

## 4.4 Noise

This section discusses and analyzes the ambient noise characteristics of the City of Elk Grove. The information provided in this section is based on analysis of the proposed City of Elk Grove General Plan Amendment, and technical review by Bollard & Brennan, Inc.

#### 4.4.1 EXISTING SETTING

##### BACKGROUND AND TERMINOLOGY

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 hence are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

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 levels (dB) correspond closely to human perception of relative loudness. **Table 4.4-1** shows examples of noise levels for several common noise sources and environments.

**TABLE 4.4-1  
TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON NOISE SOURCES**

Decibels	Description
130	Threshold of pain
120	Jet aircraft take-off at 100 feet
110	Riveting machine at operators position
100	Shotgun at 200 feet
90	Bulldozer at 50 feet
80	Diesel locomotive at 300 feet
70	Commercial jet aircraft interior during flight
60	Normal conversation speech at 5 - 10 feet
50	Open office background level
40	Background level within a residence
30	Soft whisper at 2 feet
20	Interior of recording studio

##### EFFECTS OF NOISE ON PEOPLE

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 weighing 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

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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 in decibels.

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 ( $L_{eq}$ ) over a given time period (usually one hour). The  $L_{eq}$  is the foundation of the Day-Night Average Level noise descriptor,  $L_{dn}$ , and shows very good correlation with community response to noise.

The Day-night Average Level ( $L_{dn}$ ) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because  $L_{dn}$  represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Noise in the community has been cited as being a health problem, not in terms of actual physiological damages such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being are the bases for policies preventing exposures to excessive community noise levels.

To control noise from fixed sources, which have developed from processes other than zoning or land use planning, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as performance standards to judge the creation of a potential nuisance, or potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

In addition to the A-weighted noise level, other factors should be considered in establishing criteria for noise sensitive land uses. For example, sounds with noticeable tonal content such as whistles, horns, droning or high-pitched sounds may be more annoying than the A-weighted sound level alone suggests. Many noise standards apply a penalty, or correction, of 5 dBA to such sounds. The effects of unusual tonal content are generally more of a concern at nighttime, when residents may notice the sound in contrast to low levels of background noise.

Because many rural residential areas experience very low noise levels, residents may express concern about the loss of “peace and quiet” due to the introduction of a sound, which was not previously audible. In very quiet environments, the introduction of virtually any change in local activities will cause an increase in noise levels. A change in noise level and the loss of “peace and quiet” is the inevitable result of land use or activity changes in such areas. Audibility of a new noise source and/or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts, but these concerns should be addressed and considered in the planning and environmental review processes.

### EXISTING NOISE CONDITIONS IN THE CITY LIMITS

The major noise sources in the City of Elk Grove consist of State Route 99 and local traffic on streets, commercial and industrial uses, active recreation of parks, outdoor play areas of schools, and railroad operations. Each of these noise sources is discussed individually below.

#### Transportation Noise Sources

##### Roadway Traffic

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the Calven vehicle noise emission curves was used to predict existing and cumulative traffic noise levels within the City of Elk Grove. The FHWA Model is the traffic noise prediction model currently preferred by the Federal Highway Administration, the State of California Department of Transportation (Caltrans), and most county and city governments, for use in traffic noise assessment. Although the FHWA Model is in the process of being updated by a more sophisticated traffic noise prediction model, the use of RD-77-108 is still considered acceptable for the development of General Plan traffic noise predictions.

**Table 4.4-2** shows the year 2025 traffic volumes and noise level at 100 feet for the major roadways located within the City of Elk Grove anticipated under buildout of the adopted General Plan. The future scenario represents cumulative traffic conditions under the adopted General Plan. It is recognized that vehicle speeds vary considerably on roadways in the City, particularly due to the fact that the reductions in speed are frequently necessary because of traffic signals and stop signs at roadway intersections. In order to provide a generally worst-case estimate of existing traffic noise along the roadways within the City, a normalized speed of 65 miles per hour (mph) was applied to highways and a speed of 45 mph was applied to all other roadways in the modeling effort. The contour distances should also be considered conservative in that they do not account for local topographic, wall, and structural shielding.

##### Railroads

There are three sets of railroad tracks operating within the City limits. The Western Pacific Railroad (WPRR) is located in the western portion of the City, near Interstate 5. The Union Pacific Railroad (UPRR) line passes through the central portion of the City of Elk Grove and crosses under State Route 99 near Eschinger Road. The Central California Traction Railroad (CTCRR) is located east of the UPRR. The CTCRR is not currently active. None of the General Plan Amendment sites are located within the 60 dB railroad noise level contours for these railroad lines.

##### Airports

There are no existing airports within the City limits. However, the Sunset Sky Ranch Airport is located in the vicinity of the City southeast of Grant Line Road. Sunset Sky Ranch Airport is a privately owned public use airport. The noise impacts from this airport was analyzed in the Sunset Sky Ranch Airport Comprehensive Land Use Plan (CLUP), adopted by the Airport Land Use Commission in December 1988 and amended in December 1992. None of the General Plan Amendment sites are located within the 60 CNEL noise contour line of the Sunset Sky Ranch Airport.

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**TABLE 4.4-2  
FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL DATA INPUTS AND DB LDN  
– YEAR 2025 NO PROJECT (ADOPTED GENERAL PLAN LAND USE DESIGNATIONS)**

	Segment	From	To	Adopted General Plan ADT	Adopted General Plan Noise Level (Lnd at 100 feet)
1	Big Horn Blvd.	Franklin Blvd.	Laguna Blvd.	31,037	65.0
2	Big Horn Blvd.	Laguna Blvd.	Elk Grove Blvd.	45,322	67.3
3	Big Horn Blvd.	Elk Grove Blvd.	Kammerer Rd.	27,940	0.0
4	Bilby Rd.	Franklin Blvd.	Bruceville Rd.	10,331	51.7
5	Bond Rd.	East Stockton Blvd	Elk Grove Florin Blvd.	59,931	69.2
6	Bond Rd.	Elk Grove Florin Rd.	Bradshaw Rd.	31,718	63.3
7	Bond Rd.	Bradshaw Rd.	Grant Line Rd.	12,034	60.4
8	Bradshaw Rd.	Vintage Park Rd.	Calvine Rd.	45,950	64.1
9	Bradshaw Rd.	Calvine Rd.	Bond Rd.	48,023	62.5
10	Bradshaw Rd.	Bond Rd.	Grant Line Rd.	34,420	60.3
11	Bruceville Rd.	Jacinto Rd.	Sheldon Rd.	19,243	60.2
12	Bruceville Rd.	Sheldon Rd.	Laguna Blvd.	41,274	64.9
13	Bruceville Rd.	Laguna Blvd.	Elk Grove Blvd.	48,883	61.6
14	Bruceville Rd.	Elk Grove Blvd.	Bilby Rd.	18,355	53.8
15	Bruceville Rd.	Bilby Rd.	Eschinger Rd.	1,358	50.6
16	Calvine Rd.	Power Inn Rd.	Elk Grove-Florin Rd.	51,086	67.0
17	Calvine Rd.	Elk Grove-Florin Rd.	Bradshaw Rd.	31,877	64.4
18	Calvine Rd.	Bradshaw Rd.	Grant Line Rd.	9,630	61.1
19	Center Pkwy.	Sheldon Rd.	Jacinto Rd.	26,568	64.0
20	Elk-Grove Blvd.	I-5	Franklin	22,430	62.6
21	Elk Grove Blvd.	Franklin Blvd.	Bruceville Rd.	34,257	65.1
22	Elk Grove Blvd.	Bruceville Rd.	West Stockton Blvd.	50,941	65.4
23	Elk Grove Blvd.	West Stockton Blvd.	East Stockton Blvd.	67,455	67.9
24	Elk Grove Blvd.	East Stockton Blvd	Elk Grove-Florin Rd.	52,863	68.0
25	Elk Grove Blvd.	Elk Grove-Florin Rd.	Waterman Rd.	18,515	63.6
26	Elk Grove Blvd.	Waterman Rd.	Grant Line Rd.	15,661	60.0

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	Segment	From	To	Adopted General Plan ADT	Adopted General Plan Noise Level (Lnd at 100 feet)
27	Elk-Grove Florin Rd.	Vintage Park Rd.	Calvine Rd.	56,907	67.4
28	Elk Grove-Florin Rd.	Calvine Rd.	Bond Rd.	49,255	67.6
29	Elk Grove-Florin Rd.	Bond Rd.	Elk Grove Blvd.	38,853	66.8
30	Elk Grove-Florin Rd.	Elk Grove Blvd.	East Stockton Blvd.	13,952	61.2
31	Eschinger Rd.	SR99	Carroll Rd.	812	48.4
32	Excelsior Road	Gerber Rd.	Calvine Rd.	10,812	60.6
33	Excelsior Road	Calvine Rd.	Sheldon Rd.	14,166	59.3
34	Franklin Blvd.	Calvine Rd.	Laguna Blvd.	44,297	65.2
35	Franklin Blvd.	Laguna Blvd.	Elk Grove Blvd.	44,111	62.3
36	Franklin Blvd.	Elk Grove Blvd.	Hood Franklin Rd.	28,830	54.4
37	Franklin Blvd.	Hood Franklin Rd.	South of Hood Franklin	18,642	50.6
38	Grant Line Rd.	SR99	East Stockton Blvd.	92,234	66.3
39	Grant Line Rd.	East Stockton Blvd.	Bradshaw Rd.	65,178	63.3
40	Grant Line Rd.	Bradshaw Rd.	Sheldon Rd.	36,585	62.4
41	Grant Line Rd.	Sheldon Rd.	Calvine Rd.	37,571	63.0
42	Grant Line Rd.	Calvine Rd.	Sloughhouse Rd.	36,207	64.1
43	Harbor Point Dr.	Laguna Blvd.	Elk Grove Blvd.	14,908	59.5
44	I-5	-	South of Hood Franklin	57,154	72.7
45	I-5	Hood Franklin Rd.	Elk Grove Blvd.	57,154	72.5
46	I-5	Elk Grove Blvd.	Laguna Blvd.	68,346	72.2
47	I-5	Laguna Blvd.	160	92,115	74.3
48	Kammerer (Hood Fr)	I-5	Franklin Rd.	19,460	55.3
49	Kammerer Rd.	Franklin Rd.	Bruceville Rd.	19,116	53.2
50	Kammerer Rd.	Bruceville Rd.	West Stockton Blvd.	48,134	55.8
51	Laguna Blvd.	I-5	Franklin Rd.	39,002	67.6
52	Laguna Blvd.	Franklin Blvd.	Bruceville Rd.	42,364	67.9
53	Laguna Blvd.	Bruceville Rd.	West Stockton Blvd.	58,412	69.3
54	Laguna Blvd.	West Stockton Blvd.	East Stockton Blvd	75,333	69.0

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	Segment	From	To	Adopted General Plan ADT	Adopted General Plan Noise Level (Lnd at 100 feet)
55	Laguna Springs Dr.	Elk Grove Blvd.	Laguna Ridge Drive	15,090	54.8
56	Laguna Ridge Dr.	Big Horn Blvd.	Poppy Ridge Rd.	14,215	0.0
57	Laguna Ridge Dr.	Poppy Ridge Rd.	Kammerer Rd.	14,731	0.0
58	Power Inn Rd.	Calvine Rd.	Elsie Ave.	47,052	65.7
59	Poppy Ridge Rd.	Franklin Rd.	West Stockton Blvd.	29,613	0.0
60	Sheldon Rd.	Center Parkway	West Stockton Blvd.	28,653	65.4
61	Sheldon Rd.	West Stockton Blvd.	East Stockton Blvd	43,187	66.4
62	Sheldon Rd.	East Stockton Blvd	Elk Grove-Florin Rd.	39,243	65.1
63	Sheldon Rd.	Elk Grove-Florin Rd.	Bradshaw Rd.	26,848	64.5
64	Sheldon Rd.	Bradshaw Rd.	Grant Line Rd.	15,821	61.0
65	State Route 99	Eschinger Rd.	Grant Line Rd.	95,149	73.0
66	State Route 99	Grant Line Rd.	Elk Grove Blvd.	84,601	72.8
67	State Route 99	Elk Grove Blvd.	Laguna Blvd.	86,340	72.7
68	State Route 99	Laguna Blvd.	Sheldon Rd.	112,523	74.0
69	State Route 99	Sheldon Rd.	Calvine Rd.	115,230	74.4
70	State Route 99	Calvine Rd.	Stockton Blvd.	115,250	74.3
71	Waterman	Calvine Rd.	Vintage Park Rd.	5,566	49.5
72	Waterman	Calvine Rd.	Bond Rd.	22,412	60.3
73	Waterman	Bond Rd.	Grant Line Rd.	23,516	61.2
74	Wilton Rd.	Grant Line Road	Dillard Rd.	10,538	61.1

Source: Bollard & Brennan, Inc., 2004

### Non-Transportation Noise Sources

The production of noise is a result of many processes and activities, even when best available noise control technology is applied. Noise exposures within industrial facilities are controlled by Federal and State employee health and safety regulations (OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational and public service facility activities can also produce noise which affects adjacent sensitive land uses.

Most of the non-transportation noise sources within Elk Grove are located in the heavy industrial area east of Highway 99 in the southern portion of the City. A detailed description of representative fixed noise sources in the City of Elk Grove is provided in the Elk Grove General Plan EIR. Noise generated by non-transportation noise sources, such as general service commercial, light industrial, parks, and school playing field uses, contribute to the ambient noise environment in the immediate vicinity of these uses, and should be considered where either new

noise-sensitive uses are proposed nearby or where similar uses are proposed in existing residential areas.

#### 4.4.2 REGULATORY FRAMEWORK

##### LOCAL

##### City of Elk Grove General Plan

**Table 4.4-3** identifies the General Plan Noise Element policies that are directly applicable to the proposed General Plan Amendment project, and presents an evaluation of the consistency of the project with these statements as required by CEQA. The final authority for interpretation of these policy statements, and determination of the project's consistency rests with the City Council.

**Table 4.4-3  
General Plan Noise Element Policy Consistency**

Draft General Plan Policies	Consistency with General Plan	Analysis
<p><b>Policy NO-1:</b> New development of the uses listed in Table NO-C shall conform with the noise levels contained in that Table. All indoor and outdoor areas shall be located, constructed, and/or shielded from noise sources in order to achieve compliance with the City's noise standards.</p>	Yes	Subsequent development would be required to demonstrate that the uses would not exceed City noise standards at nearby property lines for noise sensitive uses. If noise standards would be exceeded as a result of proposed uses, noise attenuation measures would be required to lessen the impacts.
<p><b>Policy NO-2:</b> Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table NO-C or the performance standards of Table NO-A, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.</p>	Yes	See analysis of Policy NO-1 above.
<p><b>Policy NO-3:</b> Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table NO-A as measured immediately within the property line of lands designated for noise-sensitive uses.</p>	Yes	See analysis of Policy NO-1 above.
<p><b>Policy NO-4:</b> Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table NO-A 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. The requirements for the content of an acoustical analysis are shown in Table NO-B.</p>	Yes	See analysis of Policy NO-1 above.

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### City of Elk Grove Draft General Plan Noise Element

In accordance with State noise regulations, the Elk Grove General Plan Noise Element sets forth land use compatibility criteria for various community noise levels. For noise generated by transportation noise sources (roads and railroads), the Noise Element specifies that residential land uses are unconditionally compatible with exterior noise levels of up to 60 dB L<sub>dn</sub>. The 60 dB L<sub>dn</sub> noise level is considered an acceptable noise environment for residential outdoor activities. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L<sub>dn</sub>/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L<sub>dn</sub>/CNEL may be allowed in outdoor activity areas provided that "all practical" exterior noise reduction measures are applied and the interior noise levels are in compliance with the General Plan.

An interior noise level criterion of 45 dB L<sub>dn</sub> is specified in the Noise Element of the General Plan for residential land uses exposed to transportation noise sources. The intent of this interior noise standard is to provide a suitable environment for indoor communication and sleep. For noise generated by non-transportation noise sources (e.g. industrial and commercial machinery, etc.), the Noise Element specifies that residential land uses are compatible with exterior daytime levels up to 55 hourly dB L<sub>eq</sub>. The City's Noise Ordinance and Noise Element of the General Plan are the basis for the adoption and enforcement of noise standards. The Noise Element establishes land-use compatibility criteria for both interior and exterior areas of various land uses.

### City of Elk Grove Noise Ordinance

Noises generated by non-transportation noise sources are regulated by the City of Elk Grove Noise Ordinance as summarized in **Table 4.4-4** below.

**TABLE 4.4-4  
CITY OF ELK GROVE NOISE ORDINANCE STANDARDS**

Cumulative Duration of the Intrusive Sound	Descriptor	Exterior Noise Standard, dB	
		(7 am - 10 pm)	(10 pm - 7 am)
30-60 minutes per hour	L <sub>50</sub>	55	50
15-30 minutes per hour	L <sub>25</sub>	60	55
5-15 minutes per hour	L <sub>08</sub>	65	60
1-5 minutes per hour	L <sub>02</sub>	70	65
Any time during hour	L <sub>max</sub>	75	70

The City of Elk Grove Noise Ordinance regulates development projects with regard to construction noise. Section 6.68.090 of the Ordinance contains quantitative restrictions on noise levels that effectively limit construction activities to 6:00 A.M. to 8:00 P.M., Monday through Friday, and 7:00 A.M. to 8:00 P.M. on Saturday and Sunday. Section 6.68.070 establishes exterior noise standards for residential properties of 55 dBA from 7:00 A.M. to 10:00 P.M., and 50 dBA from 10:00 P.M. to 7:00 A.M. Section 6.68.120 restricts the noise levels produced by machinery, equipment, fans and air conditioning, as heard at the property lines of nearby residential uses.

### **City of Elk Grove Zoning Code**

The City of Elk Grove Zoning Code includes certain performance standards (Title III, Use Regulations and Development Standards) that could have the effect of reducing noise levels. For example, Chapter I, Article 5, Section 301-61 requires that a masonry wall be provided along the exterior property lines for all industrial and commercial projects when located adjacent to residential (and other specified) zones, and that where a sound wall is required, a masonry wall of up to eight feet in height may be provided. Chapter 5, Article 2, Section 305-13.3 requires that a solid wood fence or masonry wall with a minimum height of six feet be built along the exterior property lines of any multi-family residential project. Chapter 15, Article 6, Section 315-43(f) requires that loading docks adjacent to residentially zoned property have a setback of at least 75 feet from that zoning boundary. Section 315-45(b) of the same Article requires that, for commercial development adjacent to residential and other specified zones, a six-foot high perimeter masonry wall be installed along the property lines of those zones.

### **4.4.3 IMPACTS AND MITIGATION MEASURES**

#### **STANDARDS OF SIGNIFICANCE**

CEQA Guidelines (Appendix G) state that implementation of a project would result in significant noise impacts if the project would result in any of the following:

1. Exposure of persons to, or generation of, noise levels in excess of standards established in the local plans or ordinances.
2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels without the project.
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
5. For a project located within 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, where the project would expose people residing or working in the area to excessive noise levels.
6. For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

#### **METHODOLOGY**

A combination of use of existing literature, and application of accepted noise prediction and sound propagation algorithms, were used to predict changes in ambient noise levels resulting from implementation of the proposed General Plan Amendment. The previous analysis and mitigation measures provided in the Elk Grove General Plan EIR were considered in evaluating the impacts associated with the proposed General Plan Amendment.

**Table 4.4-5** is based upon recommendations made in August 1992 by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although

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the FICON recommendations were specifically developed to assess aircraft noise impacts, these criteria have been applied to other sources of noise similarly described in terms of cumulative noise exposure metrics such as the  $L_{dn}$ . This metric is generally applied to transportation noise sources, and defines noise exposure in terms of average noise exposure during a 24-hour period with a penalty added to noise that occurs during the nighttime. According to **Table 4.4-5**, an increase in the traffic noise level of 1.5 dB or more would be considered significant where the ambient noise level exceeds 65 dB  $L_{dn}$ .

**TABLE 4.4-5**  
**SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE**

Ambient Noise Level Without Project, $L_{dn}$	Significant Impact
< 60 dB	+ 5.0 dB or more
60-65 dB	+ 3.0 dB or more
> 65 dB	+ 1.5 dB or more

Notes: dB = decibel  
 $L_{dn}$  = day-night average level  
Source: Federal Interagency Committee on Noise 1992

Motor vehicle traffic is the major contributor to the existing noise environment at the General Plan Amendment sites. The methodology used to assess traffic noise impacts in this SEIR is discussed in the sub-section below.

The proposed project would not create new noise impacts from the exposure to groundborne vibrations or temporary construction noise that were not previously addressed in the Elk Grove General Plan EIR and, therefore, these impacts are not discussed further in this SEIR.

One of the project sites is located within two miles of a public use airport. However, the proposed project would not result in a significant impact over the impacts previously discussed in the Elk Grove General Plan EIR. Compliance with General Plan policies CI-25, LU-39, and NO-2, which establish requirements to coordinate with the Airport Land Use Commission, and provide noise level standards for noise-sensitive land uses, would minimize these impacts to a less than significant level. The proposed project is not located within the vicinity of a private airstrip. Therefore, impacts related to the exposure of people to airport noise will not be addressed further in this SEIR.

One of the project sites is located within one mile of an existing railroad line. However, the proposed project would not result in a significant impact over the impacts previously discussed in the Elk Grove General Plan EIR. Compliance with General Plan policies NO-1, NO-2, and NO-8, which provide noise level standards for noise-sensitive land uses, would minimize these impacts to a less than significant level. Therefore, impacts related to the exposure of people to railroad noise will not be addressed further in this SEIR.

The City Council adopted Findings of Fact for the environmental impacts associated with implementation of the Elk Grove General Plan and also adopted a Statement of Overriding Considerations for significant and unavoidable impacts anticipated with implementation of the Elk Grove General Plan, which included the increase in construction noise levels and traffic noise

levels that would exceed the City of Elk Grove noise standards, and impacts to regional noise attenuation levels.

### Traffic Noise Impact Assessment Methodology

Traffic noise impacts are assessed by comparing the year 2025 traffic noise levels modeled at buildout of the proposed General Plan Amendment to both the year 2025 traffic noise levels anticipated under the adopted General Plan and the noise impact standards of significance.

### Traffic Noise Prediction Model

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to predict noise levels under both the adopted General Plan and proposed General Plan Amendment. The FHWA model is the analytical method currently favored for highway traffic noise prediction by most state and local agencies, including the California Department of Transportation (Caltrans).

The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly  $L_{eq}$  values for free-flowing traffic conditions. To predict  $L_{dn}$ /CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

## PROJECT IMPACTS AND MITIGATION MEASURES

### Traffic Noise Impacts

**Impact 4.4.1** Implementation of the proposed General Plan Amendment would increase in traffic noise levels that would be in excess of City of Elk Grove noise standards. This is considered a **less than significant** impact.

Implementation of the proposed General Plan would result in increased traffic noise levels resulting from additional vehicle traffic. **Table 4.4-6** shows the difference between in  $L_{dn}$  levels at the adopted General Plan condition and with implementation of the proposed General Plan Amendment for those roadway segments anticipated to be impacted by the General Plan Amendment project. As shown in the table, increases in traffic noise would vary from 0.01  $L_{dn}$  to 0.99  $L_{dn}$  above noise levels anticipated with the adopted General Plan along certain roadways. On other roadways, either no change or less traffic noise is anticipated with the proposed General Plan Amendment. The anticipated increase in traffic noise is not anticipated to be discernible to the human ear and, evaluated under the criteria in **Table 4.4-5**, is considered **less than significant**.

The Elk Grove General Plan EIR identified increases in traffic noise up to 13.5 Ldn on area roadways under buildout of the General Plan and concluded that traffic noise impacts were significant and unavoidable.

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### General Plan Goals, Policies, and Action Items

Future development associated with the General Plan Amendment sites would be required to comply with General Plan policies NO-1, NO-2, NO-5, NO-7 and associated action items. These policies will reduce exposure to traffic noise that would result from new development.

### Mitigation Measures

None required.

**TABLE 4.4-6  
COMPARISON OF TRAFFIC NOISE LEVELS WITH BUILDOUT OF THE ADOPTED GENERAL PLAN AND PROPOSED GENERAL PLAN AMENDMENT**

	Segment	From	To	Adopted General Plan Noise Level (dB at 100 feet)	Proposed General Plan Amendment Noise Level (Ldn at 100 feet)	Difference in dB
1	Big Horn Blvd.	Franklin Blvd.	Laguna Blvd.	67.4	67.6	+0.19
5	Bond Rd.	East Stockton Blvd	Elk Grove Florin Blvd.	70.3	70.4	+0.09
9	Bradshaw Rd.	Calvine Rd.	Bond Rd.	69.3	69.6	+0.25
10	Bradshaw Rd.	Bond Rd.	Grant Line Rd.	67.9	67.9	+0.05
12	Bruceville Rd.	Sheldon Rd.	Laguna Blvd.	68.7	68.8	+0.12
26	Elk Grove Blvd.	Waterman Rd.	Grant Line Rd.	64.5	64.6	+0.10
39	Grant Line Rd.	East Stockton Blvd.	Bradshaw Rd.	70.7	70.7	+0.01
40	Grant Line Rd.	Bradshaw Rd.	Sheldon Rd.	68.2	68.2	+0.02
52	Laguna Blvd.	Franklin Blvd.	Bruceville Rd.	68.8	68.8	+0.01
53	Laguna Blvd.	Bruceville Rd.	West Stockton Blvd.	70.2	70.2	+0.01
62	Sheldon Rd.	East Stockton Blvd	Elk Grove-Florin Rd.	68.5	68.9	+0.45
63	Sheldon Rd.	Elk Grove-Florin Rd.	Bradshaw Rd.	66.8	67.7	+0.84
72	Waterman	Calvine Rd.	Bond Rd.	66.0	67.0	+0.99

*Source: Bollard and Brennan, 2004*

### **Future Stationary Noise Impacts**

**Impact 4.4.2** Implementation of the proposed General Plan Amendment could result in the future development of land uses that generate noise levels in excess of applicable noise standards for non-transportation noise sources. This is considered a **less than significant** impact.

Implementation of the proposed General Plan Amendment could result in the future development of land uses that generate noise levels in excess of applicable City of Elk Grove noise standards for non-transportation noise sources. Such land uses would include commercial, office, and low and high density residential. However, specific land uses that may occur on the General Plan Amendment sites are not known at this time.

The Elk Grove General Plan EIR identified that future stationary noise impacts would be less than significant with implementation of the General Plan.

### General Plan Goals, Policies, and Action Items

General Plan policies NO-2, NO-3, NO-4, NO-7, NO-8, and NO-9 and the associated action items would help reduce future stationary noise levels that may from development on the General Plan Amendment sites

### Mitigation Measures

None required.

## 4.4.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

### CUMULATIVE SETTING

The cumulative analysis takes into account planned development patterns set forth in the Elk Grove General Plan, as well as large-scale proposed and approved development projects identified in **Table 4.0-2** and regional growth. See Section 4.0 (Introduction to the Environmental Analysis and Assumptions Used) regarding cumulative setting conditions.

### CUMULATIVE IMPACTS AND MITIGATION MEASURES

#### Cumulative Traffic Noise Impacts

**Impact 4.4.3** Implementation of the proposed General Plan Amendment along with potential development of the Urban Study Areas would result in impacts to regional noise attenuation levels. This is considered a **less than significant** impact.

Implementation of the proposed General Plan Amendment would result in the contribution to increased regional noise impacts, specifically traffic noise (see **Table 4.4-6**). Additional development of the City of Elk Grove, along with neighboring jurisdictions such as Galt, Folsom, Sacramento, and Placer and El Dorado counties, would result in significant cumulative traffic noise increases. The contribution of the General Plan Amendment to cumulative traffic noise impacts is less than significant.

The Elk Grove General Plan EIR identified that cumulative traffic regional traffic noise impacts would be significant and unavoidable. That EIR further identified that while mitigation was available to reduce cumulative traffic noise levels, mitigation such as sound barriers would be infeasible in some locations and also the City does not have jurisdiction to implement mitigation measures in areas outside the City. This cumulative impact is **less than significant**.

## 4.4 NOISE

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### General Plan Goals, Policies, and Action Items

General Plan policies NO-2, NO-4, NO-5, NO-6, NO-7, and NO-8, along with associated action items would apply to future development on the General Plan Amendment sites and help reduce the City's contributions to regional traffic noise impacts.

### Mitigation Measures

None required.

### **REFERENCES**

- Bollard & Brennan, Inc. 2004. *FHWA-RD-77-108 Highway Traffic Noise Prediction Model Data – Year 2025 Adopted General Plan and Proposed General Plan Amendment Land Use Designations*. Auburn, CA.
- City of Elk Grove Development Services. 2003. *City of Elk Grove General Plan*. Elk Grove, CA.
- City of Elk Grove Development Services. 2003. *Elk Grove General Plan Environmental Impact Report*. Elk Grove, CA.