Measure 10A – Traffic Noise


Figure 4







**Legend**

 Window Upgrade STC 32: Upper-Floors Only (Mitigation Measure MM-11A)

Creekside Village Residential Development  
El Dorado County, California

Mitigation Measure 11A – Traffic Noise

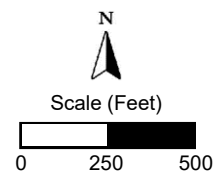


Figure 5





## **Impact 12: Park Activity Noise Levels at Proposed Residential Uses**

According to the project site plan shown in Figure 2, parks are proposed to be located adjacent to residential uses within the development. Park activities have been identified as a primary noise source that could impact nearby residential uses proposed within the development.

An analysis of park activity noise exposure at existing noise-sensitive (residential) uses was presented in **Impact 4**. BAC file data referenced in that analysis indicate that parks consisting of active uses have noise levels of up to 60 dB  $L_{eq}$  and 70 dB  $L_{max}$  at a distance of 50 feet.

Section 130.37.020 of the El Dorado County Municipal Code provides an exemption for noise from activities conducted in parks, such as those proposed by the project. However, project park noise levels would be subject to compliance with applicable El Dorado County General Plan noise level limits. Park activities would likely consist of human speech (i.e., shouting and cheering during activities), which would be subject to the General Plan's more restrictive daytime, evening, and nighttime noise level standards for community regions shown in Table 7. However, it is reasonable to assume that park hours would be likely be restricted to daytime and evening hours only (7:00 a.m. to 10:00 p.m.). Satisfaction with the General Plan's more restrictive evening noise level standards would ensure for compliance with the General Plan's less restrictive daytime noise level limits. Therefore, project park noise exposure at the nearest proposed residential uses was assessed relative to the applicable General Plan evening noise level standards for community regions shown in Table 7.

The nearest proposed residential uses to a park within the development maintain a separation of approximately 150 feet from the center of the park (Neighborhood Park 2). Based on the reference noise levels presented above, and assuming standard spherical spreading loss (-6 dB per doubling of distance), park activity noise levels at the nearest proposed residential uses located 150 feet away is calculated to be 50 dB  $L_{eq}$  and 60 dB  $L_{max}$ . The predicted park activity noise levels of 50 dB  $L_{eq}$  and 60 dB  $L_{max}$  at the nearest residential uses would exceed the applicable El Dorado General Plan evening noise level standards of 45 dB  $L_{eq}$  and 55 dB  $L_{max}$ . As a result, this impact is identified as being **potentially significant**.

### Mitigation Impact 12:

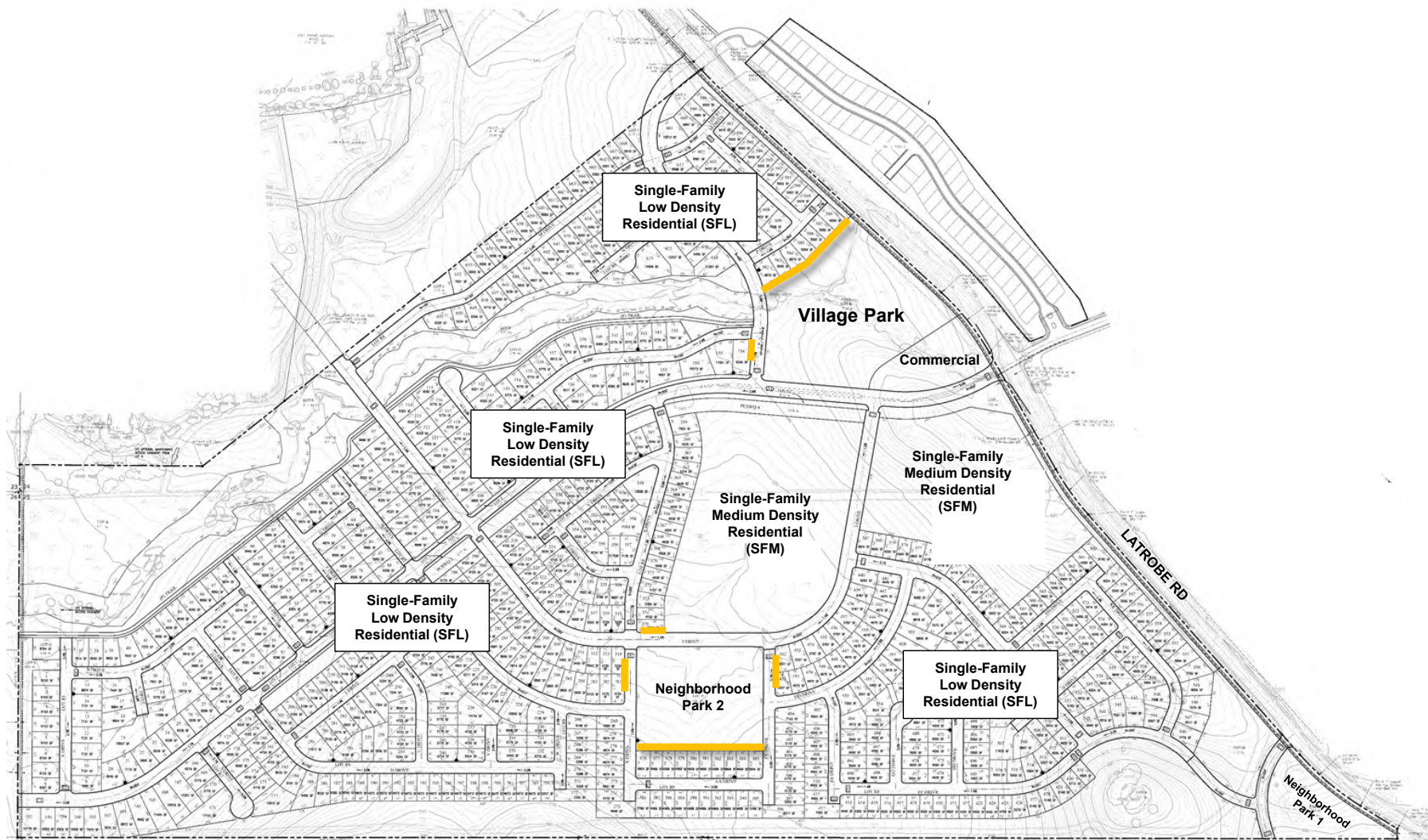
To reduce the potential for an exceedance of the applicable El Dorado County General Plan evening noise level standards at proposed residential uses, the following park noise mitigation measure should be implemented:

- MM-12:** Solid noise barriers measuring a minimum of 6-feet in height (relative to backyard elevation) should be constructed at the locations illustrated in Figure 6. The recommended noise barrier extension could take the form of a solid masonry wall or wood fence. Should the construction of a wood fence be selected as a barrier, the fence slats should overlap by a minimum of two inches and be screwed to the framing rather than nailed. The purpose of the overlapping slats and using screws rather than nails is to ensure that prolonged exposure to the elements does not result in visible gaps through the slats which would result in reduced noise barrier

effectiveness. The final barrier design should be reviewed by an acoustical consultant prior to installation.

The construction of 6-foot-tall noise barriers at the locations illustrated in Figure 6 would break line of sight of the park activities at the outdoor activity areas of the nearest proposed residences. This shielding is estimated to provide approximately 5 dB of noise attenuation, which would reduce predicted park noise level levels to 45 dB  $L_{eq}$  and 55 dB  $L_{max}$  or less at those locations and would satisfy the applicable El Dorado County General Plan 45 dB  $L_{eq}$  and 55 dB  $L_{max}$  evening noise level noise level standards.

**Significance of Impact 12 after Mitigation: *Less than Significant***



**Legend**

 6' Solid Noise Barriers (Mitigation Measure MM-11 – Park Noise)

Creekside Village Residential Development  
 El Dorado County, California

Mitigation Measure 11 – Park Noise

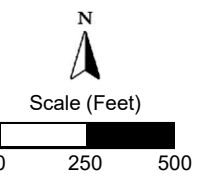


Figure 6





**Impact 13: Existing El Dorado Business Park Operations Noise Levels at Proposed Residential Uses**

As indicated in Figure 1, existing commercial / office uses (El Dorado Business Park) are located north of the proposed development. Primary noise sources associated with the adjacent commercial uses have been identified as mechanical equipment (HVAC), parking lot movements, and truck loading dock activities. According to BAC ambient noise level data collected at the project site (Appendices D & E), not including natural sounds (i.e., frogs, crickets, etc.), noise from the existing commercial operations to the north did not exceed the County's noise standards applicable to stationary noise sources. As a result, this impact is considered to be ***less than significant***.

This concludes BAC's noise and vibration assessment of the Creekside Village Residential Development project in El Dorado County, California. Please contact BAC at (530) 537-2328 or [darioq@bacnoise.com](mailto:darioq@bacnoise.com) if you have any comments or questions regarding this report.

## Appendix A Acoustical Terminology

<b>Acoustics</b>	The science of sound.
<b>Ambient Noise</b>	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
<b>Attenuation</b>	The reduction of an acoustic signal.
<b>A-Weighting</b>	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
<b>Decibel or dB</b>	Fundamental unit of sound. A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
<b>CNEL</b>	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
<b>Frequency</b>	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
<b>IIC</b>	Impact Insulation Class (IIC): A single-number representation of a floor/ceiling partition's impact generated noise insulation performance. The field-measured version of this number is the FIIC.
<b>L<sub>dn</sub></b>	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
<b>Leq</b>	Equivalent or energy-averaged sound level.
<b>L<sub>max</sub></b>	The highest root-mean-square (RMS) sound level measured over a given period of time.
<b>Loudness</b>	A subjective term for the sensation of the magnitude of sound.
<b>Masking</b>	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
<b>Noise</b>	Unwanted sound.
<b>Peak Noise</b>	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
<b>RT<sub>60</sub></b>	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
<b>STC</b>	Sound Transmission Class (STC): A single-number representation of a partition's noise insulation performance. This number is based on laboratory-measured, 16-band (1/3-octave) transmission loss (TL) data of the subject partition. The field-measured version of this number is the FSTC.



**Appendix B-1**  
**FHWA Highway Traffic Noise Prediction Model Inputs**  
**Creskide Village**  
**File Name: 01 2023 Existing No Project**  
**Run Date: 10/4/2023**



#	Roadway	Segment Description	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance to Receptor	Offset (dB)
1	El Dorado Hills Blvd	North of Serrano Prkwy	28,265	83	17	2	1	50	115	0
2	El Dorado Hills Blvd	Serrano Pkwy to White Rock Rd	40,915	83	17	2	1	45	300	0
3	Latrobe Rd	White Rock Rd to Golden Foothill Pkwy	37,240	83	17	2	1	50	125	0
4	Latrobe Rd	Golden Foothill Pkwy to Investment Blvd	12,635	83	17	2	1	55	110	-13
5	Latrobe Rd	Investment Blvd to Avanti Dr/Project Q Dr	9,245	83	17	2	1	55	250	-8
6	Latrobe Rd	Avanti Dr/Project Q Dr to Project Commercial Entry	8,620	83	17	2	1	55	115	-8
7	Latrobe Rd	Project Commercial Entry to Royal Oaks Dr	8,620	83	17	2	1	55	105	-8
8	Latrobe Rd	Royal Oaks Dr to Wetsel Oviatt Rd	7,355	83	17	2	1	55	260	-8
9	Latrobe Rd	Wetsel Oviatt Rd to S Shingle Rd	6,910	83	17	2	1	55	130	0
10	Latrobe Rd	South of S Shingle Rd	5,170	83	17	2	1	55	150	0
11	Lassen Ln	West of El Dorado Hills Blvd	4,165	83	17	2	1	25	105	0
12	Serrano Pkwy	East of El Dorado Hills Blvd	7,950	83	17	1	1	45	170	0
13	White Rock Rd	West of Latrobe Rd	14,280	83	17	2	1	45	105	-6
14	White Rock Rd	East of Latrobe Rd	15,185	83	17	2	1	35	75	0
15	Golden Foothill Pkwy	West of Latrobe Rd	13,465	83	17	2	1	35	85	-6
16	Clubview Dr	East of Latrobe Rd	7,240	83	17	1	1	25	75	-6
17	Investment Blvd	Latrobe Rd to Robert J Mathews Pkwy	6,140	83	17	2	1	35	415	-13
18	Investment Blvd	West of Robert J Mathews Pkwy	890	83	17	2	1	35	150	0
19	Project Q Dr	West of Latrobe Rd (within project area)								
20	Avanti Dr	East of Latrobe Rd	645	83	17	1	1	25	115	-8
21	Project Commercial Entry	West of Latrobe Rd (within project area)								
22	Royal Oaks Dr	West of Latrobe Rd (within project area)								
23	Royal Oaks Dr	East of Latrobe Rd	2,245	83	17	1	1	35	175	-8
24	Wetsel Oviatt Rd	West of Latrobe Rd	445	83	17	2	1	35	2000	-8
25	S Shingle Rd	West of Latrobe Rd	1,455	83	17	1	1	25	175	0
26	S Shingle Rd	East of Latrobe Rd	2,945	83	17	1	1	45	175	0
27	Robert J Mathews Pkwy	Investment Blvd to Golden Foothill Pkwy	5,975	83	17	2	1	35	285	0
28	Robert J Mathews Pkwy	South of Investment Blvd	8,025	83	17	2	1	35	415	0
29	Palmdale Dr	South of Carson Crossing Dr	1,570	83	17	1	1	25	75	-6
30	Carson Crossing Dr	Palmdale Dr to Four Seasons Dr	2,580	83	17	1	1	35	70	-6
31	Carson Crossing Dr	Palmdale Dr to Golden Foothill Pkwy	2,890	83	17	1	1	35	70	-6

Notes: Offsets applied where existing traffic noise barriers (sound walls) are present (heights range from 6' to 13').

**Appendix B-2**  
**FHWA Highway Traffic Noise Prediction Model Inputs**  
**Creskide Village**  
**File Name: 02 2023 Existing+Project**  
**Run Date: 10/4/2023**



#	Roadway	Segment Description	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance to Receptor	Offset (dB)
1	El Dorado Hills Blvd	North of Serrano Prkwy	29,180	83	17	2	1	50	115	0
2	El Dorado Hills Blvd	Serrano Pkwy to White Rock Rd	45,150	83	17	2	1	45	300	0
3	Latrobe Rd	White Rock Rd to Golden Foothill Pkwy	42,620	83	17	2	1	50	125	0
4	Latrobe Rd	Golden Foothill Pkwy to Investment Blvd	20,435	83	17	2	1	55	110	-13
5	Latrobe Rd	Investment Blvd to Avanti Dr/Project Q Dr	17,230	83	17	2	1	55	250	-8
6	Latrobe Rd	Avanti Dr/Project Q Dr to Project Commercial Entry	16,330	83	17	2	1	55	115	-8
7	Latrobe Rd	Project Commercial Entry to Royal Oaks Dr	15,865	83	17	2	1	55	105	-8
8	Latrobe Rd	Royal Oaks Dr to Wetsel Oviatt Rd	9,160	83	17	2	1	55	260	-8
9	Latrobe Rd	Wetsel Oviatt Rd to S Shingle Rd	7,810	83	17	2	1	55	130	0
10	Latrobe Rd	South of S Shingle Rd	5,360	83	17	2	1	55	150	0
11	Lassen Ln	West of El Dorado Hills Blvd	4,165	83	17	2	1	25	105	0
12	Serrano Pkwy	East of El Dorado Hills Blvd	7,950	83	17	1	1	45	170	0
13	White Rock Rd	West of Latrobe Rd	14,180	83	17	2	1	45	105	-6
14	White Rock Rd	East of Latrobe Rd	16,230	83	17	2	1	35	75	0
15	Golden Foothill Pkwy	West of Latrobe Rd	15,025	83	17	2	1	35	85	-6
16	Clubview Dr	East of Latrobe Rd	7,910	83	17	1	1	25	75	-6
17	Investment Blvd	Latrobe Rd to Robert J Mathews Pkwy	6,330	83	17	2	1	35	415	-13
18	Investment Blvd	West of Robert J Mathews Pkwy	890	83	17	2	1	35	150	0
19	Project Q Dr	West of Latrobe Rd (within project area)	785	83	17	1	1	25	300	-8
20	Avanti Dr	East of Latrobe Rd	645	83	17	1	1	25	115	-8
21	Project Commercial Entry	West of Latrobe Rd (within project area)	845	83	17	1	1	15	250	-8
22	Royal Oaks Dr	West of Latrobe Rd (within project area)	8,405	83	17	1	1	35	250	-8
23	Royal Oaks Dr	East of Latrobe Rd	2,310	83	17	1	1	35	175	-8
24	Wetsel Oviatt Rd	West of Latrobe Rd	835	83	17	2	1	35	2000	-8
25	S Shingle Rd	West of Latrobe Rd	1,810	83	17	1	1	25	175	0
26	S Shingle Rd	East of Latrobe Rd	3,300	83	17	1	1	45	175	0
27	Robert J Mathews Pkwy	Investment Blvd to Golden Foothill Pkwy	6,165	83	17	2	1	35	285	0
28	Robert J Mathews Pkwy	South of Investment Blvd	8,025	83	17	2	1	35	415	0
29	Palmdale Dr	South of Carson Crossing Dr	1,570	83	17	1	1	25	75	-6
30	Carson Crossing Dr	Palmdale Dr to Four Seasons Dr	4,140	83	17	1	1	35	70	-6
31	Carson Crossing Dr	Palmdale Dr to Golden Foothill Pkwy	4,450	83	17	1	1	35	70	-6

Notes: Offsets applied where existing traffic noise barriers (sound walls) are present (heights range from 6' to 13').

**Appendix B-3**  
**FHWA Highway Traffic Noise Prediction Model Inputs**  
**Creskide Village**  
**File Name: 03 2040 Cumulative No Project**  
**Run Date: 10/4/2023**



#	Roadway	Segment Description	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance to Receptor	Offset (dB)
1	El Dorado Hills Blvd	North of Serrano Prkwy	30,660	83	17	2	1	50	115	0
2	El Dorado Hills Blvd	Serrano Pkwy to White Rock Rd	48,835	83	17	2	1	45	300	0
3	Latrobe Rd	White Rock Rd to Golden Foothill Pkwy	51,165	83	17	2	1	50	125	0
4	Latrobe Rd	Golden Foothill Pkwy to Investment Blvd	17,575	83	17	2	1	55	110	-13
5	Latrobe Rd	Investment Blvd to Avanti Dr/Project Q Dr	10,845	83	17	2	1	55	250	-8
6	Latrobe Rd	Avanti Dr/Project Q Dr to Project Commercial Entry	10,220	83	17	2	1	55	115	-8
7	Latrobe Rd	Project Commercial Entry to Royal Oaks Dr	10,220	83	17	2	1	55	105	-8
8	Latrobe Rd	Royal Oaks Dr to Wetsel Oviatt Rd	8,265	83	17	2	1	55	260	-8
9	Latrobe Rd	Wetsel Oviatt Rd to S Shingle Rd	7,820	83	17	2	1	55	130	0
10	Latrobe Rd	South of S Shingle Rd	5,340	83	17	2	1	55	150	0
11	Lassen Ln	West of El Dorado Hills Blvd	5,840	83	17	2	1	25	105	0
12	Serrano Pkwy	East of El Dorado Hills Blvd	8,460	83	17	1	1	45	170	0
13	White Rock Rd	West of Latrobe Rd	19,725	83	17	2	1	45	105	-6
14	White Rock Rd	East of Latrobe Rd	24,015	83	17	2	1	35	75	0
15	Golden Foothill Pkwy	West of Latrobe Rd	21,685	83	17	2	1	35	85	-6
16	Clubview Dr	East of Latrobe Rd	13,095	83	17	1	1	25	75	-6
17	Investment Blvd	Latrobe Rd to Robert J Mathews Pkwy	12,115	83	17	2	1	35	415	-13
18	Investment Blvd	West of Robert J Mathews Pkwy	1,485	83	17	2	1	35	150	0
19	Project Q Dr	West of Latrobe Rd (within project area)								
20	Avanti Dr	East of Latrobe Rd	645	83	17	1	1	25	115	-8
21	Project Commercial Entry	West of Latrobe Rd (within project area)								
22	Royal Oaks Dr	West of Latrobe Rd (within project area)								
23	Royal Oaks Dr	East of Latrobe Rd	3,325	83	17	1	1	35	175	-8
24	Wetsel Oviatt Rd	West of Latrobe Rd	445	83	17	2	1	35	2000	-8
25	S Shingle Rd	West of Latrobe Rd	1,730	83	17	1	1	25	175	0
26	S Shingle Rd	East of Latrobe Rd	3,260	83	17	1	1	45	175	0
27	Robert J Mathews Pkwy	Investment Blvd to Golden Foothill Pkwy	14,020	83	17	2	1	35	285	0
28	Robert J Mathews Pkwy	South of Investment Blvd	16,360	83	17	2	1	35	415	0
29	Palmdale Dr	South of Carson Crossing Dr	7,280	83	17	1	1	25	75	-6
30	Carson Crossing Dr	Palmdale Dr to Four Seasons Dr	6,380	83	17	1	1	35	70	-6
31	Carson Crossing Dr	Palmdale Dr to Golden Foothill Pkwy	7,340	83	17	1	1	35	70	-6

Notes: Offsets applied where existing traffic noise barriers (sound walls) are present (heights range from 6' to 13').

**Appendix B-4**  
**FHWA Highway Traffic Noise Prediction Model Inputs**  
**Creskide Village**  
**File Name: 04 2040 Cumulative+Project**  
**Run Date: 10/4/2023**



#	Roadway	Segment Description	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance to Receptor	Offset (dB)
1	El Dorado Hills Blvd	North of Serrano Prkwy	30,790	83	17	2	1	50	115	0
2	El Dorado Hills Blvd	Serrano Pkwy to White Rock Rd	49,395	83	17	2	1	45	300	0
3	Latrobe Rd	White Rock Rd to Golden Foothill Pkwy	51,865	83	17	2	1	50	125	0
4	Latrobe Rd	Golden Foothill Pkwy to Investment Blvd	22,660	83	17	2	1	55	110	-13
5	Latrobe Rd	Investment Blvd to Avanti Dr/Project Q Dr	18,290	83	17	2	1	55	250	-8
6	Latrobe Rd	Avanti Dr/Project Q Dr to Project Commercial Entry	17,480	83	17	2	1	55	115	-8
7	Latrobe Rd	Project Commercial Entry to Royal Oaks Dr	16,915	83	17	2	1	55	105	-8
8	Latrobe Rd	Royal Oaks Dr to Wetsel Oviatt Rd	9,530	83	17	2	1	55	260	-8
9	Latrobe Rd	Wetsel Oviatt Rd to S Shingle Rd	8,330	83	17	2	1	55	130	0
10	Latrobe Rd	South of S Shingle Rd	5,140	83	17	2	1	55	150	0
11	Lassen Ln	West of El Dorado Hills Blvd	5,840	83	17	2	1	25	105	0
12	Serrano Pkwy	East of El Dorado Hills Blvd	8,460	83	17	1	1	45	170	0
13	White Rock Rd	West of Latrobe Rd	19,725	83	17	2	1	45	105	-6
14	White Rock Rd	East of Latrobe Rd	24,155	83	17	2	1	35	75	0
15	Golden Foothill Pkwy	West of Latrobe Rd	19,365	83	17	2	1	35	85	-6
16	Clubview Dr	East of Latrobe Rd	12,960	83	17	1	1	25	75	-6
17	Investment Blvd	Latrobe Rd to Robert J Mathews Pkwy	9,060	83	17	2	1	35	415	-13
18	Investment Blvd	West of Robert J Mathews Pkwy	1,485	83	17	2	1	35	150	0
19	Project Q Dr	West of Latrobe Rd (within project area)	605	83	17	1	1	25	300	-8
20	Avanti Dr	East of Latrobe Rd	645	83	17	1	1	25	115	-8
21	Project Commercial Entry	West of Latrobe Rd (within project area)	755	83	17	1	1	15	250	-8
22	Royal Oaks Dr	West of Latrobe Rd (within project area)	7,985	83	17	1	1	35	250	-8
23	Royal Oaks Dr	East of Latrobe Rd	3,390	83	17	1	1	35	175	-8
24	Wetsel Oviatt Rd	West of Latrobe Rd	820	83	17	2	1	35	2000	-8
25	S Shingle Rd	West of Latrobe Rd	2,100	83	17	1	1	25	175	0
26	S Shingle Rd	East of Latrobe Rd	3,630	83	17	1	1	45	175	0
27	Robert J Mathews Pkwy	Investment Blvd to Golden Foothill Pkwy	9,785	83	17	2	1	35	285	0
28	Robert J Mathews Pkwy	South of Investment Blvd	9,150	83	17	2	1	35	415	0
29	Palmdale Dr	South of Carson Crossing Dr	7,280	83	17	1	1	25	75	-6
30	Carson Crossing Dr	Palmdale Dr to Four Seasons Dr	6,460	83	17	1	1	35	70	-6
31	Carson Crossing Dr	Palmdale Dr to Golden Foothill Pkwy	7,420	83	17	1	1	35	70	-6

Notes: Offsets applied where existing traffic noise barriers (sound walls) are present (heights range from 6' to 13').



**A**

**B**

**C**

**D**

**Legend**

- A: Site 1: Facing north towards existing commercial / offices uses
- B: Site 2: Facing east towards Latrobe Road
- C: Site 3: Facing north along Latrobe Road
- D: Site 4: Facing north towards Latrobe Road

Creekside Village Residential Development  
El Dorado County, California

Photographs of Noise & Vibration  
Survey Locations

Appendix C





**Appendix D-1**  
**Ambient Noise Monitoring Results - Site 1**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	47	52	47	43
1:00 AM	49	52	49	45
2:00 AM	48	51	48	45
3:00 AM	44	50	44	39
4:00 AM	43	49	39	35
5:00 AM	45	51	44	40
6:00 AM	42	69	38	36
7:00 AM	48	74	43	39
8:00 AM	46	65	42	39
9:00 AM	39	56	38	36
10:00 AM	40	60	37	35
11:00 AM	42	62	36	34
12:00 PM	41	59	36	34
1:00 PM	37	48	36	34
2:00 PM	37	55	36	34
3:00 PM	40	61	37	35
4:00 PM	40	58	36	35
5:00 PM	45	72	37	35
6:00 PM	38	50	36	34
7:00 PM	47	51	47	40
8:00 PM	49	53	49	47
9:00 PM	49	54	49	44
10:00 PM	48	57	48	46
11:00 PM	45	51	44	41

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	49	37	45	49	42	46
Lmax (Maximum)	74	48	59	69	49	54
L50 (Median)	49	36	40	49	38	45
L90 (Background)	47	34	37	46	35	41

Computed DNL, dB	52
% Daytime Energy	53%
% Nighttime Energy	47%

GPS Coordinates	38°36'40.89"N
	121° 3'30.97"W

**Appendix D-2**  
**Ambient Noise Monitoring Results - Site 1**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	45	56	45	38
1:00 AM	51	55	51	49
2:00 AM	51	55	51	49
3:00 AM	51	57	49	44
4:00 AM	54	57	54	51
5:00 AM	53	57	53	49
6:00 AM	41	55	39	36
7:00 AM	42	59	39	36
8:00 AM	46	69	39	36
9:00 AM	40	58	35	32
10:00 AM	38	55	35	32
11:00 AM	34	45	33	31
12:00 PM	37	55	32	30
1:00 PM	42	62	33	30
2:00 PM	33	54	31	29
3:00 PM	37	60	32	30
4:00 PM	36	57	31	29
5:00 PM	36	55	31	28
6:00 PM	38	58	31	28
7:00 PM	45	53	44	36
8:00 PM	46	54	46	42
9:00 PM	43	48	43	39
10:00 PM	51	55	49	42
11:00 PM	51	56	51	42

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	46	33	41	54	41	51
Lmax (Maximum)	69	45	56	57	55	56
L50 (Median)	46	31	36	54	39	49
L90 (Background)	42	28	33	51	36	44

Computed DNL, dB	57
% Daytime Energy	16%
% Nighttime Energy	84%

GPS Coordinates	38°36'40.89"N
	121° 3'30.97"W

**Appendix D-3**  
**Ambient Noise Monitoring Results - Site 1**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	37	44	37	35
1:00 AM	40	50	38	34
2:00 AM	36	46	35	32
3:00 AM	37	45	37	35
4:00 AM	37	42	37	35
5:00 AM	40	47	39	37
6:00 AM	43	64	42	39
7:00 AM	49	71	44	41
8:00 AM	48	72	43	39
9:00 AM	47	66	39	35
10:00 AM	39	58	37	34
11:00 AM	40	62	36	34
12:00 PM	36	58	33	31
1:00 PM	37	56	36	33
2:00 PM	38	61	36	34
3:00 PM	40	61	36	34
4:00 PM	40	60	38	35
5:00 PM	42	56	41	38
6:00 PM	42	56	41	37
7:00 PM	45	51	44	41
8:00 PM	46	51	46	41
9:00 PM	49	54	48	46
10:00 PM	47	60	46	40
11:00 PM	48	52	48	46

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	49	36	44	48	36	43
Lmax (Maximum)	72	51	60	64	42	50
L50 (Median)	48	33	40	48	35	40
L90 (Background)	46	31	37	46	32	37

Computed DNL, dB	50
% Daytime Energy	71%
% Nighttime Energy	29%

GPS Coordinates	38°36'40.89"N
	121° 3'30.97"W

**Appendix D-4**  
**Ambient Noise Monitoring Results - Site 2**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	45	71	42	39
1:00 AM	51	82	39	36
2:00 AM	40	58	37	35
3:00 AM	40	53	36	32
4:00 AM	41	53	39	36
5:00 AM	46	73	40	35
6:00 AM	46	61	42	34
7:00 AM	52	77	48	40
8:00 AM	52	70	48	39
9:00 AM	41	62	37	33
10:00 AM	51	84	36	33
11:00 AM	44	65	37	34
12:00 PM	51	71	42	35
1:00 PM	54	73	45	35
2:00 PM	53	78	40	34
3:00 PM	45	66	37	34
4:00 PM	39	56	35	32
5:00 PM	43	75	38	35
6:00 PM	43	51	42	36
7:00 PM	47	58	45	41
8:00 PM	50	61	48	43
9:00 PM	49	65	47	42
10:00 PM	48	59	46	41
11:00 PM	45	56	42	39

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	54	39	50	51	40	46
Lmax (Maximum)	84	51	68	82	53	63
L50 (Median)	48	35	42	46	36	40
L90 (Background)	43	32	37	41	32	36

Computed DNL, dB	53
% Daytime Energy	79%
% Nighttime Energy	21%

GPS Coordinates	38°36'55.23"N
	121° 3'11.79"W

**Appendix D-5**  
**Ambient Noise Monitoring Results - Site 2**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	44	60	41	38
1:00 AM	43	61	40	38
2:00 AM	42	57	40	38
3:00 AM	44	65	41	38
4:00 AM	45	61	43	41
5:00 AM	56	88	40	35
6:00 AM	43	58	38	30
7:00 AM	47	60	44	34
8:00 AM	51	68	48	38
9:00 AM	39	58	35	32
10:00 AM	44	67	36	33
11:00 AM	60	83	48	36
12:00 PM	61	83	49	35
1:00 PM	58	74	48	35
2:00 PM	58	79	44	33
3:00 PM	59	83	49	34
4:00 PM	56	77	43	32
5:00 PM	45	68	37	31
6:00 PM	38	56	37	34
7:00 PM	45	57	43	38
8:00 PM	48	60	46	42
9:00 PM	46	59	44	39
10:00 PM	44	56	42	38
11:00 PM	40	54	37	34

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	61	38	55	56	40	48
Lmax (Maximum)	83	56	69	88	54	62
L50 (Median)	49	35	43	43	37	40
L90 (Background)	42	31	35	41	30	37

Computed DNL, dB	57
% Daytime Energy	90%
% Nighttime Energy	10%

GPS Coordinates	38°36'55.23"N
	121° 3'11.79"W

**Appendix D-6**  
**Ambient Noise Monitoring Results - Site 2**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	40	55	38	34
1:00 AM	49	83	37	32
2:00 AM	39	60	33	28
3:00 AM	39	52	37	32
4:00 AM	39	56	33	29
5:00 AM	46	59	44	36
6:00 AM	48	63	45	40
7:00 AM	51	63	49	43
8:00 AM	48	69	44	36
9:00 AM	40	57	37	33
10:00 AM	42	64	37	33
11:00 AM	51	74	40	33
12:00 PM	54	75	42	33
1:00 PM	60	79	49	37
2:00 PM	61	82	52	39
3:00 PM	54	74	44	36
4:00 PM	56	79	45	37
5:00 PM	51	77	45	41
6:00 PM	46	55	46	43
7:00 PM	48	56	48	45
8:00 PM	49	67	47	44
9:00 PM	46	60	44	39
10:00 PM	47	70	39	33
11:00 PM	41	54	35	32

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	61	40	54	49	39	45
Lmax (Maximum)	82	55	69	83	52	61
L50 (Median)	52	37	45	45	33	38
L90 (Background)	45	33	38	40	28	33

Computed DNL, dB	54
% Daytime Energy	93%
% Nighttime Energy	7%

GPS Coordinates	38°36'55.23"N
	121° 3'11.79"W

**Appendix D-7**  
**Ambient Noise Monitoring Results - Site 3**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	53	74	44	42
1:00 AM	50	70	42	39
2:00 AM	48	71	42	40
3:00 AM	48	67	42	39
4:00 AM	52	74	43	40
5:00 AM	56	79	45	40
6:00 AM	58	76	48	38
7:00 AM	63	90	53	44
8:00 AM	63	83	54	46
9:00 AM	63	89	54	43
10:00 AM	65	88	55	42
11:00 AM	66	96	56	42
12:00 PM	61	76	54	42
1:00 PM	62	81	55	41
2:00 PM	63	85	56	42
3:00 PM	63	78	56	42
4:00 PM	63	77	57	42
5:00 PM	62	79	57	43
6:00 PM	62	80	56	46
7:00 PM	60	77	54	45
8:00 PM	60	80	53	42
9:00 PM	59	79	51	41
10:00 PM	57	76	48	36
11:00 PM	55	78	41	35

Statistical Summary						
Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)			
	High	Low	Average	High	Low	Average
Leq (Average)	66	59	63	58	48	55
Lmax (Maximum)	96	76	83	79	67	74
L50 (Median)	57	51	55	48	41	44
L90 (Background)	46	41	43	42	35	39

Computed DNL, dB	63
% Daytime Energy	92%
% Nighttime Energy	8%

GPS Coordinates	38°37'1.04"N
	121° 2'58.11"W

**Appendix D-8**  
**Ambient Noise Monitoring Results - Site 3**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	51	74	37	34
1:00 AM	50	75	36	34
2:00 AM	51	78	35	33
3:00 AM	45	67	35	32
4:00 AM	48	71	35	32
5:00 AM	54	77	37	33
6:00 AM	55	74	40	35
7:00 AM	58	79	47	38
8:00 AM	60	84	52	40
9:00 AM	60	78	49	38
10:00 AM	61	81	53	40
11:00 AM	60	83	50	39
12:00 PM	60	80	52	39
1:00 PM	61	83	53	38
2:00 PM	61	76	53	40
3:00 PM	60	80	50	40
4:00 PM	61	80	52	39
5:00 PM	60	77	53	42
6:00 PM	61	83	54	43
7:00 PM	60	80	52	41
8:00 PM	59	79	51	43
9:00 PM	57	80	46	38
10:00 PM	55	78	40	32
11:00 PM	51	72	35	33

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	61	57	60	55	45	52
Lmax (Maximum)	84	76	80	78	67	74
L50 (Median)	54	46	51	40	35	37
L90 (Background)	43	38	40	35	32	33

Computed DNL, dB	61
% Daytime Energy	91%
% Nighttime Energy	9%

GPS Coordinates	38°37'1.04"N
	121° 2'58.11"W

**Appendix D-9**  
**Ambient Noise Monitoring Results - Site 3**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	46	69	34	32
1:00 AM	47	71	33	31
2:00 AM	50	76	36	34
3:00 AM	51	76	34	32
4:00 AM	53	75	40	37
5:00 AM	60	76	53	45
6:00 AM	62	83	55	45
7:00 AM	63	79	57	49
8:00 AM	62	80	55	47
9:00 AM	62	81	53	42
10:00 AM	61	81	52	41
11:00 AM	62	80	54	41
12:00 PM	62	86	51	41
1:00 PM	62	80	52	41
2:00 PM	62	78	55	43
3:00 PM	63	81	57	43
4:00 PM	64	83	56	43
5:00 PM	64	86	57	43
6:00 PM	62	80	56	44
7:00 PM	62	89	53	42
8:00 PM	60	83	51	41
9:00 PM	57	80	46	38
10:00 PM	61	90	42	37
11:00 PM	51	72	41	38

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	64	57	62	62	46	57
Lmax (Maximum)	89	78	82	90	69	77
L50 (Median)	57	46	54	55	33	41
L90 (Background)	49	38	43	45	31	37

Computed DNL, dB	65
% Daytime Energy	84%
% Nighttime Energy	16%

GPS Coordinates	38°37'1.04"N
	121° 2'58.11"W

**Appendix D-10**  
**Ambient Noise Monitoring Results - Site 4**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	47	66	40	38
1:00 AM	44	59	39	35
2:00 AM	44	60	42	40
3:00 AM	42	57	40	34
4:00 AM	45	64	39	33
5:00 AM	51	66	44	40
6:00 AM	53	68	44	38
7:00 AM	57	81	50	39
8:00 AM	55	74	49	39
9:00 AM	53	76	49	37
10:00 AM	53	74	48	34
11:00 AM	52	72	48	34
12:00 PM	51	67	47	33
1:00 PM	52	65	49	38
2:00 PM	52	75	48	34
3:00 PM	52	66	48	34
4:00 PM	52	64	49	35
5:00 PM	51	64	49	38
6:00 PM	52	70	49	38
7:00 PM	53	67	50	42
8:00 PM	54	68	50	44
9:00 PM	53	71	48	42
10:00 PM	52	66	47	45
11:00 PM	51	68	47	46

Statistical Summary						
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	57	51	53	53	42	49
Lmax (Maximum)	81	64	70	68	57	64
L50 (Median)	50	47	49	47	39	42
L90 (Background)	44	33	37	46	33	39

Leq (Average)
Lmax (Maximum)
L50 (Median)
L90 (Background)

Computed DNL, dB	56
% Daytime Energy	80%
% Nighttime Energy	20%

GPS Coordinates	38°36'38.11"N
	121° 2'35.01"W

**Appendix D-11**  
**Ambient Noise Monitoring Results - Site 4**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**

Hour	Leq	Lmax	L50	L90
12:00 AM	46	63	41	33
1:00 AM	47	65	44	42
2:00 AM	47	69	44	43
3:00 AM	46	62	44	42
4:00 AM	46	64	45	41
5:00 AM	47	61	43	40
6:00 AM	47	66	39	32
7:00 AM	50	67	42	33
8:00 AM	53	79	46	35
9:00 AM	51	66	43	29
10:00 AM	51	69	46	33
11:00 AM	50	69	44	30
12:00 PM	50	69	45	31
1:00 PM	50	68	46	32
2:00 PM	50	64	44	31
3:00 PM	50	67	44	28
4:00 PM	50	69	45	29
5:00 PM	49	64	44	27
6:00 PM	50	69	46	32
7:00 PM	53	72	48	39
8:00 PM	53	66	49	43
9:00 PM	50	69	45	40
10:00 PM	50	69	46	44
11:00 PM	47	67	45	42

**Statistical Summary**

	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	53	49	51	50	46	47
Lmax (Maximum)	79	64	68	69	61	65
L50 (Median)	49	42	45	46	39	43
L90 (Background)	43	27	33	44	32	40

Computed DNL, dB	54
% Daytime Energy	79%
% Nighttime Energy	21%

GPS Coordinates	38°36'38.11"N
	121° 2'35.01"W

**Appendix D-12**  
**Ambient Noise Monitoring Results - Site 4**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**

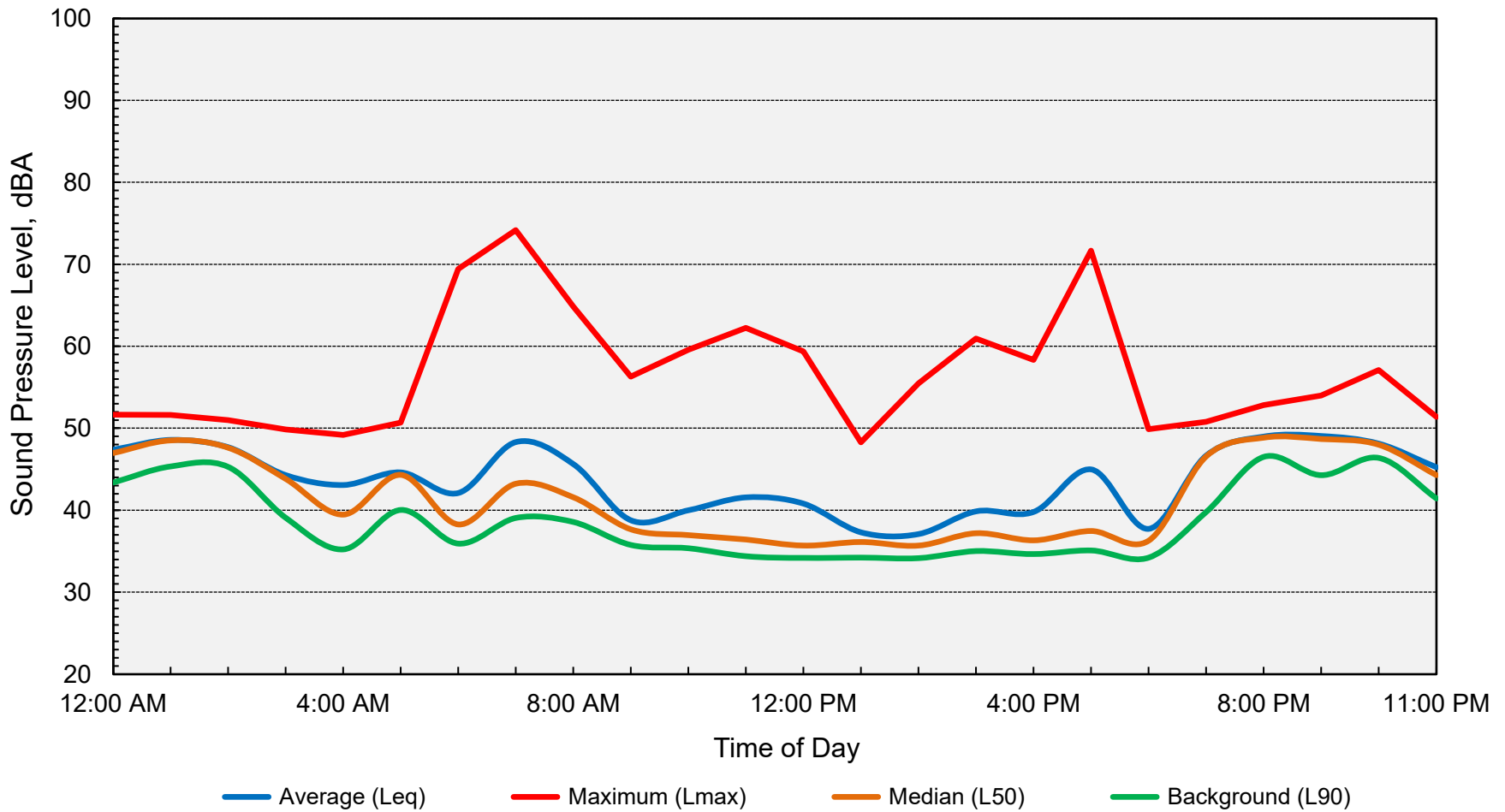
Hour	Leq	Lmax	L50	L90
12:00 AM	42	60	39	27
1:00 AM	46	59	45	44
2:00 AM	45	68	37	33
3:00 AM	44	67	32	26
4:00 AM	45	64	32	29
5:00 AM	53	67	49	37
6:00 AM	54	71	51	39
7:00 AM	55	68	52	43
8:00 AM	53	69	50	41
9:00 AM	53	71	48	34
10:00 AM	52	71	46	31
11:00 AM	52	67	47	34
12:00 PM	51	72	44	31
1:00 PM	51	67	45	34
2:00 PM	50	66	46	36
3:00 PM	53	74	48	36
4:00 PM	53	71	49	37
5:00 PM	53	70	51	37
6:00 PM	53	68	50	36
7:00 PM	54	76	51	45
8:00 PM	52	69	46	38
9:00 PM	52	71	46	40
10:00 PM	57	82	45	36
11:00 PM	46	62	33	27

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	55	50	53	57	42	51
Lmax (Maximum)	76	66	70	82	59	67
L50 (Median)	52	44	48	51	32	40
L90 (Background)	45	31	37	44	26	33

Computed DNL, dB	58
% Daytime Energy	70%
% Nighttime Energy	30%

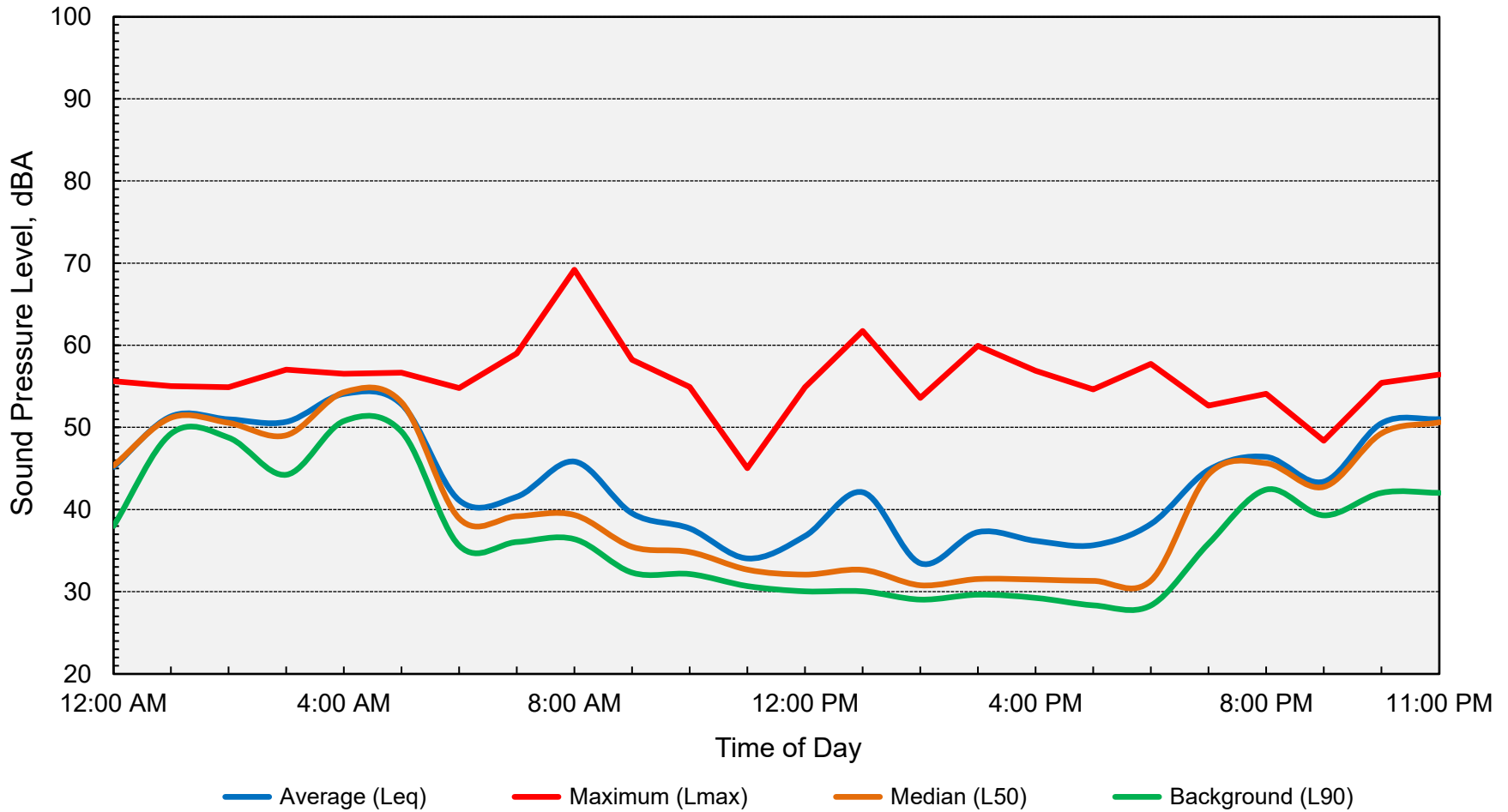
GPS Coordinates	38°36'38.11"N
	121° 2'35.01"W

**Appendix E-1**  
**Ambient Noise Monitoring Results - Site 1**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**



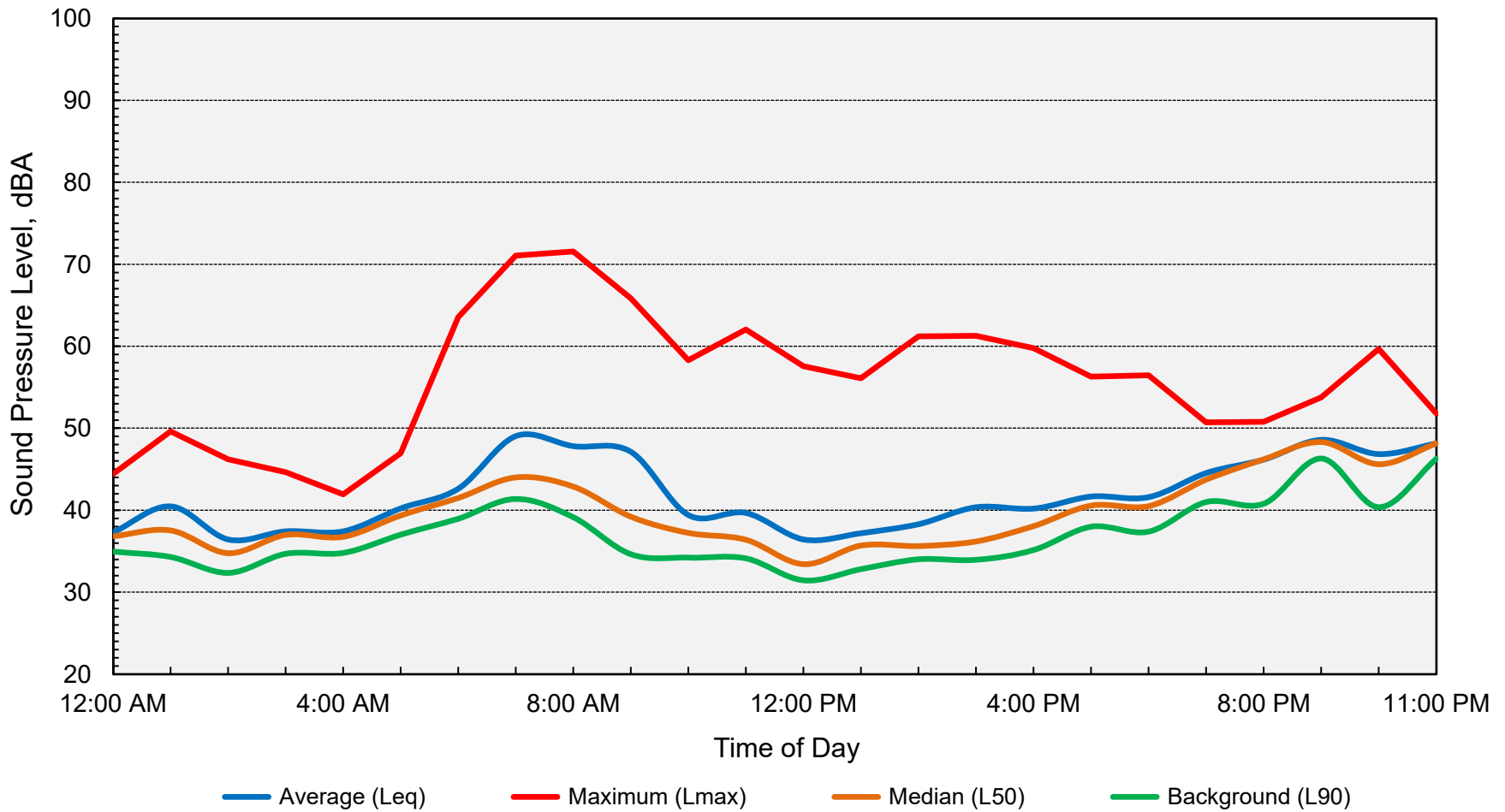
**Computed DNL = 52 dB**

**Appendix E-2**  
**Ambient Noise Monitoring Results - Site 1**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**



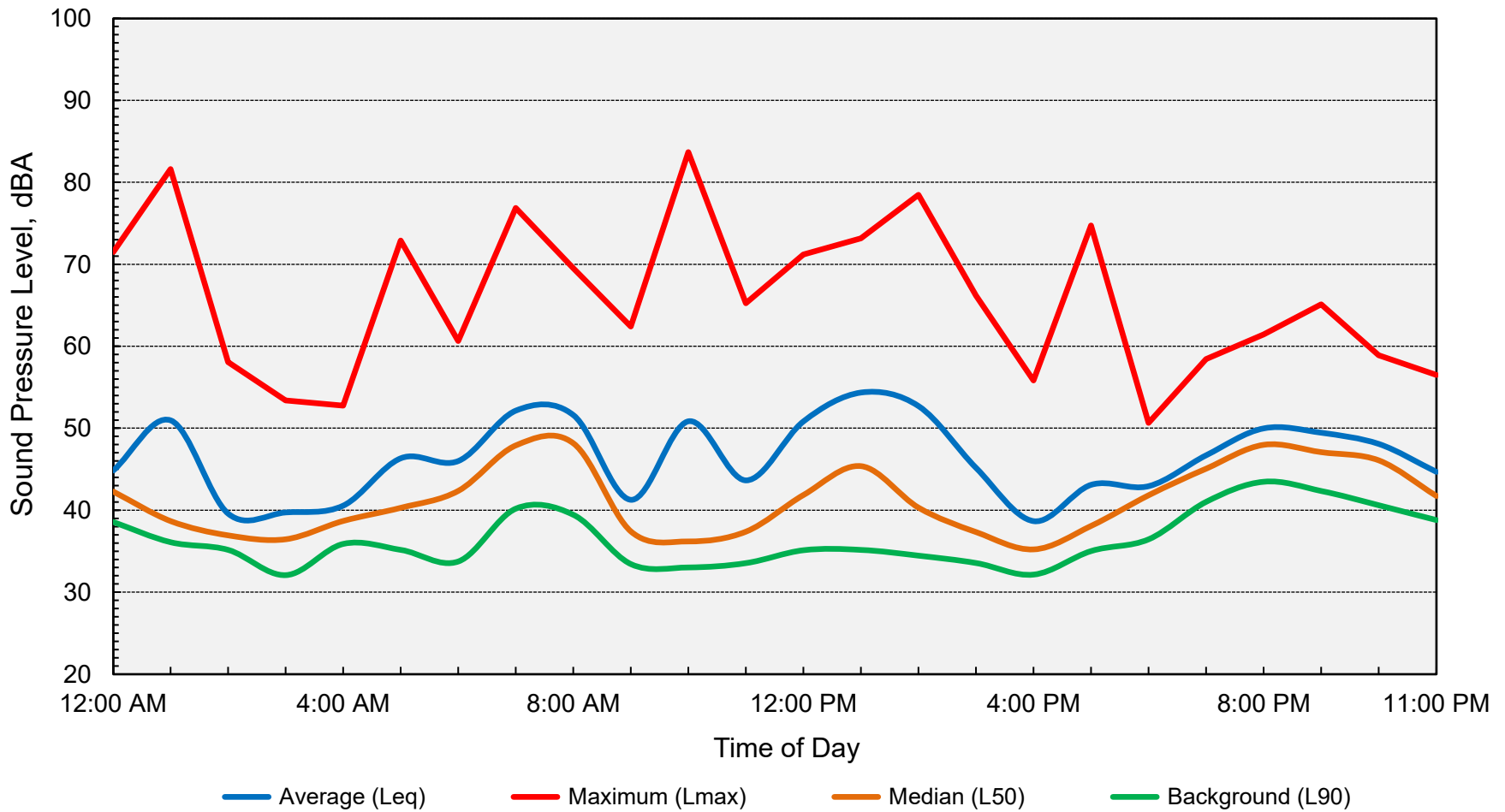
**Computed DNL = 57 dB**

**Appendix E-3**  
**Ambient Noise Monitoring Results - Site 1**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**



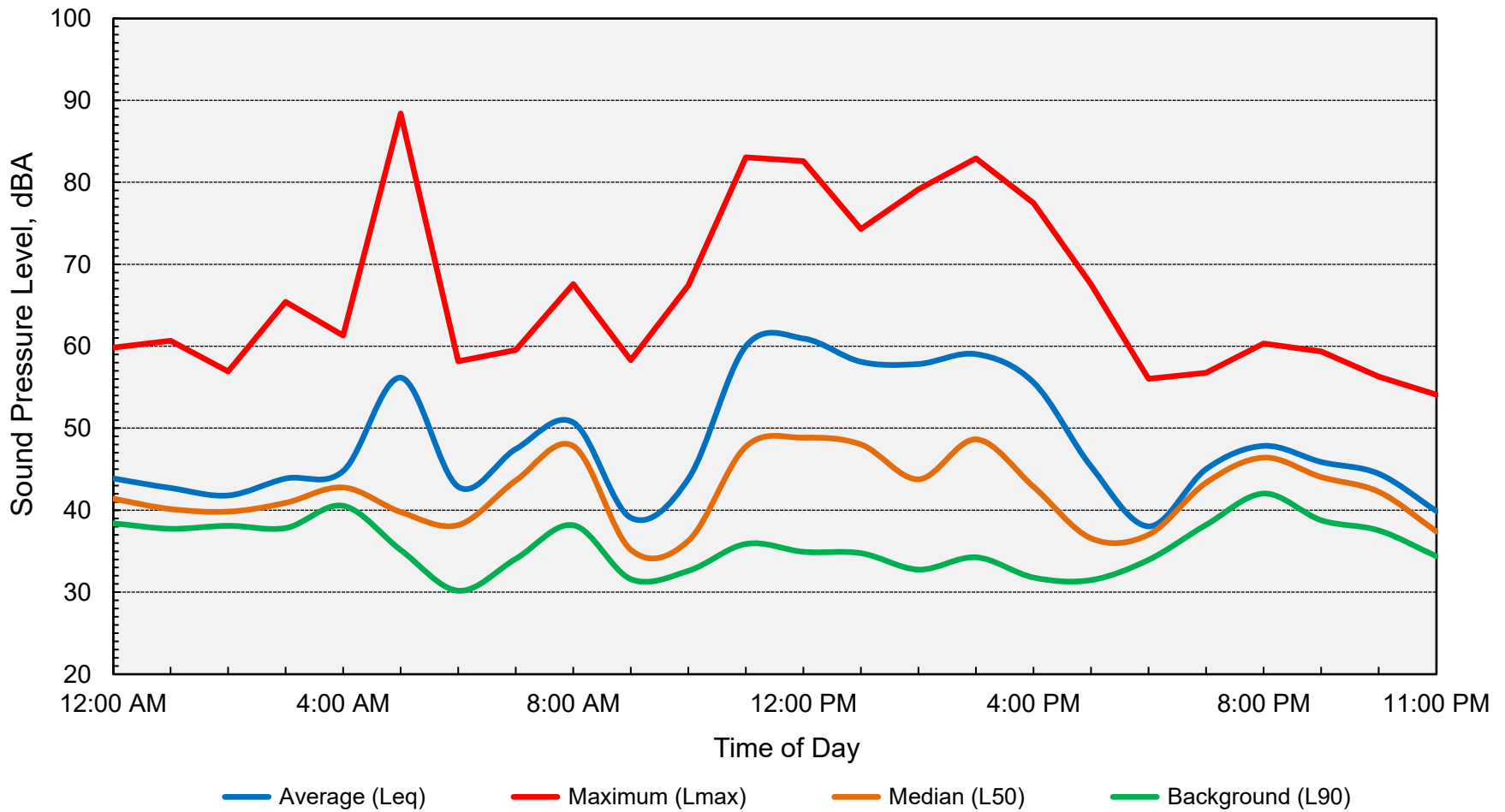
**Computed DNL = 50 dB**

**Appendix E-4**  
**Ambient Noise Monitoring Results - Site 2**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**



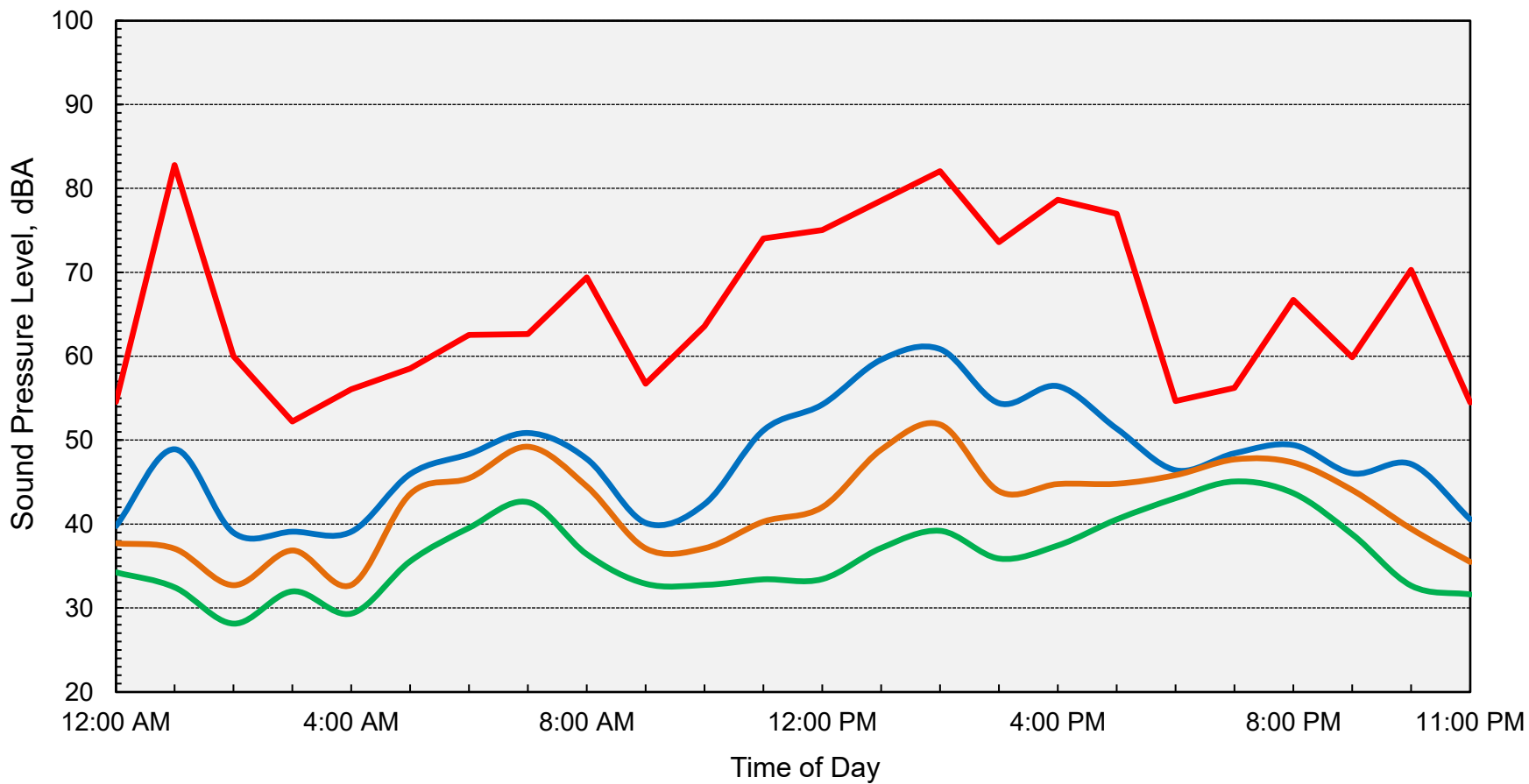
**Computed DNL = 53 dB**

**Appendix E-5**  
**Ambient Noise Monitoring Results - Site 2**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**



**Computed DNL = 57 dB**

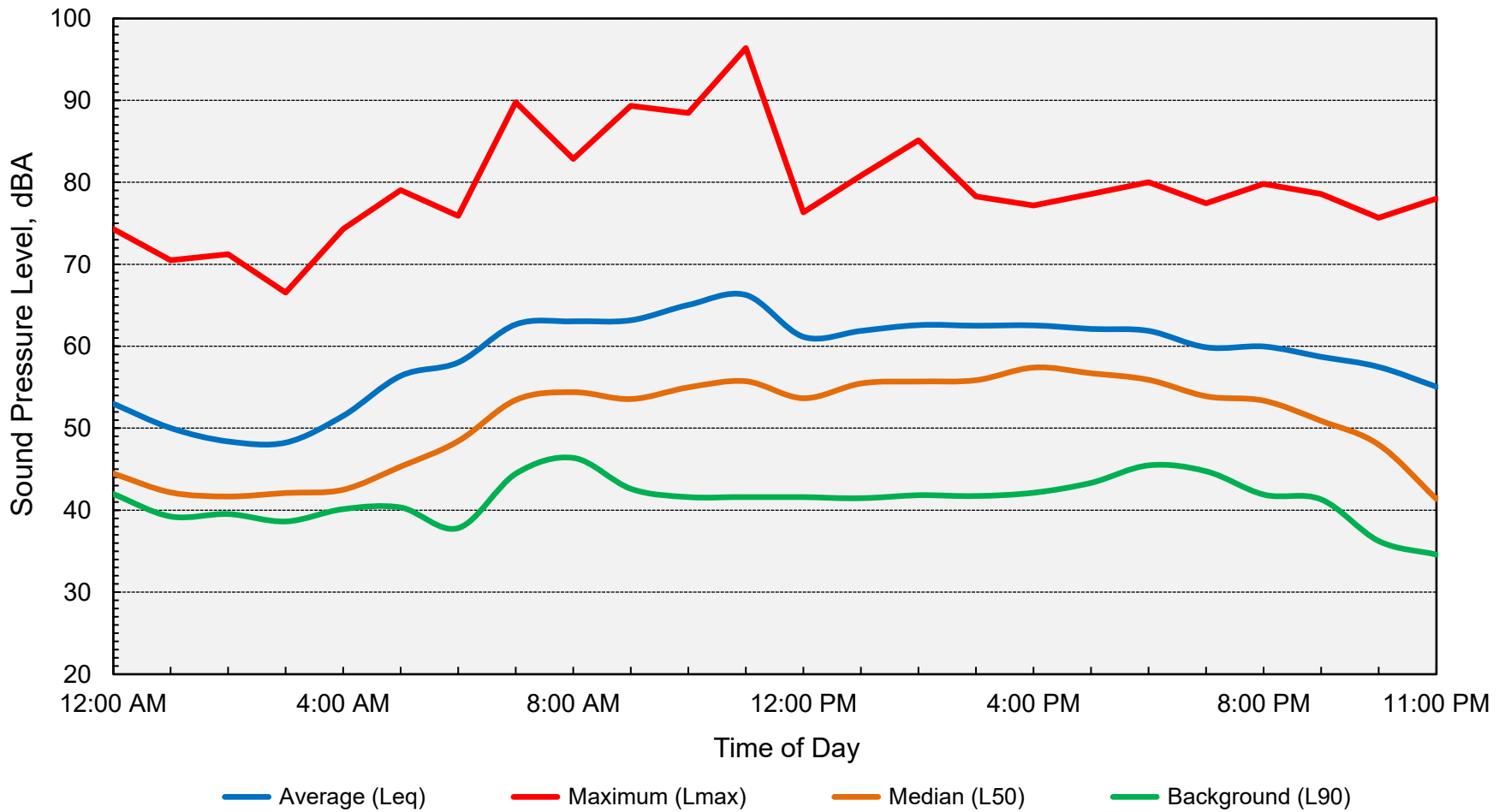
**Appendix E-6**  
**Ambient Noise Monitoring Results - Site 2**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**



— Average (Leq)     
 — Maximum (Lmax)     
 — Median (L50)     
 — Background (L90)

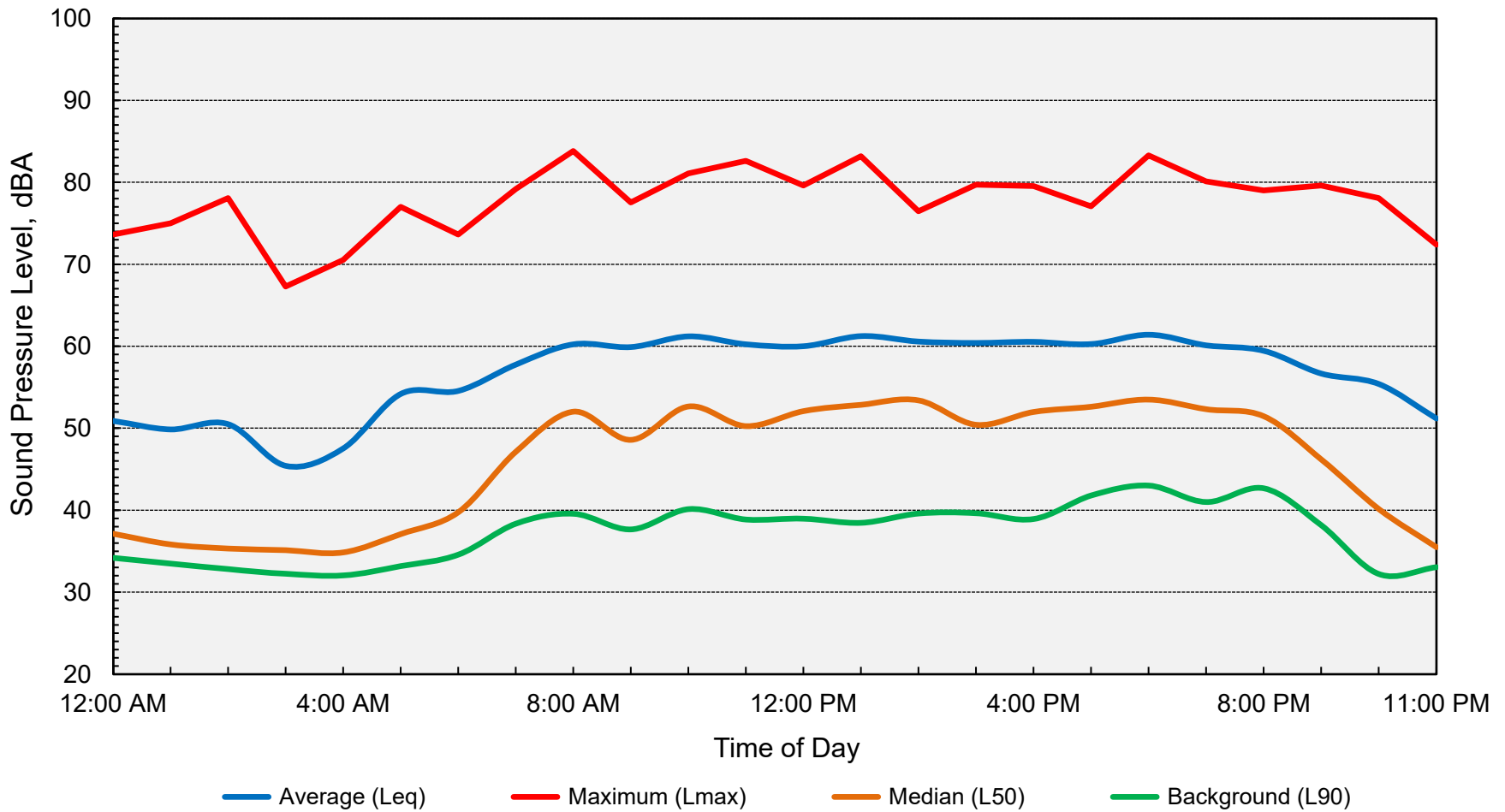
**Computed DNL = 54 dB**

**Appendix E-7**  
**Ambient Noise Monitoring Results - Site 3**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**



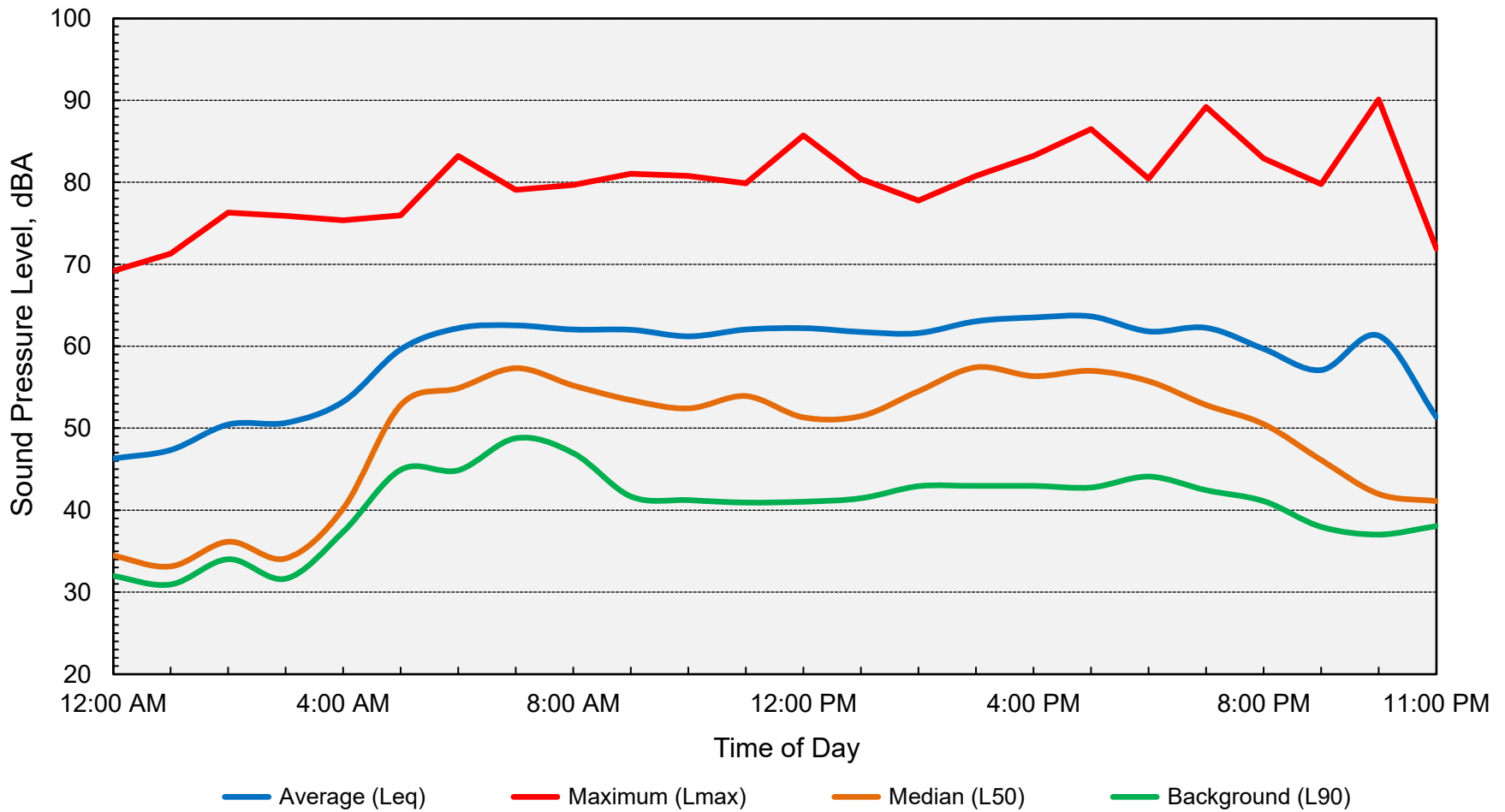
**Computed DNL = 63 dB**

**Appendix E-8**  
**Ambient Noise Monitoring Results - Site 3**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**



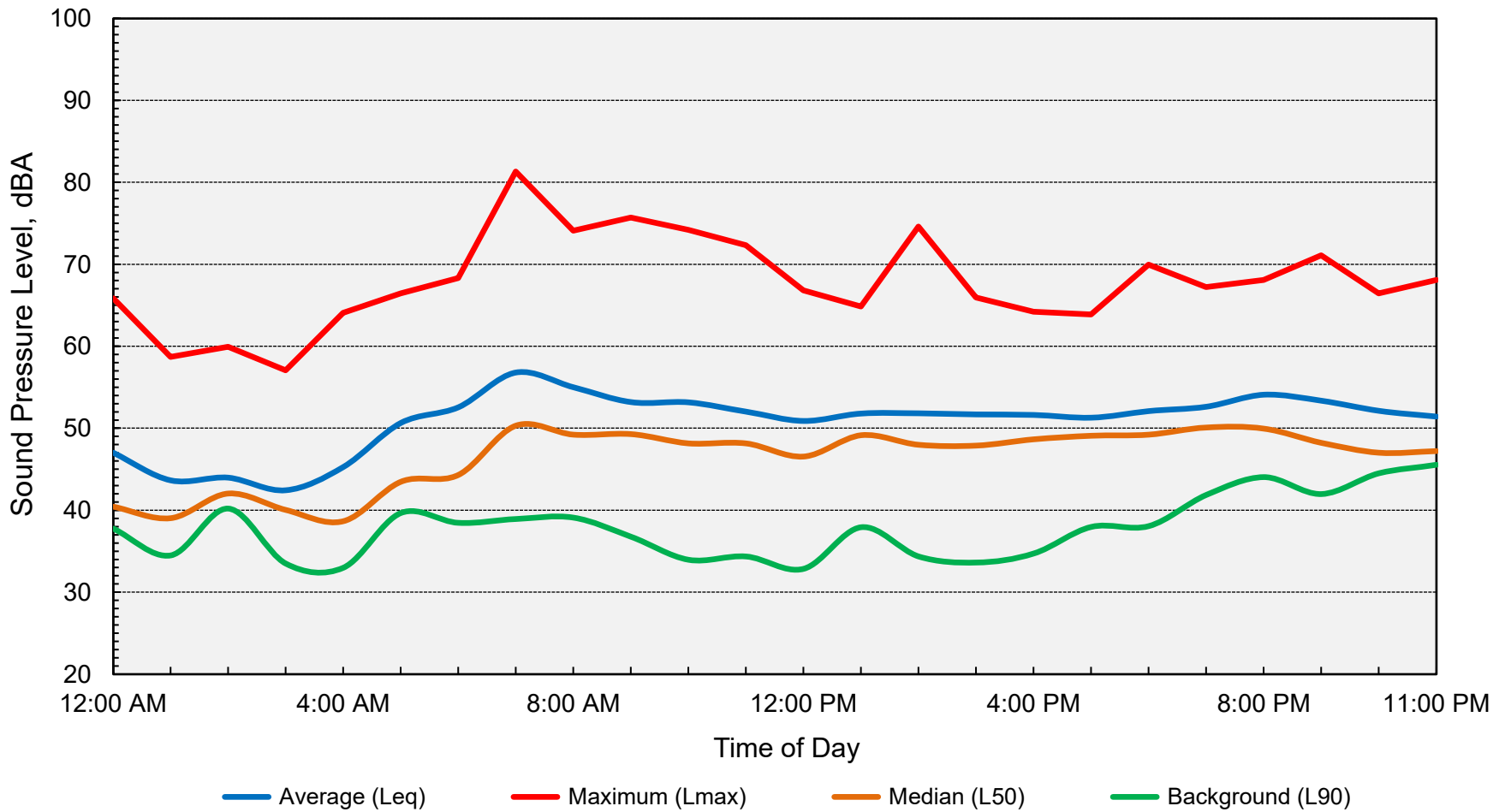
**Computed DNL = 61 dB**

**Appendix E-9**  
**Ambient Noise Monitoring Results - Site 3**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**



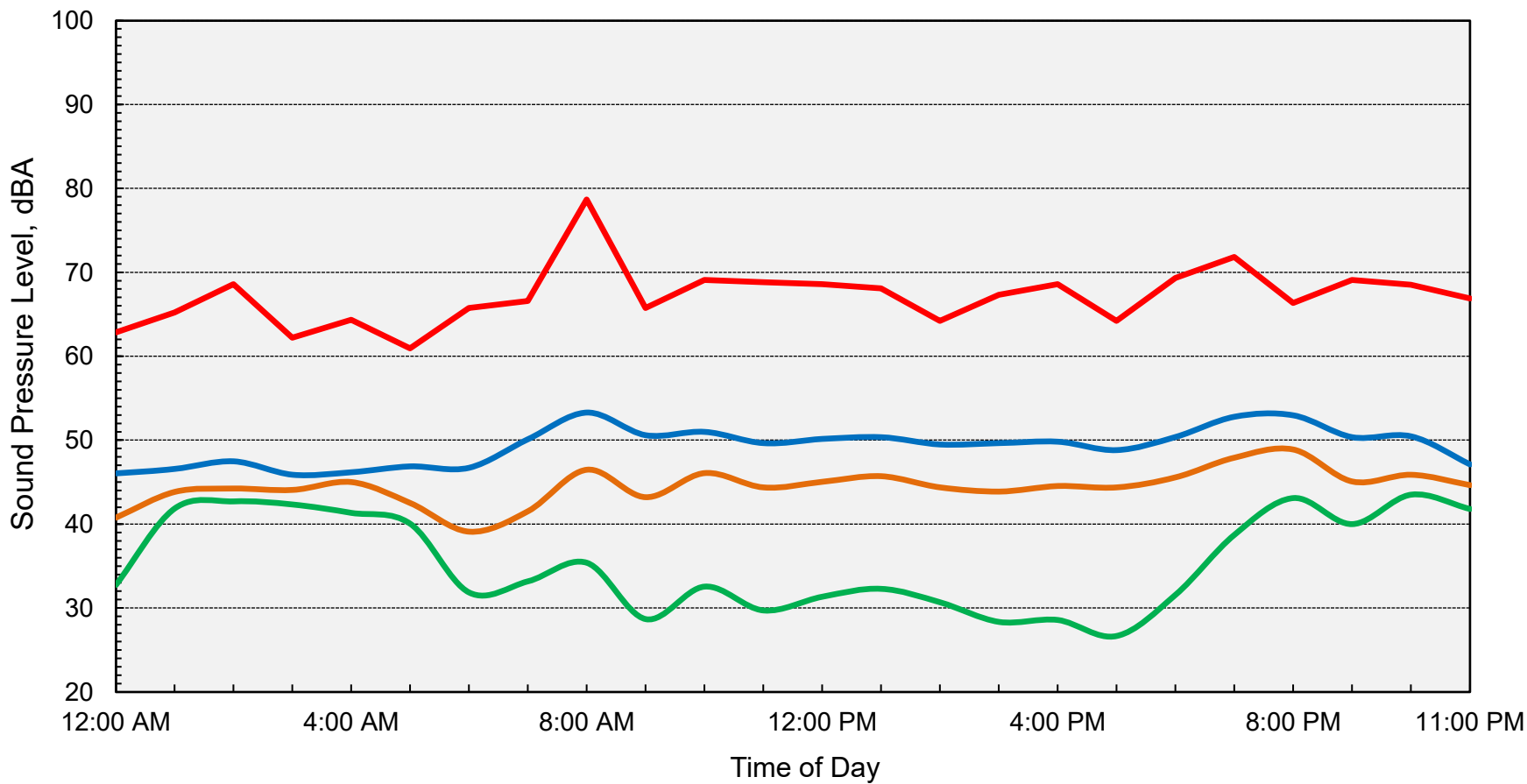
**Computed DNL = 65 dB**

**Appendix E-10**  
**Ambient Noise Monitoring Results - Site 4**  
**Creekside Village Residential Development - El Dorado County, California**  
**Saturday, October 03, 2020**



**Computed DNL = 56 dB**

**Appendix E-11**  
**Ambient Noise Monitoring Results - Site 4**  
**Creekside Village Residential Development - El Dorado County, California**  
**Sunday, October 04, 2020**

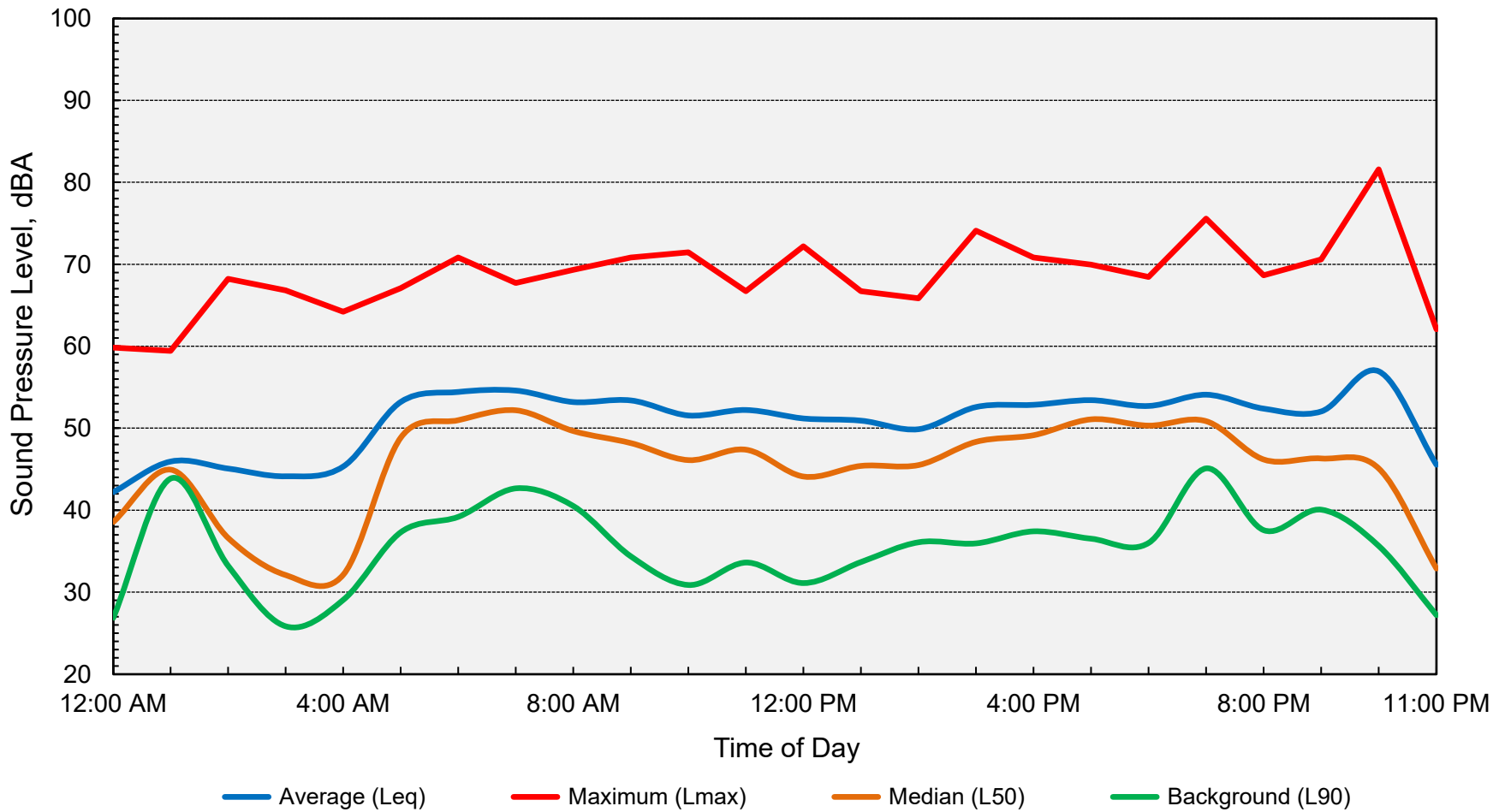


— Average (Leq)     
 — Maximum (Lmax)     
 — Median (L50)     
 — Background (L90)

**Computed DNL = 54 dB**



**Appendix E-12**  
**Ambient Noise Monitoring Results - Site 4**  
**Creekside Village Residential Development - El Dorado County, California**  
**Monday, October 05, 2020**



**Computed DNL = 58 dB**

# Appendix F

## CREEKSIDE VILLAGE SPECIFIC PLAN

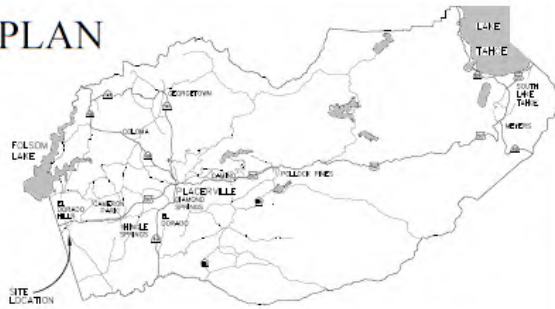
GPA 20-001

### AREA OF POTENTIAL EFFECT - (APE)

EL DORADO HILLS, CALIFORNIA

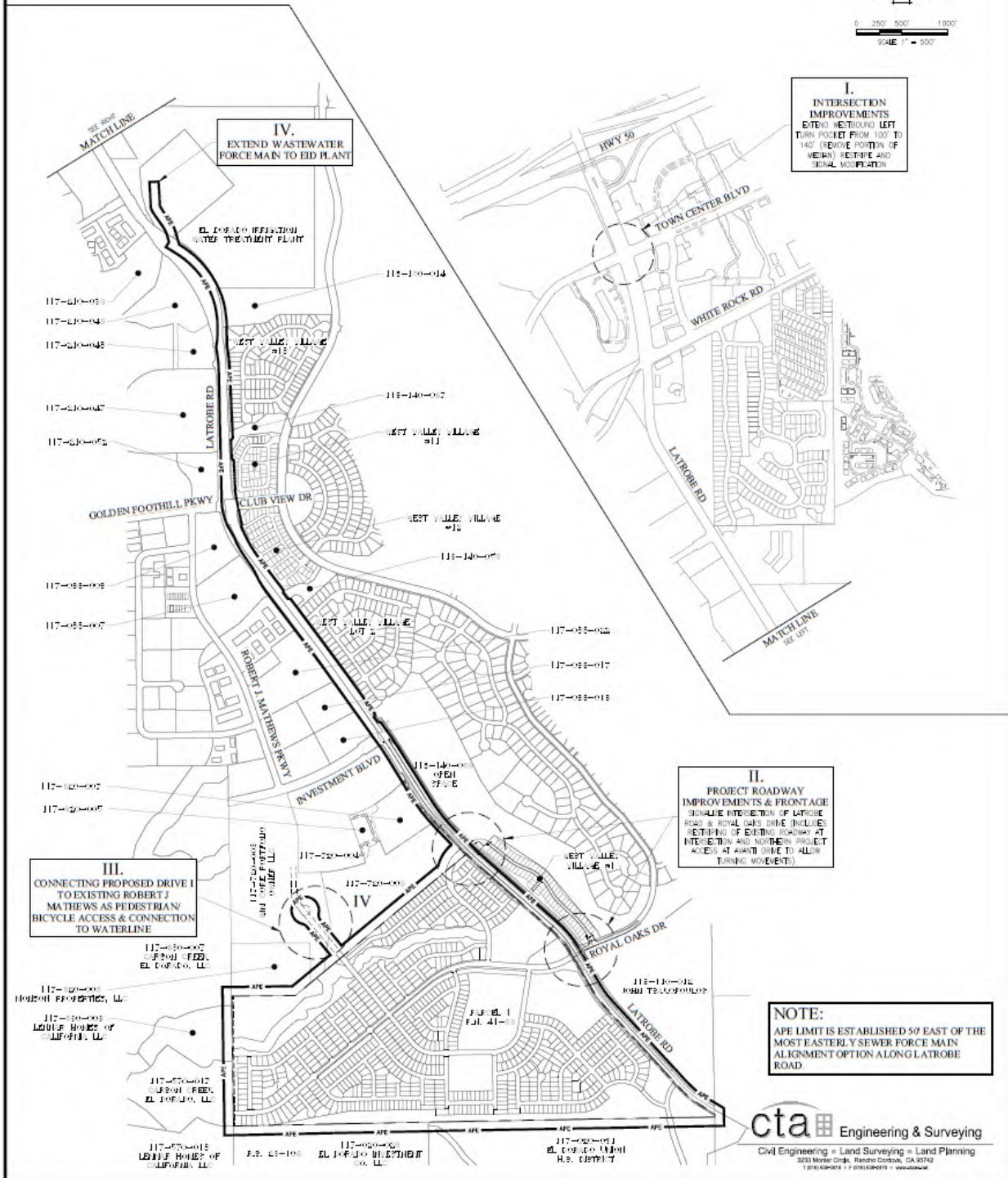
SCALE: 1"=50'

FEBRUARY, 2024



AREA OF POTENTIAL EFFECT — APE —

- I. INTERSECTION IMPROVEMENTS (TOWN CENTER & LATROBE)
- II. TRAFFIC/INTERSECTION IMPROVEMENTS (ROYAL OAKS/LATROBE ROAD)
- III. WATERLINE/ PEDESTRIAN CONNECTION
- IV. WASTEWATER EXTENSION



**NOTE:**  
APE LIMIT IS ESTABLISHED 50' EAST OF THE MOST EASTERLY SEWER FORCE MAIN ALIGNMENT OPTION ALONG LATROBE ROAD.

**Appendix G-1**  
**FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)**  
**Noise Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
 Project Name: Creekside Village Residential Development  
 Roadway Name: Latrobe Road

**Traffic Data:**

Year: Future (2040)  
 Average Daily Traffic Volume: 17,480  
 Percent Daytime Traffic: 83  
 Percent Nighttime Traffic: 17  
 Percent Medium Trucks (2 axle): 2  
 Percent Heavy Trucks (3+ axle): 1  
 Assumed Vehicle Speed (mph): 55  
 Intervening Ground Type (hard/soft): **Soft**

**Traffic Noise Levels:**

		----- DNL, dB -----					
Location	Description	Distance	Offset (dB)	Autos	Medium Trucks	Heavy Trucks	Total
Park	Village Park	300		60	50	51	61
SFL Lots	Nearest Backyards	95		67	57	58	68
588-598	Nearest First-Floor Facades	110		66	56	57	67
	Nearest Upper-Floor Facades	110	2	68	58	59	69

**Traffic Noise Contours (No Calibration Offset):**

DNL Contour (dB)	Distance from Centerline (ft)
75	32
70	70
65	150
60	324

- Notes:**
1. Future (Cumulative 2040 Plus Project conditions) average daily traffic volume for Latrobe Road was calculated using data provided in the traffic impact study conducted for the project by T. Kear Transportation Planning & Management, Inc.
  2. Offset of +2 dB offset was applied at upper-level building facades to account for reduced ground absorption of sound at elevated positions.



**Appendix G-2**  
**FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)**  
**Noise Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
 Project Name: Creekside Village Residential Development  
 Roadway Name: Latrobe Road

**Traffic Data:**

Year: Future (2040)  
 Average Daily Traffic Volume: 9,530  
 Percent Daytime Traffic: 83  
 Percent Nighttime Traffic: 17  
 Percent Medium Trucks (2 axle): 2  
 Percent Heavy Trucks (3+ axle): 1  
 Assumed Vehicle Speed (mph): 55  
 Intervening Ground Type (hard/soft): **Soft**

**Traffic Noise Levels:**

Location	Description	Distance	Offset (dB)	----- DNL, dB -----			Total
				Autos	Medium Trucks	Heavy Trucks	
Park	Neighborhood Park 1	150		61	52	53	62
SFL Lots 550-560	Nearest Backyards	95		64	55	56	65
	Nearest First-Floor Facades	110		63	54	55	64
	Nearest Upper-Floor Facades	110	2	65	56	57	66
SFM Large Lot 2	Nearest Backyards	230		59	49	50	60
	Nearest First-Floor Facades	60		67	58	59	68
	Nearest Upper-Floor Facades	60	2	69	60	61	70

**Traffic Noise Contours (No Calibration Offset):**

DNL Contour (dB)	Distance from Centerline (ft)
75	22
70	47
65	100
60	216

- Notes:**
1. Future (Cumulative 2040 Plus Project conditions) average daily traffic volume for Latrobe Road was calculated using data provided in the traffic impact study conducted for the project by T. Kear Transportation Planning & Management, Inc.
  2. Offset of +2 dB offset was applied at upper-level building facades to account for reduced ground absorption of sound at elevated positions.

**Appendix H-1  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 588

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 67  
Medium Truck DNL (dB): 57  
Heavy Truck DNL (dB): 58

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 569  
Medium Truck Elevation: 571  
Heavy Truck Elevation: 577  
Pad/Ground Elevation at Receiver: 556  
Receiver Elevation: 561  
Base of Barrier Elevation: 556  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
562	6	62	52	54	<b>63</b>	Yes	No	No
563	7	61	52	53	<b>62</b>	Yes	Yes	Yes
564	8	60	51	52	<b>61</b>	Yes	Yes	Yes
<b>565</b>	<b>9</b>	<b>59</b>	<b>49</b>	<b>51</b>	<b>60</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
566	10	57	48	50	<b>58</b>	Yes	Yes	Yes
567	11	56	47	48	<b>57</b>	Yes	Yes	Yes
568	12	55	46	47	<b>56</b>	Yes	Yes	Yes
569	13	54	45	46	<b>55</b>	Yes	Yes	Yes
570	14	53	44	45	<b>55</b>	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-2  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 589

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 67  
Medium Truck DNL (dB): 57  
Heavy Truck DNL (dB): 58

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 569  
Medium Truck Elevation: 571  
Heavy Truck Elevation: 577  
Pad/Ground Elevation at Receiver: 552  
Receiver Elevation: 557  
Base of Barrier Elevation: 552  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
558	6	62	53	54	<b>63</b>	No	No	No
559	7	62	52	53	<b>63</b>	Yes	Yes	No
560	8	61	51	53	<b>62</b>	Yes	Yes	Yes
<b>561</b>	<b>9</b>	<b>59</b>	<b>50</b>	<b>52</b>	<b>60</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
562	10	58	48	50	<b>59</b>	Yes	Yes	Yes
563	11	57	47	49	<b>58</b>	Yes	Yes	Yes
564	12	56	46	48	<b>57</b>	Yes	Yes	Yes
565	13	55	45	47	<b>56</b>	Yes	Yes	Yes
566	14	54	44	46	<b>55</b>	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-3  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 593

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 67  
Medium Truck DNL (dB): 57  
Heavy Truck DNL (dB): 58

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 569  
Medium Truck Elevation: 571  
Heavy Truck Elevation: 577  
Pad/Ground Elevation at Receiver: 552  
Receiver Elevation: 557  
Base of Barrier Elevation: 552  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
558	6	62	53	54	<b>63</b>	No	No	No
559	7	62	52	53	<b>63</b>	Yes	Yes	No
560	8	61	51	53	<b>62</b>	Yes	Yes	Yes
<b>561</b>	<b>9</b>	<b>59</b>	<b>50</b>	<b>52</b>	<b>60</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
562	10	58	48	50	<b>59</b>	Yes	Yes	Yes
563	11	57	47	49	<b>58</b>	Yes	Yes	Yes
564	12	56	46	48	<b>57</b>	Yes	Yes	Yes
565	13	55	45	47	<b>56</b>	Yes	Yes	Yes
566	14	54	44	46	<b>55</b>	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-4  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 597

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 67  
Medium Truck DNL (dB): 57  
Heavy Truck DNL (dB): 58

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 568  
Medium Truck Elevation: 570  
Heavy Truck Elevation: 576  
Pad/Ground Elevation at Receiver: 554  
Receiver Elevation: 559  
Base of Barrier Elevation: 554  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
560	6	62	52	54	<b>63</b>	Yes	No	No
561	7	62	52	53	<b>63</b>	Yes	Yes	Yes
562	8	60	51	53	<b>61</b>	Yes	Yes	Yes
<b>563</b>	<b>9</b>	<b>59</b>	<b>49</b>	<b>51</b>	<b>60</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
564	10	57	48	50	<b>58</b>	Yes	Yes	Yes
565	11	56	47	48	<b>57</b>	Yes	Yes	Yes
566	12	55	46	48	<b>56</b>	Yes	Yes	Yes
567	13	54	45	47	<b>55</b>	Yes	Yes	Yes
568	14	54	44	46	<b>55</b>	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-5  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 598

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 67  
Medium Truck DNL (dB): 57  
Heavy Truck DNL (dB): 58

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 567  
Medium Truck Elevation: 569  
Heavy Truck Elevation: 575  
Pad/Ground Elevation at Receiver: 557  
Receiver Elevation: 562  
Base of Barrier Elevation: 557  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
563	6	62	52	53	<b>63</b>	Yes	Yes	No
564	7	61	52	53	<b>62</b>	Yes	Yes	Yes
565	8	59	50	52	<b>61</b>	Yes	Yes	Yes
<b>566</b>	<b>9</b>	<b>58</b>	<b>49</b>	<b>51</b>	<b>59</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
567	10	57	47	49	<b>58</b>	Yes	Yes	Yes
568	11	56	46	48	<b>57</b>	Yes	Yes	Yes
569	12	55	45	47	<b>56</b>	Yes	Yes	Yes
570	13	54	44	46	<b>55</b>	Yes	Yes	Yes
571	14	53	44	45	<b>54</b>	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-6  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 550

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 64  
Medium Truck DNL (dB): 55  
Heavy Truck DNL (dB): 56

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 593  
Medium Truck Elevation: 595  
Heavy Truck Elevation: 601  
Pad/Ground Elevation at Receiver: 583  
Receiver Elevation: 588  
Base of Barrier Elevation: 583  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
589	6	59	50	51	60	Yes	Yes	No
590	7	58	49	50	59	Yes	Yes	Yes
591	8	57	47	49	58	Yes	Yes	Yes
592	9	55	46	48	56	Yes	Yes	Yes
593	10	54	45	47	55	Yes	Yes	Yes
594	11	53	44	45	54	Yes	Yes	Yes
595	12	52	43	45	53	Yes	Yes	Yes
596	13	51	42	43	52	Yes	Yes	Yes
597	14	51	41	42	52	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-7  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 552

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 64  
Medium Truck DNL (dB): 55  
Heavy Truck DNL (dB): 56

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 594  
Medium Truck Elevation: 596  
Heavy Truck Elevation: 602  
Pad/Ground Elevation at Receiver: 581  
Receiver Elevation: 586  
Base of Barrier Elevation: 581  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
587	6	59	50	51	60	Yes	No	No
588	7	59	49	51	60	Yes	Yes	Yes
589	8	57	48	50	58	Yes	Yes	Yes
590	9	56	46	48	57	Yes	Yes	Yes
591	10	55	45	47	56	Yes	Yes	Yes
592	11	54	44	46	55	Yes	Yes	Yes
593	12	53	43	45	54	Yes	Yes	Yes
594	13	52	42	44	53	Yes	Yes	Yes
595	14	51	41	43	52	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-8  
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:**

Job Number: 2020-143  
Project Name: Creekside Village Residential Development  
Roadway Name: Latrobe Road  
Location(s): SFL Lot 556

**Noise Level Data:**

Year: Future (2040)  
Auto DNL (dB): 64  
Medium Truck DNL (dB): 55  
Heavy Truck DNL (dB): 56

**Site Geometry:**

Receiver Description: Backyard  
Centerline to Barrier Distance (C<sub>1</sub>): 85  
Barrier to Receiver Distance (C<sub>2</sub>): 10  
Automobile Elevation: 593  
Medium Truck Elevation: 595  
Heavy Truck Elevation: 601  
Pad/Ground Elevation at Receiver: 577  
Receiver Elevation: 582  
Base of Barrier Elevation: 577  
Starting Barrier Height 6

**Barrier Effectiveness:**

Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
583	6	59	50	51	60	Yes	No	No
584	7	59	49	51	60	Yes	Yes	Yes
585	8	58	48	50	59	Yes	Yes	Yes
586	9	56	47	49	57	Yes	Yes	Yes
587	10	55	45	47	56	Yes	Yes	Yes
588	11	54	44	46	55	Yes	Yes	Yes
589	12	53	43	45	54	Yes	Yes	Yes
590	13	52	42	44	53	Yes	Yes	Yes
591	14	51	41	43	52	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

**Appendix H-9  
 FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)  
 Noise Barrier Effectiveness Prediction Worksheet**

**Project Information:** Job Number: 2020-143  
 Project Name: Creekside Village Residential Development  
 Roadway Name: Latrobe Road  
 Location(s): SFL Lot 560

**Noise Level Data:** Year: Future (2040)  
 Auto DNL (dB): 64  
 Medium Truck DNL (dB): 55  
 Heavy Truck DNL (dB): 56

**Site Geometry:** Receiver Description: Backyard  
 Centerline to Barrier Distance (C<sub>1</sub>): 85  
 Barrier to Receiver Distance (C<sub>2</sub>): 10  
 Automobile Elevation: 593  
 Medium Truck Elevation: 595  
 Heavy Truck Elevation: 601  
 Pad/Ground Elevation at Receiver: 575  
 Receiver Elevation: 580  
 Base of Barrier Elevation: 575  
 Starting Barrier Height 6

**Barrier Effectiveness:**

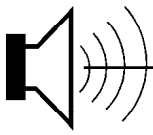
Top of Barrier Elevation (ft)	Barrier Height (ft)	----- DNL (dB) -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
581	6	59	50	51	60	No	No	No
582	7	59	49	51	60	Yes	Yes	Yes
583	8	58	48	50	59	Yes	Yes	Yes
584	9	56	47	49	57	Yes	Yes	Yes
585	10	55	45	47	56	Yes	Yes	Yes
586	11	54	44	46	55	Yes	Yes	Yes
587	12	53	43	45	54	Yes	Yes	Yes
588	13	52	42	44	53	Yes	Yes	Yes
589	14	51	41	43	52	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

---

Reduced Impact Alternative Memorandum  
(December 2024)





## Memorandum

To: Tony Gon  
Winn Communities  
555 University Avenue, Suite 180  
Sacramento, CA 95825

Date: December 10, 2024

From: Dario Gotchet, Principal  
Bollard Acoustical Consultants, Inc.  
P.O. Box 7968  
Auburn, CA 95604

**Subject: Creekside Village Development – Revised Tentative Map Plan & Trip Generation Information for the Reduced Impact Alternative**

Dear Tony,

Bollard Acoustical Consultants, Inc. (BAC) previously completed an environmental noise assessment for the Creekside Village Development (latest revision dated February 21, 2024). It was brought to the attention of BAC in October 2024 that revisions were made to the project tentative map plan and traffic impact analysis. Further, BAC was informed that a Reduced Impact Alternative is now being proposed. In response to those changes, BAC has prepared this memorandum. Specifically, this memorandum includes the revised tentative map plan with associated mitigation as identified in the noise assessment previously prepared by BAC in 2024. This memorandum also contains a discussion on the potential impacts associated with the revised project trip generation information.

It should be noted that the function of this memorandum is to supplement the noise assessment previously prepared by BAC in February 2024. For the purposes of this memorandum, that assessment will be referenced as the 2024 BAC Noise Study.

### **Revised Project Tentative Map Plan – Reduced Impact Alternative**

The analysis, results and impact determinations contained in the 2024 BAC Noise Study are based on the project site plan identified in Figures 2, 4, 5 and 6. Figures 4 through 6 of the 2024 BAC Noise Study contain illustrations of required mitigation measures as outlined in the report. As mentioned above, it has been brought the attention of BAC that a tentative map plan has been revised, included as a Reduced Impact Alternative to the EIR. Figures 2, 4, 5 and 6 of 2024 BAC Noise Study have been revised to include the new tentative map plan (Reduced Impact Alternative) and are presented in this memorandum as Attachments A, B, C and D. Attachments B through D of this memorandum include integration of the mitigation measures as outlined in the 2024 BAC Noise Study. It should be noted that, although the revised site design under the Reduced Impact Alternative did not warrant revisions to mitigation language as presented in the 2024 BAC Noise Study, the revised site design did

trigger minor changes to the illustrated mitigation measures in those graphics (i.e., extending lengths of sound walls).

### **Revised Trip Generation – Reduced Impact Alternative**

The analysis, results and impact determinations contained in the 2024 BAC Noise Study are based on trip generation estimates prepared by T. Kear Transportation Planning & Management (dated August 24, 2023). That 2022 trip generation information indicates a total of 10,040 new project trips, which accounted for residential and commercial land uses of the development. As mentioned above, it has been brought the attention of BAC that trip generation estimates have revised, included as a Reduced Impact Alternative to the EIR. According to revised (2024) trip generation information (prepared by T. Kear), a total of 4,147 new trips are calculated under the Reduced Impact Alternative – which is calculated to be approximately 59% less total trips than previously reported by T. Kear. As indicated in the 2024 BAC Noise Study, noise impacts associated with project-generated increases in off-site traffic are determined to be less than significant (Impacts 2 and 3). Based on the revised trip generation estimate (4,147) and considering that that revised estimate is significantly lower than that previously reported (10,040), the impact determinations associated with the revised trip generation information for the Reduced Impact Alternative would not change from presented in the 2024 BAC Noise Study. Further, traffic noise levels associated with the revised trip generation estimate are expected to be lower than those levels report in the 2024 BAC Noise Study.

### **Conclusions**

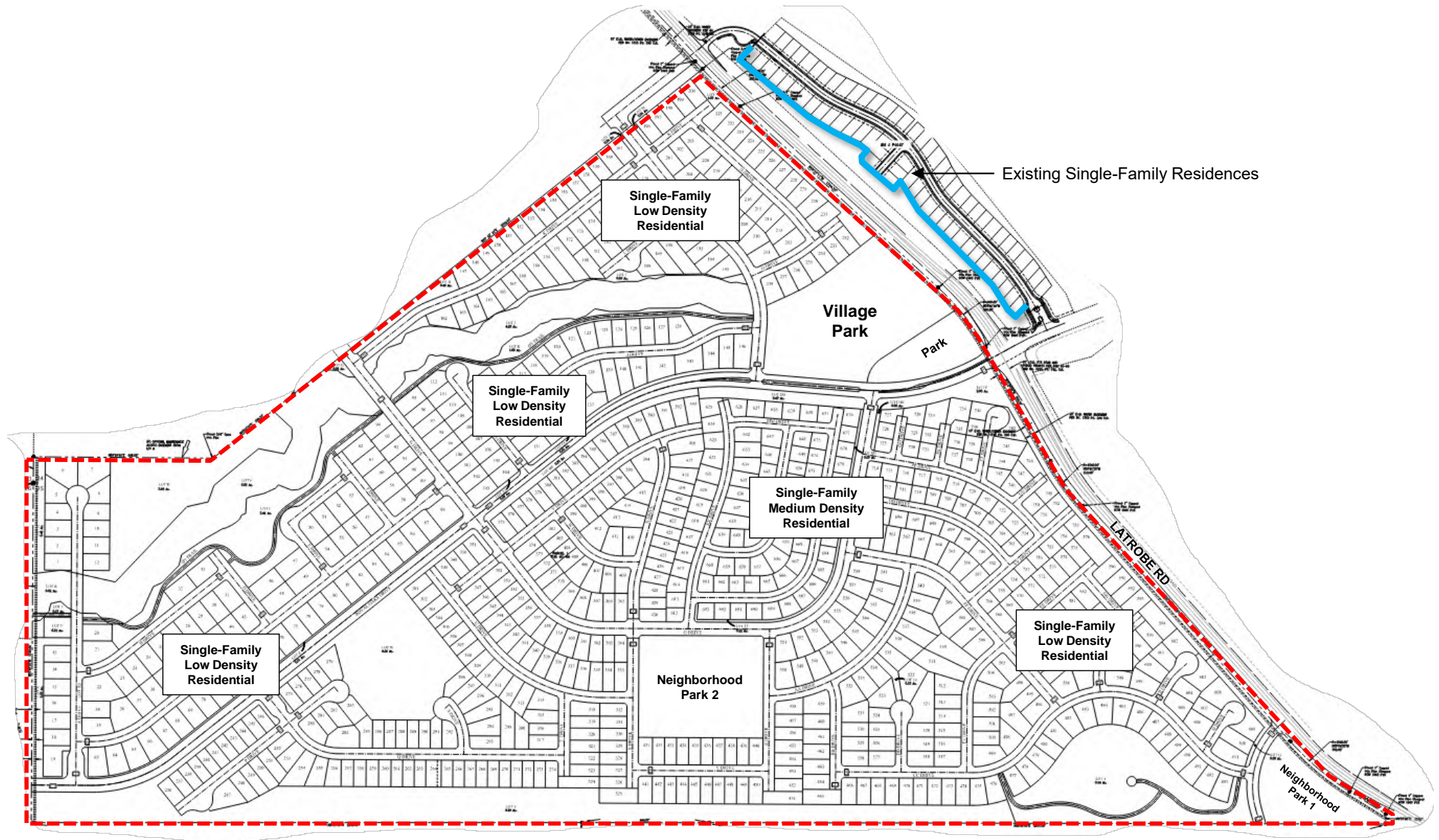
This concludes our review of the revised tentative map and trip generation information for the Creekside Village development. Please contact me at (530) 537-2328 or [darioq@bacnoise.com](mailto:darioq@bacnoise.com) if you have any questions or require additional information.

Sincerely,

Bollard Acoustical Consultants, Inc.



Dario Gotchet  
Principal Consultant  
Elected Member, Institute of Noise Control Engineering (INCE)



Existing Single-Family Residences

Single-Family Low Density Residential

Village Park

Single-Family Low Density Residential

Single-Family Medium Density Residential

Single-Family Low Density Residential

Neighborhood Park 2

Single-Family Low Density Residential

LATROBE RD

Neighborhood Park 1

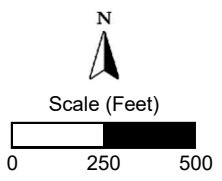
**Legend**

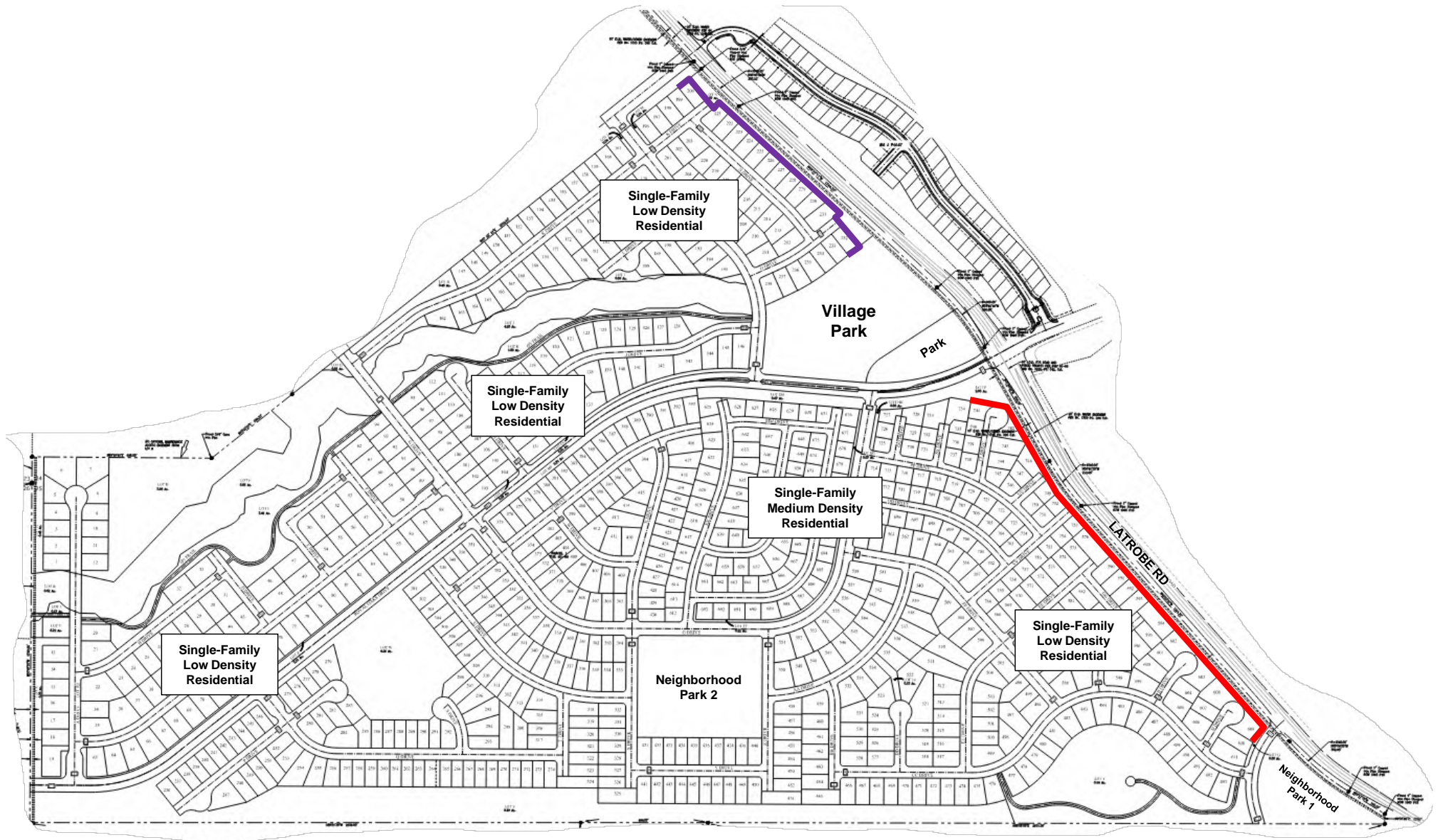
- - - Development Area Boundary
- Existing Solid Traffic Noise Barrier

Creekside Village Development  
El Dorado County, California

Tentative Map – Reduced Impact Alternative

Attachment A





**Legend**

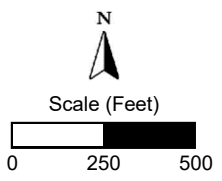
- 9' Solid Noise Barriers (Mitigation Measure MM-10A – Traffic Noise)\*
- 6' Solid Noise Barriers (Mitigation Measure MM-10A – Traffic Noise)\*

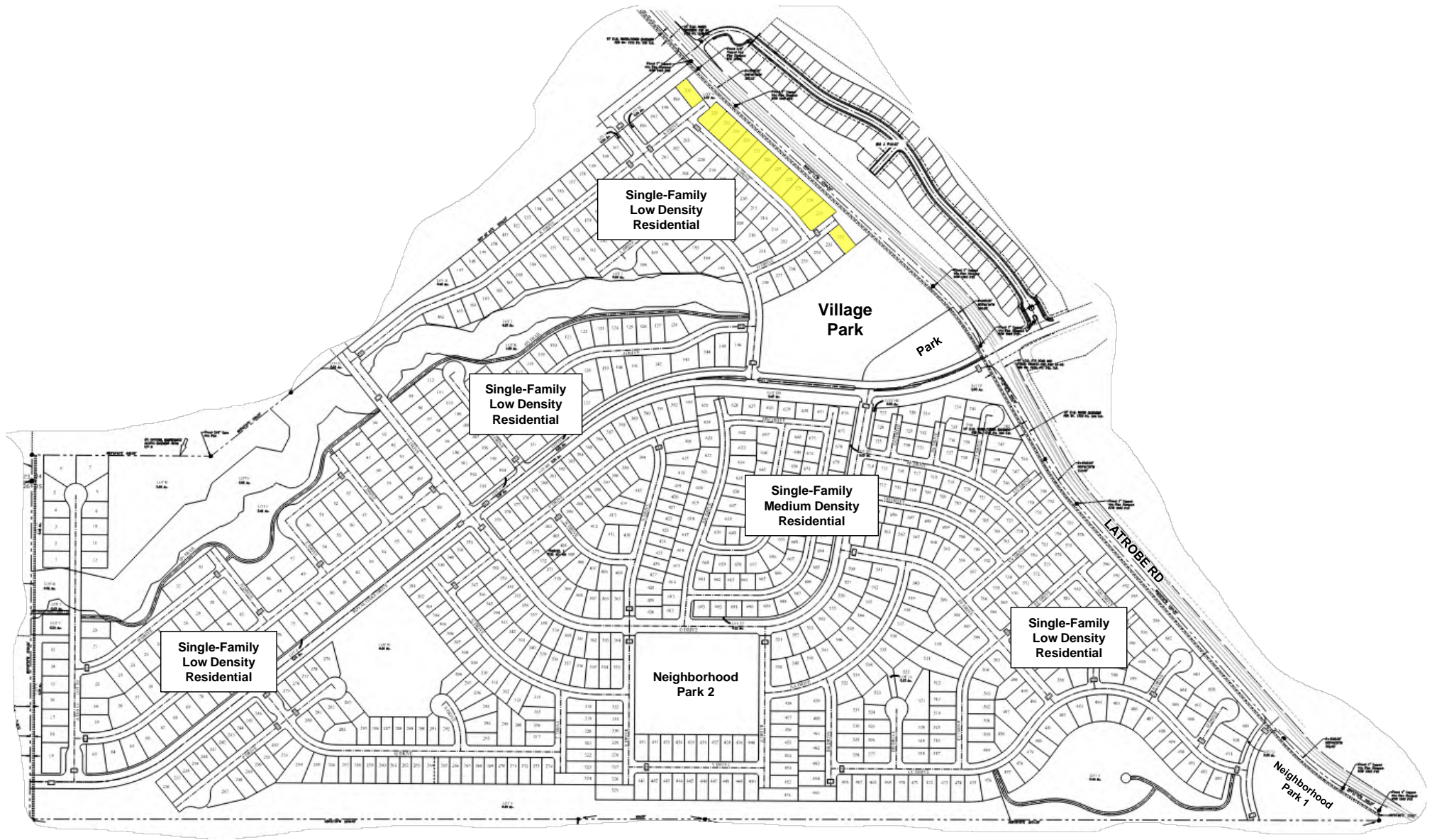
*\*Based on mitigation as outlined in MM-10A of the 2024 BAC 2024 Noise Study*

Creekside Village Development  
El Dorado County, California

Mitigation Measure 10A – Traffic Noise\*

**Attachment B**





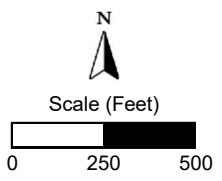
**Legend**

 Window Assembly Upgrade STC 32: Upper-Floors Only (Mitigation Measure MM-11A)\*

*\*Based on mitigation as outlined in MM-11A of the 2024 BAC 2024 Noise Study*

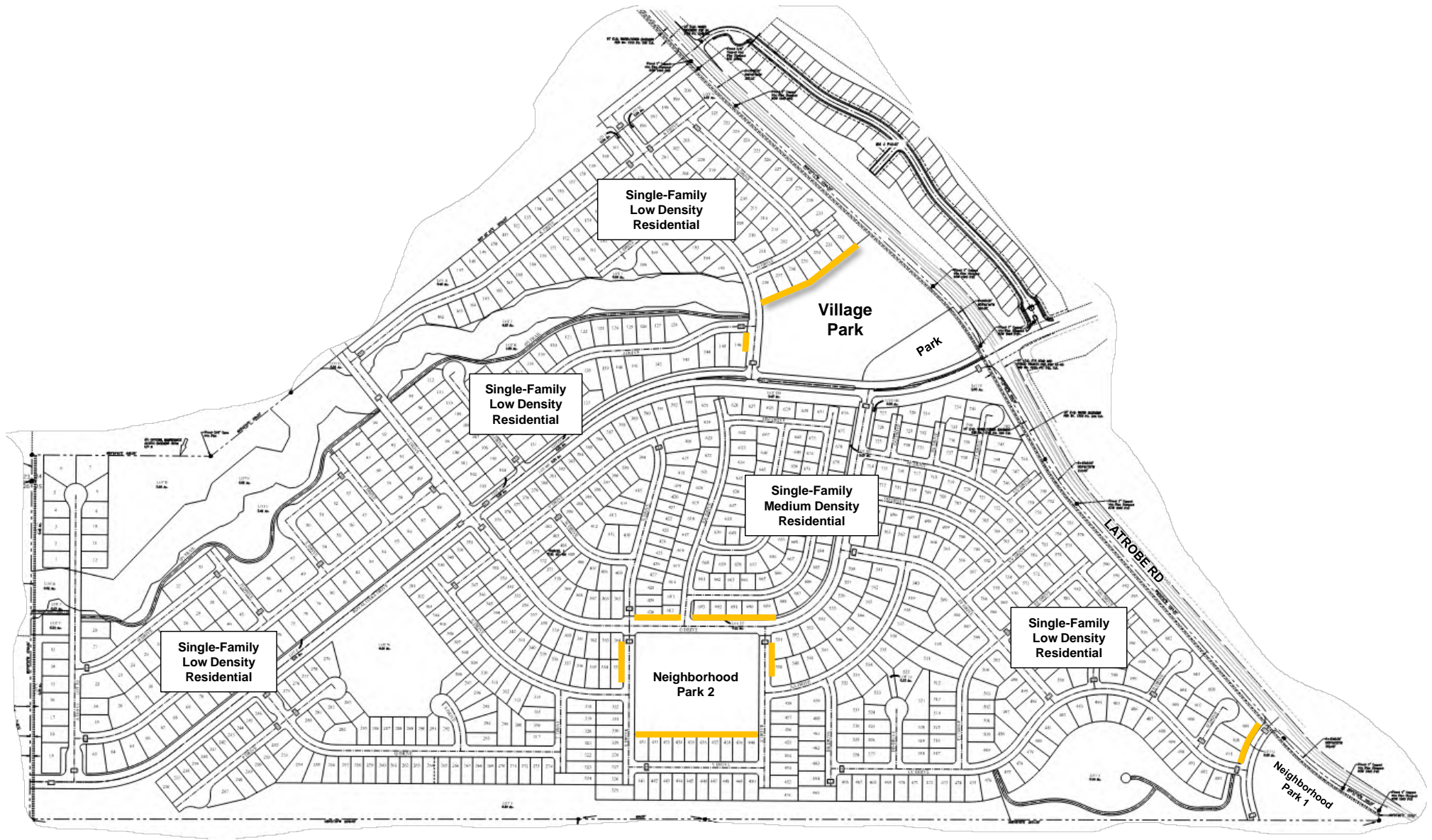
Creekside Village Development  
El Dorado County, California

Mitigation Measure 11A – Traffic Noise\*



**Attachment C**





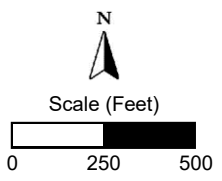
**Legend**

 6' Solid Noise Barriers (Mitigation Measure MM-12 – Park Noise)\*

Creekside Village Development  
El Dorado County, California

Mitigation Measure 12 – Park Noise\*

*\*Based on mitigation as outlined in MM-12 of the 2024 BAC 2024 Noise Study*



**Attachment D**

