3.5 NOISE

3.5.1 INTRODUCTION

This section discusses the potential noise impacts associated with the proposed project. Discussions of impacts related to construction and operational noise are provided. The following discussion presents a programmatic analysis of noise issues associated with implementation of the proposed project. The large geographic area covered by the GPU and the plan's wide scope lend to a complex array of existing noise conditions and potential future noise concerns. The assessment of noise-related impacts is a review of existing and projected noise levels within the City and its SOI and a determination of whether the proposed project includes adequate provisions to address this issue. Given the programmatic nature of the PEIR, specific impacts to individual properties or areas are not identified or known at this time.

NOISE DEFINITIONS

Noise is generally defined as unwanted sound, or audible energy waves received by people and animals. Sound is technically quantified in terms of its loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel (dB), which is adjusted for the hearing sensitivity of the human ear by the "A-weighted scale," or "dBA." Human hearing extends from approximately three dBA (the threshold of hearing) to 140 dBA.

Because decibels are logarithmic units, they cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces 70 dB when it passes a receiver, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Sound energy generally must be doubled to produce a 3-dB increase. Additionally, if two sound levels differ by 10 dB or more, the combined level is equal to the higher of the two; the lower sound level would not increase the higher sound level. People generally perceive a 10-dBA increase in a noise source as a doubling of loudness. For example, an average person would perceive a 70 dBA sound level as being twice as loud as a 60 dBA sound. Most persons cannot detect differences of one to two dBA between noise levels of a similar nature (e.g., an increase in traffic noise compared to existing traffic noise).

Noise in the daily environment fluctuates over time. The noise descriptors Day-Night level (Ldn), Equivalent Sound Level (Leq), Community Noise Equivalent Level (CNEL), Maximum Noise Level (Lmax), and Percentile Noise Level (Lnn) have been developed to describe time-varying noise levels. These are briefly described below.

Ldn (Day-Night Level)

The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. Ldn and CNEL values rarely differ by more than 1 dB.

Community Noise Equivalent Level (CNEL)

CNEL is the energy average (i.e., sound level) occurring at a particular location when averaged over the course of a 24-hour day and with consideration for distance, single event duration, single event occurrence, frequency, and time of day. Humans are generally more sensitive to noise during nighttime and early morning hours than they are during regular morning and daytime hours. When estimating noise readings perceived by humans, CNEL accounts for this sensitivity by adding five dBA to sound levels in the evening from 7:00 PM to 10:00 PM, and 10 dBA to sound levels between 10:00 PM and 7:00 AM. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual recorded 24-hour average.

Equivalent Sound Level (Leq)

Leq represents an average of the sound energy that occurs over a specified period. The one-hour A-weighted equivalent sound level (Leq[h]), is the energy average of the A-weighted sound levels occurring during a one-hour period and is the basis for noise abatement criteria used by Caltrans and the Federal Highway Administration (FHWA).

Percentile Noise Level (Lnn)

Lnn is the percentile noise level noise level exceeded for "nn" percent of a measurement period. For example, the L10 is a relatively loud noise level that is exceeded only 10 percent of the time, while the L50 is quieter noise level exceeded 50 percent of the time.

Noise Attenuation

When sound travels over a distance, it changes in level and frequency content. Noise from a stationary (point) source generally attenuates (lessens) at rate of six dBA for "hard sites" and 7.5 dBA for "soft sites" for each doubling of distance because of the geometric spreading behavior of sound waves. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for these sites and the change in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to the geometric spreading, an excess ground attenuation value of 1.5 dBA is normally assumed for soft sites.

For highways, where the movement of the vehicles results in sound emanating from a linear source rather than a point source, each doubling of distance from the noise source results in a noise attenuation of three dBA for hard sites and 4.5 dBA for soft sites . Noise may also be shielded by natural or man-made features standing between the noise source and the noise receptor.

Contour

A noise contour is a mapped line drawn around a stationary noise source that indicates where specified levels of noise exposure would occur. Noise contours are often used in planning to determine the distance from a noise source (most often a busy roadway) at which habitable structures or land uses may be placed and maintain noise conditions that are safe, comfortable, and/or meet standards established by the relevant jurisdiction.

3.5.2 ENVIRONMENTAL SETTING

The information contained in this Environmental Setting section is primarily from information contained in the City of Lake Elsinore General Plan Background Reports (see Chapter 5 – Noise). This document is attached as Appendix B to this PEIR.

TOPOGRAPHY AND CLIMATE

Noise amplitude and attenuation characteristics are key factors in the establishment of noise conditions, and vary according to natural climate and topographical features. Meteorological factors affecting noise characteristics within the planning area include temperature changes, Santa Ana winds, and amount and duration of rainfall. Topographical features in the planning area include the steep Santa Ana Mountains and Elsinore Mountains to the south and west, the surrounding local valley land in which the City is situated, Lake Elsinore in the center of the City, and rolling hills throughout much of the area. Manmade features within the planning area, such as buildings and structures, agricultural fields, and roadways also affect noise amplitude and attenuation by their creation of irregular physical patterns on the surface.

BASELINE NOISE LEVELS

As is the case with most developed and urbanized areas, the chief source of ambient noise in the City and SOI is vehicular traffic. Two major roadways, I-15 and SR-74, traverse the area, creating the greatest source of concentrated vehicular noise. Other major roadways within the City that produce traffic noise include Riverside Drive, Lakeshore Drive, Grand Avenue, and Railroad Canyon Road.

Traffic noise is dynamic due to its generation by mobile sources; fluctuations in generated noise levels are caused by the amount of traffic and the speed at which that traffic is traveling. Traffic noise also varies in how it is perceived by various land uses, depending upon the type of roadway, distance of the receiving land use from that roadway, topographical conditions, and other physical land features such as landscaping, walls, buildings, and other structures that could reduce or enhance noise levels originating on the roadway. Some variables that affect the amount of noise emitted from a road are speed of traffic, flow of traffic, and type of traffic (e.g., tractor trailers versus cars). Another variable affecting the overall measure of noise is a perceived increase in sensitivity to vehicular noise at night.

Stationary noise sources in the City and SOI include industrial and manufacturing facilities, which have the potential to exert a relatively high level of noise within their immediate operating environments. Stationary industrial noise can be permanent, as in a factory and its related warehouse uses; or temporary, as in a mineral extraction and batching plant. The scope and degree of noise impacts generated by industrial uses is dependent upon several factors, including the activity type, hours of operation, and the site's location relative to other land uses. Industrial noise is generally limited to the daytime hours at which sources are operational.

Airports can act as stationary noise generators with planes taking off and landing on site; they also lead to the presence of low-flying aircraft that act as substantial sources of mobile noise. The Skylark Airport is a privately owned airport that occupies approximately 150 acres of land located at the southern City limits boundary on Corydon Road. The airport currently houses 21 single-engine aircraft, five multi-engine aircraft, and four gliders. This airport provides glider and skydiving opportunities for the community and surrounding region. The runway surface at Skylark Airport consists of gravel and sand; as such, this surface generally does not permit optimal conditions for frequent and convenient airport operations. Skylark Airport is a private use airport with runways that are 2800 feet in length and fall under the category of Short General Aviation Runways.

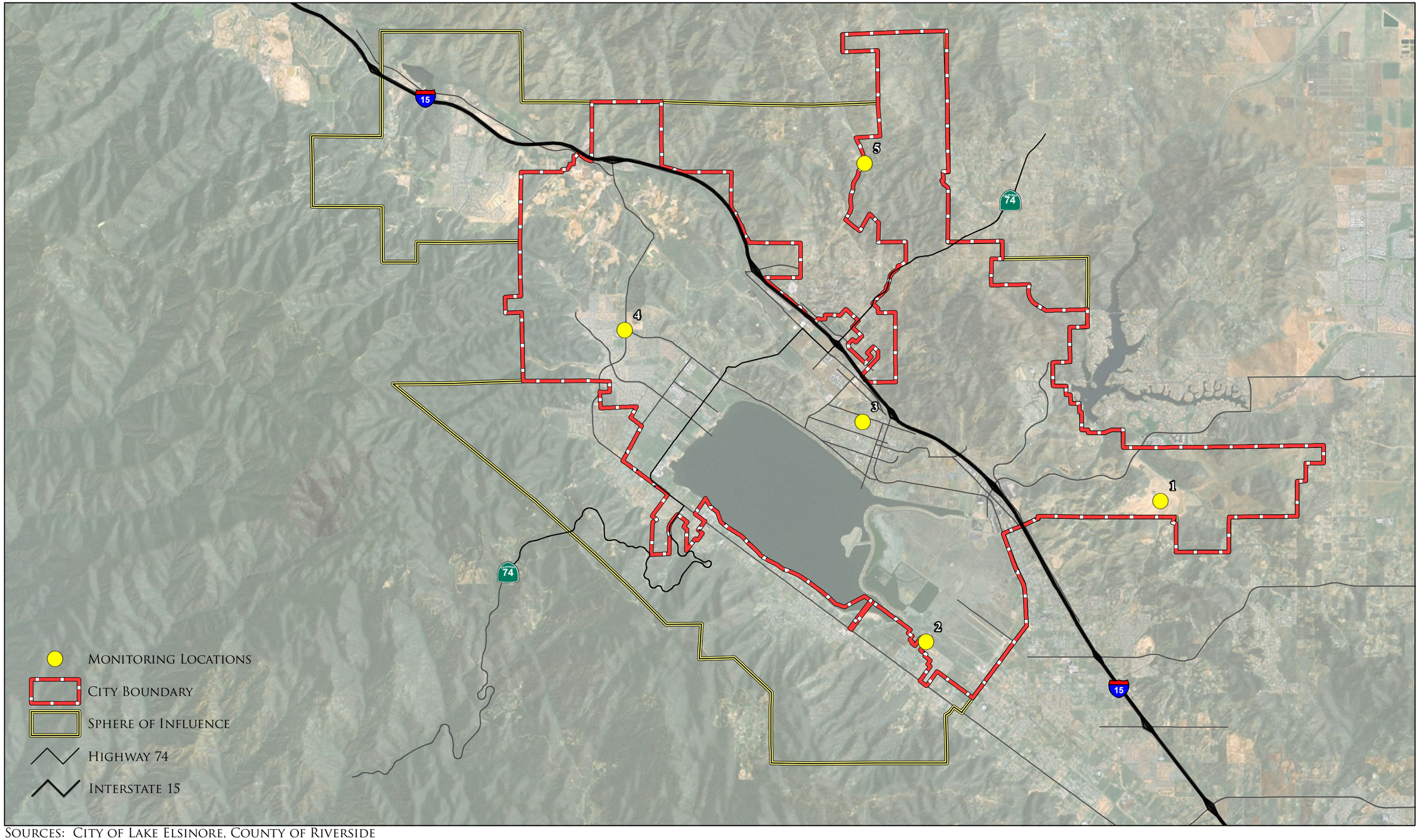
Residential, commercial, and public uses such as parks and schools can also serve as noise sources, although generally minor and inoffensive. Noise is commonly generated in these areas by heating and cooling systems, people talking, children playing, vehicle loading and unloading, automobiles traversing parking lots, and public address systems.

Recreational activity on Lake Elsinore can serve as a noise source received by nearby residences, businesses, or visitors engaged in other recreational pursuits. Recreational watercraft such as motor boats and jet skis serve as the most substantial noise source originating on the lake. Such noise is also received by wildlife in the natural habitat areas adjacent to the lake, as well as recreational users of trails and other nearby public use areas.

Construction activity is a common source of temporary noise in urban and urbanizing areas such as the City and SOI. Tools, equipment, and contractor vehicles can generate noise on a temporary basis during construction operations for residential, commercial, and other development. This noise can be received by adjacent or nearby residences, businesses, schools, and other receptors.

Existing Ambient Noise Levels

To determine baseline ambient noise conditions throughout the City, for purposes of environmental review for the proposed GPU, noise measurements were recorded at five receptor locations for a single, 10-minute duration. All noise measurements were recorded on the same day. The monitoring locations are shown on **Figure 3.5-1, Noise Monitoring Locations**. The results of short-term noise modeling at these locations and the dominant noise sources affecting the ambient noise level are summarized in **Table 3.5-1, City of Lake Elsinore Short-Term Monitoring Noise Levels**.



Sources: City of Lake Elsinore, County of Riverside

City of Lake Elsinore
Dream Extreme

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City of Lake Elsinore
Noise Monitoring Locations
Figure 3.5-1

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Table 3.5-1, City of Lake Elsinore Short-Term Monitoring Noise Levels

Receiver [1]	Start Time	Measured Sound Levels (dBA)				Dominant Noise Sources
		L_{EQ}	L_{90}	L_{50}	L_{10}	
1	12:05 pm	53	42.2	47.7	52.9	Small family using playground approx. 100 ft. from meter; park otherwise deserted. Two small planes overpass, medium altitude
2	12:47 pm	42	35.3	38.9	44.7	One car passby at slow speed, one jet overflight, high altitude
3	1:39 pm	50.6	46.6	48.7	52.6	Freeway, birds, leaf blower
4	2:20 pm	49.6	44.1	47.2	53.2	Birds, traffic on Lake St./Grand Ave. intersection with Lakeshore Dr.
5	3:49 pm	41.4	31.2	33.5	42	Humming of power lines on south side of El Toro Rd. One jet overflight, high altitude.
[1] Receiver/Monitoring locations are shown in **Figure 3.5-1**						

Traffic Noise

The noise generated from vehicles using roads within the City is primarily dependent upon the number of vehicles, type of vehicles (mix of automobiles, trucks, and other large vehicles), and speed.

Noise analysis for this environmental review included modeling ambient traffic-related noise to determine the approximate noise contours along busier roadways within the City and SOI. **Table 3.5-2, Modeled Existing Roadway Noise Levels**, summarizes the daily traffic volumes, the estmated Ldn noise level at 100 feet from the roadway centerline, and the distance from the roadway centerline to the 70-, 65-, and 60-dBA Ldn contours. Since these calculated contours do not take into account shielding caused by existing buildings, walls, or topographical features, the distances should be considered to be worst-case estimates of existing noise exposure along roadways in the City.

Figure 3.5-2, Existing Noise Contours and **Figure 3.5-3, Existing CNEL Contours – 3rd Street Annexation,** presents the approximated 70-, 65-, and 60-dBA Ldn contours associated with major roadway features in the planning area and the 3rd Street Annexation area. As the figure shows, the roadway feature that generates the highest level of ambient traffic noise is the northwest-southeast trending I-15, which bisects the entire length of the City. The high traffic noise levels along I-15 are attributed to the combination of high vehicle speeds and traffic volumes. The 70, 65 and 60 contours also are shown for Riverside Drive, Grand Avenue, Lakeshore Drive, and Railroad Canyon Drive.

Table 3.5-2, Modeled Existing Roadway Noise Levels

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
Temescal Canyon Road	Larson Road	Lake Street	6,500	45	61.5	27.0	58.1	125.1
Lake Street	I-15	Temescal Canyon Road	17,500	45	65.8	52.2	112.4	242.1
	Temescal Canyon Road	Coal Road	16,800	45	65.6	50.8	109.4	235.6
	Coal Road	Lakeshore Drive	18,300	45	66.0	53.8	115.8	249.4
	Lakeshore Drive	Broadway Avenue	14,700	40	63.8	38.2	82.3	177.2
	Machado Street	Riverside Drive	6,600	45	61.6	27.3	58.7	126.4
Grand Avenue	Riverside Drive	Macy Street	21,400	40	65.4	49.1	105.7	227.6
	Macy Street	SR-74	19,300	40	65.0	45.8	100.0	212.5
	SR-74	Adelfa Street	16,500	45	65.6	50.2	108.1	232.8
	Adelfa Street	Corydon Street	22,200	45	66.8	61.2	131.7	283.7
	Corydon Street	Bryant Street	16,800	45	65.6	50.8	109.4	235.6
Lakeshore Drive	Lake Street	Terra Cotta Road	13,500	45	64.7	43.9	94.6	203.7
	Machado Street	Riverside Drive	19,100	40	64.9	45.5	98.0	211.0
	Riverside Drive	Chaney Street	19,000	40	64.9	45.5	98.0	211.0
	Avenue 6	Diamond Drive	14,200	40	63.6	37.3	80.4	173.2
Mission Trail	Lakeshore Drive	Malaga Road	17,600	40	64.6	43.1	92.8	199.8
	Malaga Road	Olive Street	17,900	50	67.1	63.4	136.5	294.0
	Olive Street	Lemon Street	17,400	50	67.0	62.2	133.9	288.5

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Lemon Street	Corydon Street	15,700	50	66.5	58.1	125.1	269.4
	Corydon Street	Bundy Canyon Road	14,900	50	66.3	56.1	120.8	260.2
	Bundy Canyon Road	Canyon Drive	14,800	50	66.2	55.8	120.2	259.0
Corydon Street	Mission Trail	Bryant Street	8,800	40	61.5	27.2	58.5	125.9
	Palomar Street	Grand Avenue	7,900	40	61.1	25.3	54.4	117.2
Collier Avenue	Nichols Road	Riverside Drive	7,300	45	62.0	29.2	62.8	135.2
	Riverside Drive	Central Avenue	25,900	45	67.5	67.8	146.0	314.4
	Central Avenue	Chaney Street	9,700	45	63.2	35.2	75.9	163.4
SR-74/Ortega Highway	Mazie Avenue	Greenwald Avenue	18,300	50	67.2	64.3	138.5	298.4
	Greenwald Avenue	Riverside Street	19,500	50	67.4	67.1	144.5	311.3
	Riverside Street	Ramsgate Drive	20,900	50	67.7	70.3	151.3	326.0
	Ramsgate Drive	Conrad Avenue	21,200	50	67.8	70.9	152.8	329.1
	Conrad Avenue	Cambern Avenue	22,400	45	66.9	61.5	132.5	285.4
	Cambern Avenue	Interstate 15	32,200	45	68.5	78.4	168.8	363.5
Central Avenue/SR-74	Interstate 15	Collier Avenue	33,200	45	68.6	80.0	172.2	371.0
	Collier Avenue	Pasadena Avenue	2,800	35	55.2	10.2	22.0	47.3
Riverside Drive/SR-74	Collier Avenue	Baker Street	25,000	45	67.4	66.2	142.6	307.1
	Lakeview Avenue	Lakeshore Drive	24,700	40	66.0	54.0	116.3	250.4
	Lakeshore Drive	Lehr Drive	29,100	40	66.7	60.2	129.7	279.4
	Joy Street	Lincoln Street	25,300	40	66.1	54.9	118.1	254.5

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Lincoln Street	Lake Crest Avenue	22,000	40	65.5	50.0	107.6	231.8
	Eisenhour Drive	Grand Avenue	19,400	40	65.0	46.0	100.0	213.2
SR-74/Ortega Highway	Grand Avenue	Cleveland National Forest	12,500	45	64.3	41.7	89.8	193.5
Main Street	Flint Street	Pottery Street	13,200	30	60.3	22.6	78.6	104.5
	Peck Street	Graham Avenue	6,900	30	57.5	14.7	31.5	67.9
	Graham Avenue	Limited Street	7,600	30	57.9	15.6	33.6	72.4
Greenwald Avenue	SR-74	Vacation Drive	4,000	50	60.6	23.4	50.3	108.3
Summerhill Drive	Vacation Drive	Railroad Canyon Road	13,500	40	63.4	36.1	77.7	167.4
Grape Street	Railroad Canyon Road	Malaga Road	14,700	35	62.4	30.8	66.3	142.8
Auto Center Drive	Franklin Street	Mill Street	3,300	40	57.3	14.1	30.4	65.5
Diamond Drive	I-15	Lakeshore Drive	22,600	30	62.7	32.3	69.5	149.6
	Lakeshore Drive	Campbell Street	2,700	35	55.0	10.0	21.5	46.2
Lincoln Street	Robin Drive	Riverside Drive/SR-74	10,500	35	60.9	24.6	53.0	114.1
Nichols Road	Collier Avenue	Interstate 15	9,500	20	55.1	10.2	21.9	47.2
	Interstate 15	El Toro Road	8,600	30	58.5	17.0	36.5	78.6
Graham Avenue	Spring Street	Main Street	8,200	30	58.3	16.4	35.4	76.1
Franklin Street	Avenue 6	Auto Center Drive	5,600	25	54.9	9.8	21.0	45.1
Malaga Road	Diamond Drive	Mission Trail	2,700	35	55.0	10.0	21.5	46.2

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Mission Trail	Lakeview Terrace	3,100	35	55.6	10.9	23.5	50.6
Railroad Canyon Road	Skylink Drive	Canyon Hills Road	31,200	50	69.5	91.8	197.7	425.8
	Canyon Hills Road	Summerhill Drive/Grape	33,700	50	69.8	96.6	208.1	448.2
	Summerhill Drive/Grape	Interstate 15	31,500	30	64.1	40.3	86.7	186.7
Bundy Canyon Road	Mission Trail	Almond Street	12,100	45	64.2	40.8	87.9	189.3
	Almond Street	Orange Street	22,300	25	60.9	24.4	52.6	113.2
	Interstate 15	Cherry Street	23,700	45	67.1	63.9	137.6	296.4
Canyon Hills Road	Railroad Canyon Road	Sprucewood Way	12,100	45	64.2	40.8	87.9	189.3
Interstate 15	Clinton Keith Road	Baxter Road	127,000	70	79.4	422.5	910.2	1,961.0
	Baxter Road	Bundy Canyon Road	120,000	70	79.2	406.8	876.5	1,888.2
	Bundy Canyon Road	Railroad Canyon Road	116,000	70	79.0	397.8	856.9	1,846.0
	Railroad Canyon Road	Main Street	124,000	70	79.3	415.8	895.8	1,930.0
	Main Street	SR-74 Junction	120,000	70	79.2	406.8	876.5	1,888.2
	SR-74 Junction	Nichols Road	108,000	70	78.7	379.3	817.0	1,760.2
	Nichols Road	Lake Street	110,000	70	78.8	383.9	827.1	1,781.8
	Lake Street	Indian Trail Road	116,000	70	79.0	397.8	856.9	1,846.0
	Indian Trail Road	Temescal Canyon Road	123,000	70	79.3	413.6	891.0	1,919.6

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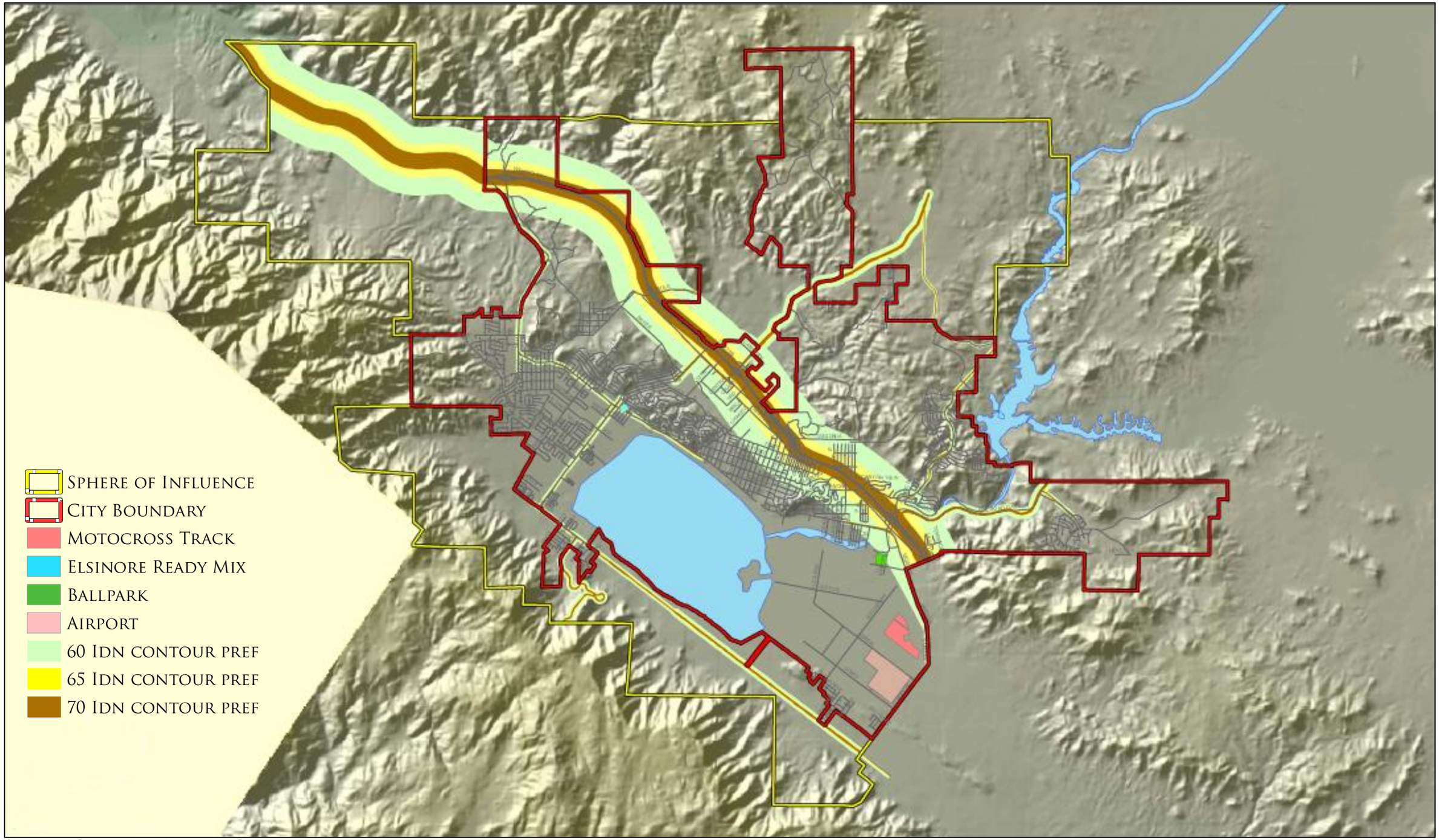

Sources: City of Lake Elsinore, County of Riverside

City of Lake Elsinore
Dream Extreme

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0 750 1,500 Miles

City of Lake Elsinore
Existing Noise Contours
Figure 3.5-2

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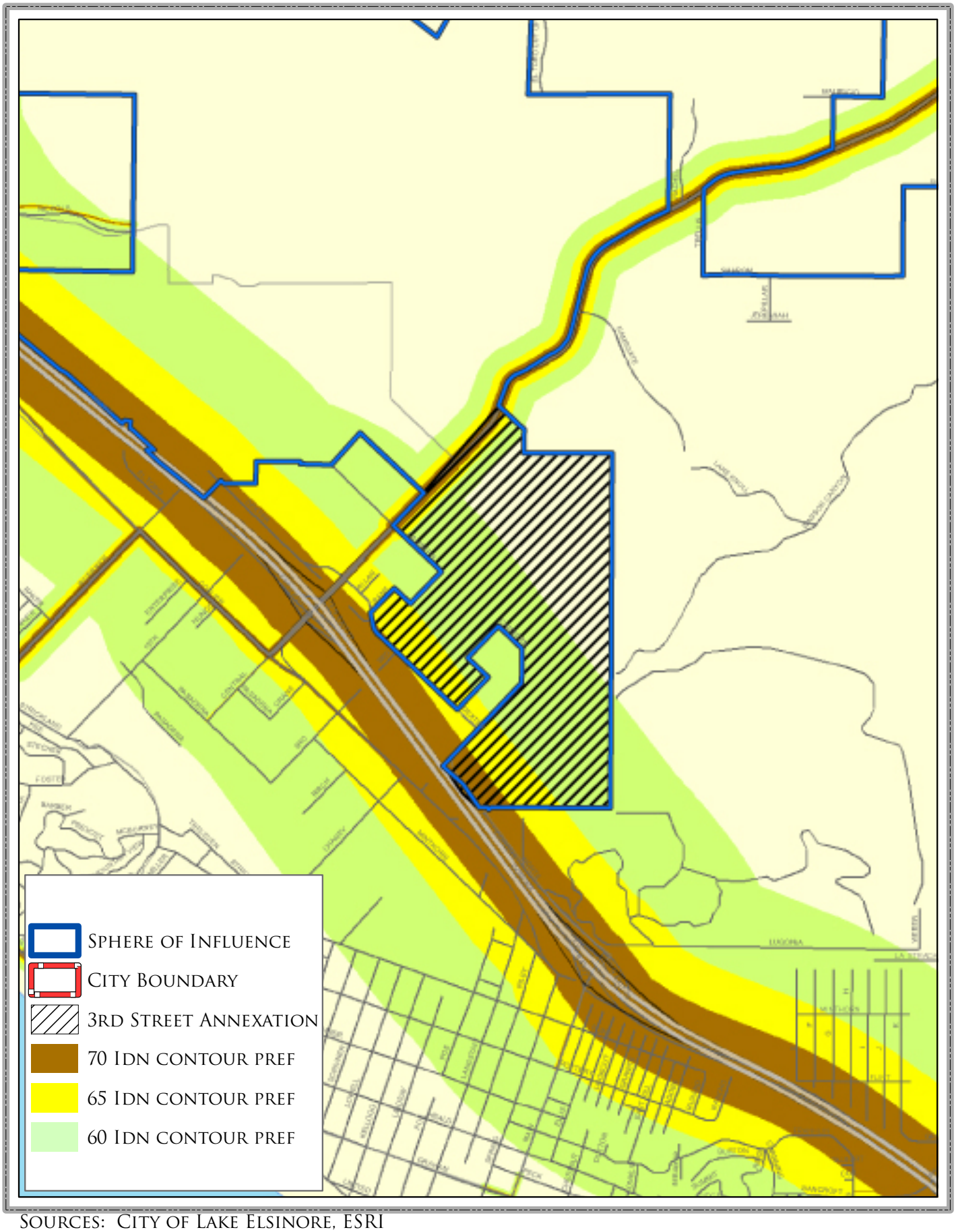

Sources: City of Lake Elsinore, ESRI

City of Lake Elsinore
Dream Extreme

Existing CNEL Contours
3rd Street Annexation
Figure 3.5-3

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VIBRATION

As with noise, the perception of vibration is described by both its amplitude and frequency. Amplitude may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Vibration can be felt outdoors, but the perceived intensity of vibration impacts are much greater indoors due to structural shaking. The most common sources of vibration in the Lake Elsinore planning area are transit vehicles, construction equipment, and other large vehicles. Several land uses are especially sensitive to vibration, and therefore have a lower vibration threshold. These uses include, but are not limited to concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices. Because the major causes of vibration within the planning area are vehicular, the major concern for vibration impacts is along roadways; construction and mining sites can also serve as a temporary source of significant vibration impacts.

Table 3.5-3, Human Reaction to Various Continuous Vibration Levels, presents estimated human reaction to various levels of peak particle velocity, according to Caltrans standards. Traffic vibrations exhibit a range of frequencies similar to typical construction activities; however, due to their suspension systems, city buses often generate significantly higher frequencies, around 30 Hz, at high vehicle speeds.

Table 3.5-3, Human Reaction to Various Continuous Vibration Levels

VIBRATION LEVEL PEAK PARTICLE VELOCITY (INCHES PER SECOND)	HUMAN REACTION
0.006 – 0.019	Threshold of perception, possibility of intrusion
0.08	Vibrations readily perceptible
0.10	Continuous vibration begins to annoy people
0.20	Vibrations annoying to people in buildings
0.40 – 0.60	Vibrations considered unpleasant by people when subjected to continuous vibrations and unacceptable to some people walking on bridges
Source: California Department of Transportation, *Transportation – and Construction-Induced Vibration Guidance Manual*, June 2004, Appendix A, Table 2	

3.5.3 REGULATORY SETTING

FEDERAL

Under authority of the Noise Control Act of 1972 (Public Law 92 574) the federal government specifically preempts local control of noise emissions from aircraft, railroad, and interstate highways. The United States Environmental Protection Agency (USEPA) retains major public information and federal agency coordination roles, but individual federal agencies retain authority to adopt noise regulations pertaining to agency programs. The USEPA can require other federal agencies to justify their noise regulations in terms of the federal Noise Control Act policy requirements. Federal agencies that maintain noise standards that could potentially affect projects within the City include Housing and Urban Development (HUD) for federally funded housing projects, Federal Aviation Administration (FAA) for aircraft noise, FHWA for federally funded highway projects, and Federal Transit Authority for federally funded transit projects.

In 1974, in response to the requirements of the federal Noise Control Act, the USEPA identified indoor and outdoor noise limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor Ldn limits of 55 dB and indoor Ldn limits of 45 dB are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. Sound-level criteria to protect against hearing damage in commercial and industrial areas are identified as 24 hour Leq values of 70 dB (both outdoors and indoors).

STATE

The State of California General Plan Guidelines (OPR 2003) identify requirements for noise standards to be set forth in noise elements of local general plans. These guidelines include a sound level/land use compatibility chart that categorizes various outdoor Ldn ranges into up to four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable) by land use. For many land uses, the table shows overlapping Ldn ranges for two or more compatibility categories. As described below, the City of Lake Elsinore's General Plan has incorporated this table into its noise element.

Title 24 of the California Code of Regulations Part 2 "California Noise Insulation Standards" establishes minimum noise insulation standards for new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single-family residences. Under this regulation, interior noise levels attributable to exterior noise sources cannot exceed 45 Ldn in any habitable room. Where such residences are located in an environment where exterior noise is 60 Ldn or greater, an acoustical analysis is required to ensure that interior levels do not exceed the 45 Ldn interior standard.

LOCAL

County of Riverside

The Riverside County Airport Land Use Commission governs 16 airports in Riverside County, including the Skylark Airport in Lake Elsinore. In November 2004, the ALUC adopted the Riverside County Airport Land Use Compatibility Plan (ALUCP) Policy Document, which establishes land use, noise and safety policies in the vicinity of airports throughout Riverside County, including compatibility criteria and maps for the influence areas of individual airports. The ALUCP also establishes procedural requirements for compatibility review of development proposals related to the Skylark Airport Influence Area.

City of Lake Elsinore 1990 General Plan

The existing 1990 City of Lake Elsinore General Plan establishes policies concerning the generation and control of noise that could adversely affect citizens and noise-sensitive land uses. The 1990 General Plan includes a noise and land use compatibility matrix which is used to assess the compatibility of proposed land uses with the noise environment. (See **Table 3.5-4, Lake Elsinore Noise and Land Use Compatibility Matrix.**) This table has also been incorporated into the proposed General Plan Update.

Table 3.5-4, Lake Elsinore Noise and Land Use Compatibility Matrix

LAND USE CATEGORIES		DAY-NIGHT NOISE LEVEL (L_{DN})						
CATEGORIES	USES	≤55	60	65	70	75	80≥	
Residential	Single family, Duplex, Multiple family	A	A	B	B	C	D	D
Residential	Mobile Homes	A	A	B	C	C	D	D
Commercial Regional District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional Village District Special	Commercial Retail Bank, Restaurant, Movie Theatre	A	A	A	A	B	B	C
Commercial Industrial Institutional	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial Recreation	Amphitheaters, Concert Halls	B	B	C	C	D	D	D
Institutional Civic Center	Auditorium, Meeting Halls	B	B	C	C	D	D	D
Commercial Recreation	Children's amusement parks, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D

LAND USE CATEGORIES		DAY-NIGHT NOISE LEVEL (L_{DN})						
CATEGORIES	USES	≤55	60	65	70	75	80≥	
Commercial General, Special Industrial, Institutional	Automotive Service Stations, Auto Dealerships, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional General	Hospital, Church, Library, Schools, Classroom	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
Open Space	Golf Courses, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
Agriculture	Agriculture	A	A	A	A	A	A	A
INTERPRETATION								
Zone A Clearly Compatible	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.							
Zone B Normally Compatible	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows fresh air supply systems or air conditioning, will normally suffice.							
Zone C Normally Incompatible	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.							
Zone D Clearly Incompatible	New construction or development should generally not be undertaken.							

Additionally, the 1990 General Plan includes specific noise standards which represent city policies related to land uses and acceptable noise levels. These standards, as listed in **Table 3.5-5, Interior and Exterior Noise Standards**, have also been incorporated into the proposed General Plan Update.

Table 3.5-5, Interior and Exterior Noise Standards

LAND USE CATEGORIES		ENERGY AVERAGE LDN	
CATEGORIES	USES	INTERIOR	EXTERIOR
Residential	Single Family, Duplex, Multiple Family	45 [3, 5]	60
	Mobile Homes	–	60 [4]
Commercial, Institutional	Hotel, Motel, Transient Lodging	45 [5]	–
	Hospital, School's classroom	45	–
	Church, Library	45	–

INTERPRETATION

1. Indoor environment excluding: Bathrooms, toilets, closets, corridors.

2. Outdoor environment limited to: Private yard of single family, multi-family private patio or balcony which is served by a means of exit from inside, Mobile Home Park.

3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.

4. Exterior noise level should be such that interior noise level will not exceed 45 CNEL.

5. As per California Administrative Code, Title 24, Part 6, Division T25, Chapter 1, Subchapter 1, Article 4, Section T25-28.

City of Lake Elsinore Municipal Code – Title 17 (Zoning Code)

Chapter 17.176 (Noise Control) of the City of Lake Elsinore's Zoning Code (Title 17 of the Lake Elsinore Municipal Code) includes policies related to noise production, regulation, and enforcement. Chapter 17.176 establishes base ambient noise levels for receiving land uses that apply according to the land use category and time. These standards are shown in **Table 3.5-6, Municipal Code Exterior Noise Limits**.

Table 3.5-6, Municipal Code Exterior Noise Limits

Receiving Land Use	Time	Noise Level That May Not Be Exceeded for More Than a Cumulative Period of:				
		30 min/hr	15 min/hr	5 min/hr	1 min/hr	Anytime
Single-Family Residential	10:00 p.m. – 7:00 a.m.	40	45	50	55	60
	7:00 a.m. – 10:00 p.m.	50	55	60	65	70
Multiple Dwelling Residential	10:00 p.m. – 7:00 a.m.	45	50	65	70	65
	7:00 a.m. – 10:00 p.m.	50	55	60	65	70
Public Space						
Limited Commercial and Office	10:00 p.m. – 7:00 a.m.	55	60	65	70	75
	7:00 a.m. – 10:00 p.m.	60	65	70	75	80
General Commercial	10:00 p.m. – 7:00 a.m.	60	65	70	75	80
	7:00 a.m. – 10:00 p.m.	65	70	75	80	85
Light Industrial	Anytime	70	75	80	85	90
Heavy Industrial	Anytime	75	80	85	90	95

Lake Elsinore Municipal Code Section 17.176.080(F) prohibits construction and demolition activities between the weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound from such activities creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the City. This section of the Municipal Code also establishes maximum noise levels for mobile and stationary equipment used during construction activities.

3.5.4 General Plan Update Goals and Policies

The City of Lake Elsinore General Plan Update addresses Noise in Chapter 3.0 (Public Safety and Welfare) and in various District Plans. The goals, policies and implementation programs related to noise are listed in **Table 3.5-7, General Plan Noise-Related Goals, Policies and Implementation Programs**, and **Table 3.5-8, District Plan Noise-Related Goals, Policies and Implementation Programs**. The intent of these goals, policies and implementation programs is to locate new development in areas with compatible noise levels and minimize intrusive noise from existing and new development.

Table 3.5-7, General Plan Noise-Related Goals, Policies and Implementation Programs

GENERAL PLAN GOALS, POLICIES AND IMPLEMENTATION PROGRAMS
Chapter 3.0 – Public Safety and Welfare (Section 3.4 - Noise)
Goal 7 Maintain an environment for all City residents and visitors free of unhealthy, obtrusive, or otherwise excessive noise conditions.
Policy 7.1 Apply the noise standards set forth in the Lake Elsinore Noise and Land Use Compatibility Matrix (see Table 3-1) and Interior and Exterior Noise Standards (see Table 3-2) when considering all new development and redevelopment proposed within the City.
Policy 7.2 Require that mixed-use structures and areas be designed to prevent transfer of noise and vibration from commercial areas to residential areas.
Policy 7.3 Strive to reduce the effect of transportation noise on the I-15. .
Policy 7.4 Consider estimated roadway noise contours based upon Figure 3-5, Noise Contours, when making land use design decisions along busy roadways throughout the City.
Policy 7.5 Participate and cooperate with other agencies and jurisdictions in the development of noise abatement plans for highways.
Implementation Program Through project review and the CEQA processes, the City shall assess new development and reuse applications for potential hazards, and shall require compliance with noise standards and compatibility criteria where appropriate.

Table 3.5-8, District Plan Noise-Related Goals, Policies and Implementation Programs

DISTRICT PLAN	DISTRICT PLAN GOALS, POLICIES AND IMPLEMENTATION PROGRAMS
Alberhill	Goal 1 The primary goal of the Alberhill District is to support and maintain a healthy transition from extractive/mining activities to a network of residential communities with a balanced mix of residential, commercial, light industrial, business professional, and institutional/public uses that provide a sense of place and high quality of life. Policy AH 1.5 Encourage new non-mining land uses adjacent to existing mining operations to provide an adequate buffer, with a buffer distance from mining operations based on an evaluation of: noise, aesthetics, drainage, operating conditions and operating hours, biological resources, topography, lighting, traffic, and air quality.
East Lake	Goal 1 Integrate the future residential and commercial development with the recreational and open space land use framework to create a cohesive master planned community. Policy EL 1.1 Through the project and CEQA processes require adequate noise buffers between residential, commercial and active recreational facilities such as the airstrip and motocross.

3.5.5 SIGNIFICANCE THRESHOLDS

The City of Lake Elsinore has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, Appendix G of the State CEQA Guidelines indicates that impacts related to noise may be considered potentially significant if the project would result in:

- exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- 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, would the project expose people residing or working in the project area to excessive noise levels.
- for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

3.5.6 IMPACT ANALYSIS

METHODOLOGY

Projected roadway noise impacts from vehicular traffic were projected using Sound32 (Caltrans' computer implementation of the FHWA Traffic Noise Prediction Model) modeling and traffic information provided in Section 3.4 (Transportation and Circulation) of this PEIR. To account for the ground-effect attenuation, soft site conditions were used to calculate all noise contours. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground, as compared with a 3.0 dBA drop-off rate over hard ground such as concrete, stone, and very hard packed earth. In addition, soft site conditions account for the effect of existing topography, noise barriers, or buildings that may alter the roadway noise levels. Soft site conditions are appropriate for the development of noise contour boundaries. Detailed noise modeling results are provided in Appendix E of this PEIR.

The determination as to the significance of potential noise impact is based on a comparison of the noise levels resulting from the proposed project and the noise levels under baseline or existing conditions.

Threshold: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Threshold: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Analysis

Traffic Noise

Implementation of the GPU would increase the number of vehicles utilizing the local circulation system and place new receptors (including residences, commercial developments, etc.) near roadways that experience varying levels of traffic noise. See Section 3.4 (Transportation and Circulation) of this PEIR for a discussion of the results of the traffic study regarding increased traffic levels on local roadways. Additional vehicles on roadways would result in additional noise generated along the affected roadways, and more receptors adjacent to noisy roadways would mean that more people would potentially be affected by traffic noise conditions.

Traffic on roadways such as I-15, SR-74, and roadways including Riverside Drive, Lakeshore Drive, Grand Avenue, and Railroad Canyon Drive currently generate noise levels in excess of exterior standards of the City of Lake Elsinore for certain properties near these roadways. **Figure 3.5-2, Existing Noise Contours,** shows where excessive traffic noise along these high-traffic roadways already exists.

Traffic on these and other roadways would increase with buildout of the Land Use Plan. As discussed in Section 3.4, existing ADT on I-15 ranges from approximately 110,000 to approximately 130, 000. At buildout of the GPU in 2030, ADT on I-15 could increase to between 222,000 and 272,000. The ADT on Riverside Drive would increase from approximately 19,000–30,000 to 29,000–60,000 ADT. The ADT on Grand Avenue would increase from 6,000–24,000 to approximately 19,000–67,000. These increases in anticipated ADT would expand the 70, 65 and 60 Ldn contour beyond that shown in **Figure 3.5-2**. As a result, additional existing and planned land uses would be subject to noise levels in excess of City standards shown in **Table 3.5-4, Lake Elsinore Noise and Land Use Compatibility Matrix**.

An analysis was completed to estimate the change to the Ldn noise contours associated with the buildout 2030 traffic levels calculated for the Land Use Plan. **Table 3.5-9, Modeled General Plan Buildout Roadway Noise Levels**, summarizes the projected daily traffic volumes, the projected Ldn noise level at 100 feet from the roadway centerline and the estimated distance from the roadway centerline to the 70-, 65-, and 60-dBA Ldn contours. The results of the analysis are illustrated in **Figure 3.5-4, Land Use Plan Noise Contours.** These contours do not take into account the effect of any noise barriers, topography, or final roadway grades that may reduce traffic noise levels.

Table 3.5-9, Modeled General Plan Buildout Roadway Noise Levels

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
Temescal Canyon Road	N of Indian Truck Trail	Indian Truck Trail	19,000	45	66.2	55.1	118.7	255.8
	Indian Truck Trail	Horsethief Canyon Road	31,000	55	70.5	107.7	232.1	499.9
	Horsethief Canyon Rd	S of Horsethief Canyon Rd.	50,000	55	72.6	148.2	319.1	687.5
	N of Road "A"	Road "A"	48,000	45	70.2	102.2	220.2	474.4
	Road "A"	S of Road "A"	32,000	45	68.4	78.0	168.1	362.0
	Road "A"	Nichols Road	27,000	45	67.7	69.7	150.1	323.3
	N of Nichols Road	Nichols Road	30,000	45	68.2	74.8	161.0	346.8
Lincoln Street	Nichols Road	S of Nichols Road	26,000	40	66.3	55.9	120.3	259.2
	N of Lake Street	Lake Street	22,000	40	65.5	50.0	107.6	231.8
	Lake Street	Machado Street	8,000	40	61.1	25.5	54.9	118.1
	Machado Street	Riverside Drive	4,000	35	56.7	13.0	27.9	60.0
De Palma Road	N of Indian Truck Trail	Indian Truck Trail	5,000	40	59.1	18.6	40.1	86.4
	Indian Truck Trail	S of Indian Truck Trail	11,000	40	62.5	31.5	67.8	146.1
	N of Horsethief Canyon Rd	Horsethief Canyon Road	3,000	40	56.9	13.3	28.6	61.5
Indian Truck Trail	De Palma Road	Horsethief Canyon Road	3,000	40	56.9	13.3	28.6	61.5
Horsethief Canyon Road	De Palma Rd.	S of De Palma Rd	38,000	40	67.9	71.9	154.9	333.7
	N of Mountain Rd	Mountain Rd	26,000	40	66.3	55.9	120.3	259.2
	Mountain Rd	Mountain Rd	5,000	40	59.1	18.6	40.1	86.4

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
Mountain Road	Horsethief Canyon Rd.	E of Horsethief Canyon Rd	22,000	35	64.1	40.3	86.7	186.8
Road "A"	W of Temescal Canyon Rd	Temescal Canyon Rd	10,000	40	62.1	29.6	63.7	137.1
	Temescal Canyon	Lake Street	45,000	40	68.6	80.5	173.4	373.6
	Lake Street	Nichols Road	14,000	40	63.6	37.0	79.7	171.5
Alberhill Ranch Rd.	Lake Street	Nichols Road	3,000	35	55.5	10.7	23.0	49.5
Lake Street	Walker Canyon Rd.	I-15 NB Ramps	29,000	50	69.2	87.4	188.3	405.5
	I-15 NB Ramps	I-15 SB Ramps	53,000	50	71.8	130.6	281.4	606.2
	I-15 SB Ramps	Road "A"	72,000	50	73.1	160.2	345.1	743.5
	Road "A"	S of Road "A"	41,000	50	70.7	110.1	237.1	510.8
	N of Nichols Rd	Nichols Rd	47,000	50	71.3	120.6	159.7	559.5
	Nichols Rd	Alberhill Ranch Rd	39,000	50	70.5	106.5	229.4	494.1
	Alberhill Ranch Rd	Lakeshore Dr.	43,000	45	69.7	95.0	204.6	440.8
Grand Avenue	Lakeshore Dr.	Lincoln St	19,000	45	62.2	55.1	118.7	255.8
	Lincoln St	Alvarado St	36,000	45	68.9	84.4	181.8	391.6
	Alvarado St	Machado St	30,000	45	68.2	74.8	161.0	346.8
	Machado St	Riverside Dr	33,000	45	68.6	79.7	171.6	369.5
	Riverside Dr	SR-74/Ortega Highway	60,000	45	71.2	118.6	255.5	550.5
	SR-74/Ortega Highway	S of SR-74/Ortega Hwy	54,000	45	70.7	110.6	238.2	513.1

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	N of Stoneman St	Stoneman Street	67,000	45	71.6	127.7	275.0	592.5
Walker Canyon Rd	Lake Street	E of Lake Street	18,000	45	65.9	53.2	114.5	246.7
	N of Nichols Rd	Nichols Rd	15,000	45	65.1	47.1	101.4	218.5
Nichols Rd	Temescal Canyon	Lake Street	16,000	45	65.4	49.2	105.9	228.1
	Lake St.	Road "A"/Alberhill Ranch Rd.	25,000	45	67.4	66.2	142.6	307.1
	Road "A"/Alberhill Ranch Rd.	Terra Cotta Rd	41,000	45	69.5	92.0	198.3	427.1
	Terra Cotta Rd	Baker St	47,000	45	70.1	100.8	217.1	467.8
	Baker St	Collier Ave.	48,000	45	70.2	102.2	220.2	474.4
	I-15 SB Ramps	I-15 NB Ramps	55,000	45	70.8	112.0	241.1	519.4
	I-15 NB Ramps	Walker Canyon Rd	61,000	45	71.2	119.9	258.4	556.7
	Walker Canyon Rd	El Toro Rd.	58,000	45	71.0	116.0	249.8	538.2
	El Toro Rd.	11th St/	37,000	45	69.1	86.0	185.1	398.8
	11th St/	Rosarita Dr.	40,000	45	69.4	90.5	195.0	420.1
	Rosarita Dr.	E of Rosarita Dr.	40,000	45	69.4	90.5	195.0	420.1
	W of SR-74	SR-74	33,000	45	68.4	79.7	171.6	369.5
Riverside St.	SR-74	Steel Valley Rd	25,000	45	67.4	66.2	142.6	307.1
Terra Cotta Rd	Nichols Rd	Lakeshore Dr.	17,000	35	63.0	33.9	73.1	157.3
Lakeshore Drive	Lake Street	Terra Cotta Road	34,000	45	68.7	81.3	175.0	377.0

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Terra Cotta Road	Machado Street	39,000	45	69.3	89.0	191.8	413.1
	Machado Street	Gunnerson St	32,000	45	68.4	78.0	168.1	362.0
	Gunnerson St	Riverside Drive	30,000	45	68.2	74.8	161.0	346.8
	Riverside Drive	Chaney Street	16,000	45	65.4	49.2	105.9	228.1
	Chaney St	Graham Ave.	17,000	45	65.7	51.2	110.3	237.5
Limited St	Lakeshore Dr.	Langstaff St.	10,000	35	60.7	23.8	51.3	110.5
	Langstaff St.	Spring St.	14,000	35	62.2	29.8	64.2	138.2
	Spring St.	Main Street	3,000	35	55.5	10.7	23.0	49.5
Alvarado St.	Grand Ave.	Machado St.	3,000	25	52.1	6.5	13.8	29.8
Machado St.	Lakeshore Dr.	Joy St.	15,000	40	63.9	38.7	83.4	179.6
	Joy St.	Lincoln St.	13,000	40	63.2	35.2	75.8	163.3
	Lincoln St.	Alvarado St.	12,000	40	62.9	33.4	71.9	154.8
	Alvarado St.	Grand Ave.	5,000	40	59.1	18.6	40.1	86.4
Gunnerson St.	N of Lakeshore Drive	Lakeshore Drive	3,000	40	56.9	13.3	28.6	61.5
	W of Riverside Drive	Riverside Drive	9,000	40	61.6	27.6	59.3	127.8
Baker St.	Nichols Rd.	Riverside Dr.	3,000	30	53.9	8.4	18.1	39.0
Pasadena St.	Riverside Dr.	Central Ave.	7,000	45	61.8	28.4	61.0	131.5
	Central Ave.	E. of Central Ave.	6,000	45	61.2	25.6	55.1	118.6
Collier Ave.	Nichols Rd.	Riverside Dr.	22,000	50	68.0	72.7	156.6	337.3

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Riverside Dr.	Enterprise Way	51,000	50	71.6	127.3	274.3	590.8
	Enterprise Way	Central Ave.	55,000	50	71.9	133.9	288.4	621.3
	Central Ave.	Chaney St.	22,000	50	68.0	72.7	156.6	337.3
	Chaney St.	Minthorn St.	17,000	50	66.9	61.2	131.9	284.1
Minthorn St.	Collier St.	Spring St.	17,000	35	63.0	33.9	73.1	157.3
Flint St.	Spring St.	Main St.	14,000	30	60.6	23.5	50.5	108.7
	Main St.	Rancho St.	7,000	30	57.6	14.8	31.8	68.5
	Rancho St.	E. of Rancho St.	8,000	30	58.2	16.2	34.8	74.9
	W. of Avenue 6	Avenue 6	9,000	30	58.7	17.5	37.6	81.0
Franklin St.	Avenue 6	Old Franklin St./Auto Center Dr.	26,000	35	64.8	45.0	97.0	208.8
Auto Center Dr.	Old Franklin St.	W of Diamond Dr.	26,000	40	66.3	55.9	120.3	259.2
	W of Diamond Dr.	Diamond Dr.	24,000	40	65.9	53.0	114.1	245.7
Casino Dr.	Diamond Dr.	I-15 SB Ramps	38,000	40	67.9	71.9	154.9	333.7
	I-15 SB Ramps	Malaga Rd.	13,000	40	63.2	35.2	75.8	163.3
El Toro Rd.	Nichols Rd.	Dexter Ave.	7,000	35	59.1	18.8	40.5	87.1
11th St.	Nichols Rd.	Dexter Ave.	6,000	35	58.5	17.0	36.5	78.6
Rosarita Dr.	Nichols Rd.	Conard Ave.	13,000	40	63.2	35.2	75.8	163.3
Conard Ave.	Rosarita Dr.	Central Ave.	15,000	40	63.9	38.7	83.4	179.6

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
Riverside Dr.	N. of Collier Ave.	Collier Ave.	29,000	40	66.7	60.1	129.4	278.7
	Collier Avenue	Baker Street	59,000	45	71.1	117.3	252.7	544.3
	Baker St.	Gunnerson Street	65,000	45	71.5	125.1	269.5	580.6
	Gunnerson St.	Lakeshore Drive	61,000	45	71.2	119.9	258.4	556.6
	Lakeshore Drive	Joy St.	55,000	45	70.8	112.0	241.1	519.4
	Joy Street	Lincoln Street	53,000	45	70.6	109.2	235.3	506.8
	Lincoln Street	Grand Ave.	34,000	45	68.7	81.3	175.0	377.0
Central Ave.	W. of Collier Ave.	Collier Ave.	7,000	35	59.1	18.8	40.5	87.1
	Collier Ave.	I-15 SB Ramps	60,000	45	71.2	118.6	255.5	550.5
	I-15 SB Ramps	I-15 NB Ramps	56,000	45	70.9	113.3	244.0	525.7
	I-15 NB Ramps	Dexter Ave.	56,000	45	70.9	113.3	244.0	525.7
	Dexter Ave.	Cambern Ave.	46,000	45	70.0	100.0	214.1	461.1
	Cambern Ave.	Conard Ave.	58,000	45	71.0	116.0	249.8	538.2
	Conard Ave.	Rosetta Canyon	48,000	50	71.4	122.3	263.4	567.4
	Rosetta Canyon	Riverside Dr.	51,000	50	71.6	127.3	274.3	590.8
SR-74	Riverside Dr.	Wasson Canyon Rd.	57,000	50	72.1	137.1	295.4	636.3
SR-74/Ortega Hwy.	Grand Ave	S of Grand Ave.	29,000	45	68.0	73.1	157.4	339.0
Cambern Ave.	Dexter Ave.	Central Ave.	28,000	40	66.6	58.7	126.4	272.3

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Central Ave.	3rd St.	16,000	40	64.1	40.4	87.1	187.5
	3rd St.	2nd St.	7,000	40	30.6	23.3	50.2	108.1
2nd St.	Cambern Ave.	Dexter Ave.	9,000	40	61.6	27.6	59.3	127.8
	Dexter Ave.	Camino Del Norte	10,000	55	65.6	50.7	109.2	235.2
Camino Del Norte	2nd St	Main St	14,000	35	62.2	29.8	64.2	138.2
	Main St.	Rosetta Canyon	18,000	40	66.2	43.7	94.2	202.8
	Rosetta Canyon	La Strada	25,000	40	67.4	66.4	142.6	307.4
	La Strada	Avenue 6	32,000	35	65.7	51.7	111.3	239.8
	Avenue 6	Old Franklin St.	6,000	35	58.5	17.0	36.5	78.6
	Old Franklin St.	Summerhill Dr.	6,000	35	58.5	17.0	36.5	78.6
Lakeshore Dr.	Main St.	Avenue 6	42,000	45	69.6	93.5	201.5	434.0
	Avenue 6	Diamond Dr.	42,000	45	69.6	93.5	201.5	434.0
Mission Trail	Diamond Dr.	Malaga Rd.	26,000	45	67.5	68.0	146.3	315.2
	Malaga Rd.	Elberta Rd.	27,000	50	68.9	83.3	179.5	386.7
	Elberta Rd.	Olive St.	22,000	50	68.0	72.7	156.6	337.3
	Olive St.	Lewis St.	28,000	50	69.0	85.4	183.9	396.2
	Lewis St.	Lemon St.	29,000	50	69.2	87.4	188.3	405.5
	Lemon St.	Bundy Canyon Rd.	19,000	50	67.3	65.9	142.0	305.9
Rosetta Canyon	Central Ave.	E of Central Ave.	8,000	45	62.4	31.0	66.7	143.7

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	N of Camino Del Norte	Camino Del Norte	13,000	45	64.5	42.8	92.2	198.6
Wasson Canyon Rd.	SR-74	Riverside Dr.	4,000	40	58.1	16.1	34.6	74.4
Avenue 6	Camino Del Norte	1-15 NB Ramps	28,000	40	66.6	58.7	126.4	272.3
	I-15 NB Ramps	I-15 SB Ramps	31,000	40	67.0	62.8	135.3	291.4
	I-15 SB Ramps	Flint St.	32,000	40	67.2	54.2	138.2	297.6
	Flint St.	Lakeshore Dr.	11,000	30	59.5	20.0	43.0	92.6
Greenwald Ave.	Riverside Dr.	Scenic Crest Dr.	21,000	40	65.3	48.5	104.4	224.8
	Scenic Crest Dr.	Via Scenica	20,000	40	65.1	46.9	101.0	217.6
	Via Scenica	Summerhill Dr.	13,000	40	63.2	35.2	75.8	163.3
Vacation Dr.	Summerhill Dr.	E. of Summerhill Dr.	9,000	40	61.6	27.6	59.3	127.8
Summerhill Dr.	Greenwald Ave.	La Strada	14,000	45	64.8	45.0	96.9	208.7
	La Strada	Via Scenica	12,000	45	64.2	40.6	87.4	188.3
	Via Scenica	Canyon Estates Dr.	12,000	45	64.2	40.6	87.4	188.3
	Canyon Estates Dr.	Railroad Canyon Rd.	22,000	45	66.8	60.8	130.9	282.0
Grape St.	Railroad Canyon Rd.	I-15 NB Ramps	33,000	45	68.6	79.7	171.6	369.5
	I-15 NB Ramps	S of I-15 NB Ramps	9,000	45	62.9	33.5	72.2	155.4
La Strada	Camino Del Norte	N of Camino Del Norte	21,000	45	66.6	58.9	126.9	273.4
	N of Camino Del Norte	W of Via Scenica	14,000	45	64.8	45.0	96.9	208.7
	W of Via Scenica	Via Scenica	12,000	45	64.2	40.6	87.4	188.3

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Via Scenica	Summerhill Dr.	3,000	35	55.5	10.7	23.0	49.5
Railroad Canyon Rd.	I-15 Freeway	Summerhill Dr.	46,000	30	65.8	51.8	111.5	240.2
	Summerhill Dr.	E of Summerhill Dr.	67,000	30	67.4	66.5	143.3	308.7
	E of Summerhill Dr.	W of Canyon Hills Dr.	68,000	50	72.9	154.2	332.2	715.7
	W of Canyon Hills Dr.	Canyon Hills Dr.	65,000	50	72.7	149.7	322.4	694.5
	Canyon Hills Dr.	E of Canyon Hills Dr.	54,000	50	71.9	132.3	284.9	316.8
Canyon Hills Dr.	Railroad Canyon Rd.	Lost Rd.	29,000	45	68.0	73.1	157.4	339.0
	Lost Rd.	Cottonwood Canyon Rd.	25,000	45	67.4	66.2	142.6	307.1
	Cottonwood Canyon Rd.	E. of Cottonwood Canyon Rd.	24,000	45	67.2	64.4	138.7	2998.9
Diamond Dr.	I-15 Freeway	Auto Center Dr.	46,000	30	65.8	51.8	111.5	240.2
	Auto Center Dr.	Mission Trail	51,000	30	66.2	55.5	119.5	257.3
	Mission Trail	Malaga Rd.	42,000	35	66.9	62.0	133.5	287.5
	Malaga Rd.	Elberta Rd. N	29,000	40	66.7	60.1	129.4	278.7
	Elberta Rd. N	Elberta Rd. S	27,000	40	66.4	57.3	123.4	265.8
	Elberta Rd. S	Olive St.	22,000	40	65.5	50.0	107.6	231.8
	Olive St.	W. of Corydon St.	18,000	40	64.7	43.7	94.2	202.8
	W. of Corydon St.	Corydon St.	15,000	40	63.9	38.7	83.4	179.6
Old Franklin St.	Auto Center Dr.	Canon Estates Drive	5,000	35	57.7	15.0	32.3	69.6
Corydon St.	Grand Ave.	Palomar St.	37,000	40	67.8	70.7	152.2	327.9

Roadway	From:	To:	Total Daily Traffic Volumes	Vehicle Speed (mph)	Ldn at Receiver (100 ft) (dBA)	Distance to Noise Contour		
						70 dBA Ldn	65 dBA Ldn	60 dBA Ldn
	Palomar St.	Diamond Dr.	43,000	40	68.4	78.1	168.2	362.4
	Diamond Dr.	Mission Trail	11,000	40	62.5	31.5	67.8	146.1
Interstate 15	Clinton Keith Road	Baxter Road	222,000	70	81.9	613.1	1,320.8	2,845.6
	Baxter Road	Bundy Canyon Road	222,000	70	81.9	613.1	1,320.8	2,845.6
	Bundy Canyon Road	Railroad Canyon Road	222,000	70	81.9	613.1	1,320.8	2,845.6
	Railroad Canyon Road	Franklin Street	262,000	70	82.6	684.7	1,475.1	3,177.9
	Franklin Street	Main Street	274,000	70	82.8	705.4	1,519.8	3,274.2
	Main Street	SR-74 Junction	283,000	70	82.9	702.8	1,444.9	3,345.5
	SR-74 Junction	Nichols Road	254,000	70	82.4	670.7	1,448.7	3,112.8
	Nichols Road	Lake Street	255,000	70	82.5	672.4	1,467.5	3,121.0
	Lake Street	Indian Trail Road	260,000	70	82.5	681.2	1,512.4	3,161.7
	Indian Trail Road	Temescal Canyon Road	272,000	70	82.7	702.0	1,519.8	3,285.2

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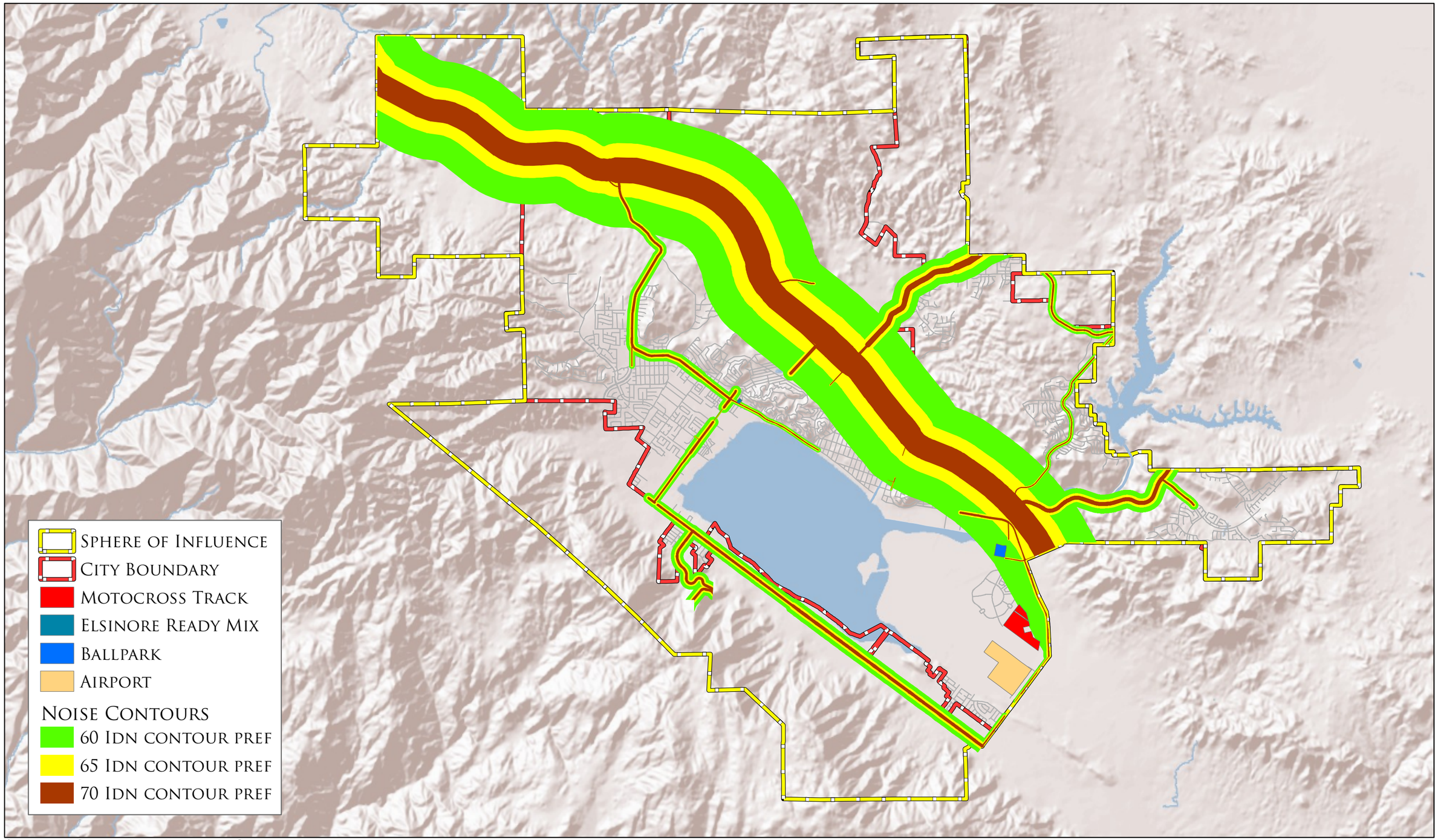

Sources: City of Lake Elsinore, County of Riverside

City of Lake Elsinore
Dream Extreme

N

0 1.25 2.5 Miles

City of Lake Elsinore
Land Use Plan Noise Contours
Figure 3.5-4

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At 2030 traffic levels associated with buildout of the GPU, the ADT on the freeways and roadways would increase as described in the previous paragraph. As shown by comparing **Figure 3.5-2** and **Figure 3.5-4**, the increase in traffic at GPU buildout would extend the 70 dBA, 65 dBA and 60dBA Ldn contours beyond existing conditions. For I-15, the 65 Ldn contour would extend beyond that for existing conditions by approximately 400 to 620 feet. For the SR-74/Ortega Highway corridor, the 65 Ldn contour could extend beyond existing conditions by approximately 70 to 135 feet. The 65 Ldn contour on Grand Avenue would extend approximately 65 to 165 feet beyond existing conditions. The 65 Ldn contour on Riverside Drive would extend approximately 75 to 1400 feet beyond existing conditions. The 65 Ldn contour on Lakeshore Drive would extend approximately 70 to 120 feet from existing conditions. The 65 Ldn on Railroad Canyon Road would extend approximately 25 to 125 feet. As shown in **Table 3.5-4** and **Table 3.5-5**, residential uses are generally incompatible inside the 65 Ldn contour. Considering that the 65 Ldn contour would extend beyond existing conditions, additional existing and planned residential areas in proximity to major public roadways could be subject to exterior noise levels that exceed City standards.

As discussed in Section 3.4 of this PEIR, the Circulation Element also proposes that various roadways be upgraded, downgraded or realigned to accommodate planned traffic levels. As an example, a portion of Riverside Drive in the vicinity of I-15 would be realigned. Certain collector roadways are also proposed to be upgraded. Realignments of roadways and roadway upgrades would increase traffic level noise in areas that are not currently subject to traffic noise or traffic noise in excess of City standards.

Measures Proposed in GPU to Address Traffic Noise

The GPU considers future traffic noise levels in the land use plan it establishes as well as its goals and policies. Policy 7.4 of Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) establishes the City's intent to minimize the impact of roadway noise on sensitive receptors by reviewing noise contours on busy roadways and incorporating such information into project-specific land use decisions. Individual development projects within the City will be required to study projected roadway noise impacts and, where necessary, incorporate mitigation measures to reduce noise received by the proposed development to the acceptable levels set forth in the Zoning Code.

Policy 7.1 of Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) states the City's intent to apply the Noise and Land Use Compatibility Matrix and the Interior and Exterior Noise Standards when approving new projects. Policy 7.5 requires coordination with other agencies to reduce traffic noise from highways. This means that new development would need to consider the noise levels generated by adjacent roadways as received by the proposed uses. Noise levels would be determined by project-specific noise analysis, where necessary. If traffic noise exceeds the allowable levels in the compatibility matrix or the interior/exterior standards, the City would require the incorporation of binding mitigation into the project to reduce the received noise to acceptable levels.

The intent of the GPU and the Zoning Code is to provide relevant objectives, policies, and standards that would be applied to individual development projects to reduce the traffic noise associated with buildout of the GPU to a less-than-significant level. Many future development projects implemented pursuant to the policies of the GPU and zoning regulations will require project-level analysis of traffic noise impacts, and any related impacts will require project-specific mitigation to assure that receptors are not exposed to traffic noise exceeding allowable levels. However, in some cases where realignments or upgrades of roadways are proposed or traffic levels will increase substantially, such as that anticipated for I-15, Riverside Drive, and Grand Avenue, there may be no mitigation that would adequately reduce future traffic noise as experienced by existing land uses or future development projects, leading to identification of significant and unmitigated impacts at the project level.

Commercial Noise

The GPU proposes commercial development that would generate noise related to such sources as delivery operations, parking lots, and human activity. Policy 7.1 from Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) sets forth the City's overall intent to discourage the placement of residents and other noise-sensitive uses in proximity to stationary noise sources, including commercial uses. The Land Use Plan reflects this policy. Noise-generating commercial development is required to adhere to the Zoning Code. Policy 7.2 requires that new mixed use developments be designed to prevent transfer of noise from commercial to residential areas. As set forth in Policy 7.1 and the related Implementation Program, project-specific environmental review conducted for specific GPU projects with potential noise issues would include detailed noise analysis to identify potential impacts related to commercial noise. Where impacts are assessed, projects would be required to demonstrate their compliance with the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards, or incorporate binding mitigation measures to reduce noise to acceptable levels.

School Noise

The GPU proposes new residential development in proximity to existing and proposed schools. School features and activities such as children playing, public address and bell systems, and sporting events, are known to generate noise that can be a nuisance to some residences. Policy 7.1 of Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) states the City's intent to apply the Noise and Land Use Compatibility Matrix and the Interior and Exterior Noise Standards when approving new projects. As shown in the land use compatibility matrix noise sensitive projects such as residential uses should not be located in areas with an Ldn exceeding 70 dBA. These types of exterior noise levels could be associated with school projects. However, placement of new uses that exceed relevant noise standards would be considered a significant impact. The GPU would entail construction of new schools that have the potential to receive noise exceeding state standards. Exceeding state standards for school noise would be considered a significant impact.

Recreational Noise

The GPU proposes new or enhanced recreational uses that may generate noise conditions received off-site, as well as new residential and commercial development in proximity to existing and proposed recreational uses, which may in turn be affected by recreational noise. Proposed and enhanced recreational uses potentially generating excessive noise include activities on Lake Elsinore, the motocross track in the southeastern portion of the City, and the baseball stadium. New development near these and other recreational uses must conform to the interior and exterior noise schedules set forth in the Zoning Code. Individual recreation-related projects implemented pursuant to the GPU would be required to demonstrate their compliance with the Zoning Code, and may require project-specific noise analysis to determine mitigation that adequately reduces noise exceeding acceptable levels.

Noise from Industrial and Mining Operations

The GPU proposes industrial and mining uses in various places throughout the City and SOI that may generate noise received off-site. Goal 7 from Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) sets forth the City's overall goal of maintaining an environment free of unhealthy, obtrusive, or otherwise excessive noise conditions. Industrial and mining uses would be required to adhere to the Zoning Code, including with respect to hours of operation and allowable noise levels. The GPU establishes Policy 7.1 from Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) requiring noise-generating uses to analyze the off-site reception of noise from their operations, and to incorporate noise-reducing mitigation measures, wherever necessary. In accordance with this policy, projects (including non-noise-generating projects placed adjacent to noise-generating uses) must demonstrate their compliance with the General Plan's Noise and Land Use Compatibility Matrix and the City's Interior and Exterior Noise Standards. Adherence to the Zoning Code, proper project-specific analysis of noise impacts, and incorporation of project-specific mitigation measures determined as a part of that analysis will ensure that future development of industrial and mining uses pursuant to the GPU would not result in significant noise impacts.

District Plan Discussion

The intent of the GPU goals and policies pertaining to noise is in part to limit the noise received by sensitive receptors to levels that are both safe and acceptable in terms of the Zoning Code. Therefore, although certain District Plans propose new noise generators in proximity to sensitive receptors (or vice versa), as discussed below, the GPU itself will not result in significant noise impacts. As planning progresses within each district plan and for each individual project undertaken within each plan, potential noise issues will be considered in light of the GPU and the Zoning Code in order to determine whether significant noise impacts may occur.

Table 3.5-7 and **Table 3.5-8**, above, list goals, policies and implementation programs identified within the GPU that address the noise issue. Some noise issues will be addressed by both GPU policies, and land use planning considerations. However, in some cases where realignments or upgrades of roadways are proposed or traffic levels will increase substantially like that

anticipated for I-15, Riverside Drive, and Grand Avenue, there may be no mitigation that would adequately reduce future traffic noise as experienced by existing land uses or future development projects within a District Plan, leading to identification of significant and unmitigated impacts at the project level.

No specific mitigation measures are required for implementation of the District Plans; however, individual projects proposed throughout the planning area may require mitigation to reduce noise impacts to less-than-significant levels, as would be determined by project-specific analysis.

3rd Street Annexation

The 3rd Street Annexation would entail individual projects that would generate construction noise. As detailed above, construction noise within City limits is regulated by the Zoning Code. Projects implemented within the 3rd Street Annexation area would be required to demonstrate their compatibility with the relevant standards. If projects are found to entail noise in excess of the standards, then the City would require the incorporation of binding mitigation into the project to reduce the received noise to acceptable levels.

The 3rd Street Annexation proposes new development adjacent to I-15 and SR-74, two busy roadways that generate high levels of traffic noise that are likely to increase as projects pursuant to the GPU are implemented (see **Figures 3.5-3 and 3.5-4**). As set forth in Policy 7.1 of Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) the City will apply the Noise and Land Use Compatibility Matrix and the Interior and Exterior Noise Standards when approving new projects. This means that new development would need to consider the noise levels generated by adjacent roadways as received by the proposed uses. Noise levels affecting development of specific projects within the 3rd Street Annexation area would be determined by project-specific noise analysis, where necessary. If traffic noise exceeds the allowable levels in the compatibility matrix or the interior/exterior standards, the City would require the incorporation of binding mitigation into the project to reduce the received noise to acceptable levels.

The 3rd Street Annexation project also proposes new commercial uses in proximity to residential development; commercial uses can generate noise that would be received by residential uses. Similar to the traffic noise issue discussed above, the Noise and Land Use Compatibility Matrix and the Interior and Exterior Noise Standards would be applied to these projects by means of project-specific noise analysis. If adjacent uses are found to entail noise levels exceeding relevant standards, the City would require the incorporation of binding mitigation into the project to reduce the received noise to acceptable levels.

Mitigation Measures

Traffic Noise

MM Noise 1: In accordance with the policies of the Lake Elsinore General Plan Update and the City's Zoning Code, the City shall require the applicant for any future development to analyze

the impacts of increased traffic volume on noise conditions along affected roadways. Where project-specific analysis concludes that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the traffic noise to acceptable levels.

For projects placing noise-sensitive land uses adjacent to or in the vicinity of a major roadway, the City shall require the project applicant to demonstrate the new use's compliance with City standards regarding traffic noise received on the site. Where project-specific analysis determines that noise standards may be exceeded, then the City shall require binding mitigation measures that will reduce the noise received to acceptable levels. However, in some cases where realignments or upgrades of roadways are proposed or traffic levels will increase substantially like that anticipated for I-15, SR-74, Riverside Drive, Grand Avenue, Lakeshore Drive, and Lake Street there may be no mitigation that would adequately reduce future traffic noise as experienced by existing land uses or future development projects, resulting in significant and unmitigated impacts at the project level.

Commercial Noise

MM Noise 2: For projects proposing new commercial uses in the vicinity of sensitive receptors, the City shall require the project applicant to demonstrate the new use's compliance with City noise standards. Where project-specific analysis determines that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

School Noise

MM Noise 3: For residential projects proposed adjacent to schools, the City shall require the project applicant to demonstrate the new use's compliance with City noise standards. Where project-specific analysis determines that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

The City shall require all school projects to conduct site-specific noise analysis in accordance with State requirements.

Recreational Noise

MM Noise 4: For projects proposing new recreational uses or increased intensity of recreational activity in proximity to sensitive receptors, the City shall require the project applicant to demonstrate the recreational use's compliance with City noise standards. Where project-specific analysis determines that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

For projects proposing new residential uses in proximity to recreational areas, the City shall require the project applicant to demonstrate the ~~recreational~~residential use's compliance with City noise standards with respect to the existing recreational areas. Where project-specific analysis determines that noise standards may be exceeded, then the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

Noise from Industrial and Mining Operations

MM Noise 5: For projects proposing new industrial/mining operations in the vicinity of sensitive receptors or projects that propose new sensitive uses in the vicinity of industrial/mining operations, the City shall require the project applicant to demonstrate the new use's compliance with City noise standards. Where project-specific analysis determines that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

3rd Street Annexation

MM Noise 6: The City shall require 3rd Street Annexation project applicants to demonstrate their compliance with City standards regarding construction noise. Where project-specific analysis determines that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the construction noise to acceptable levels.

For 3rd Street Annexation projects placing noise-sensitive land uses adjacent to or in the vicinity of I-15, SR-74, Cambern Avenue, and Camino del Norte, the City shall require the project applicant to demonstrate the new use's compliance with City standards regarding traffic noise received on the site. Where project-specific analysis determines that noise standards may be exceeded, then the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

For 3rd Street Annexation projects proposing new commercial uses in the vicinity of sensitive receptors, the City shall require the project applicant to demonstrate the new use's compliance with City noise standards. Where project-specific analysis determines that noise standards may be exceeded, then the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

Level of Significance

Traffic Noise

An increase in traffic volume throughout the local and regional circulation system as a result of GPU implementation has the potential to generate noise levels along roadway corridors that would exceed standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. The corridors of I-15, SR-74, and Railroad Canyon Road are particularly sensitive to additional traffic noise due to the substantial noise levels currently generated along these routes. At 2030 traffic levels associated with buildout of the GPU, the ADT on the freeways and roadways would increase. As shown by comparing **Figures 3.5-2 and 3.5-4**, the increase in traffic at GPU buildout would extend the 70 dBA, 65 dBA and 60dBA Ldn contours beyond existing conditions. As shown in **Table 3.5-4** and **Table 3.5-5**, residential uses are generally incompatible within the 65 Ldn contour. Considering that the 65 Ldn contour would extend beyond existing conditions, additional existing and planned residential areas in proximity to major public roadways could be subject to exterior noise levels that exceed City standards. As a result, traffic levels at buildout of the GPU could result in significant noise impacts on existing land uses.

Developments implemented in accordance with the GPU have the potential to place new receptors in areas that would receive traffic noise (both existing and future) exceeding standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. GPU policy sets forth the City's intent to enforce the Zoning Code and other noise standards and to reduce traffic-related noise. Placement of new uses in areas subject to excessive traffic noise would be considered a significant impact.

In general, the GPU addresses the potential significant noise impacts that may result from its implementation in its Land Use Plan (i.e., avoiding juxtaposition of incompatible future uses wherever possible) and by requiring consideration of the City's noise standards set forth in the General Plan and the City's Zoning Code. In accordance with the GPU, projects will be required to demonstrate their compliance with the relevant noise standards, but where projects do not comply, specific mitigation measures will be required. Due to the programmatic nature of noise analysis on this project, such impacts and mitigation measures cannot be identified at this time.

Commercial Noise

The GPU proposes commercial uses that could generate noise received by residences and other sensitive receptors in excess of relevant standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. GPU policy sets forth the City's intent to enforce the Zoning Code and other noise standards. Placement of new uses that exceed relevant noise standards would be considered a significant impact.

School Noise

The GPU proposes new residential development that could receive noise from adjacent schools in excess of relevant standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. GPU policy sets forth the City's intent to enforce the Zoning Code and other noise standards. Placement of new uses that exceed relevant noise standards would be considered a significant impact. The GPU would entail construction of new schools that have the potential to receive noise exceeding state standards. Exceeding state standards for school noise would be considered a significant impact.

Recreational Noise

The GPU proposes new or enhanced recreational uses that may generate noise conditions received off-site, as well as new residential and commercial development in proximity to existing and proposed recreational uses, which may in turn be affected by recreational noise. Such noise received from within recreational areas or generated by recreational areas has the potential to exceed relevant standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. GPU policy sets forth the City's intent to enforce the Zoning Code and other noise standards and to

minimize recreational noise. Placement of new uses or increased intensity of existing uses that exceeds relevant noise standards would be considered a significant impact.

Noise from Industrial and Mining Operations

GPU projects have the potential to place new industrial and mining operations in proximity to sensitive receptors, and vice versa, such that relevant noise standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards would be exceeded. GPU policy sets forth the City's intent to enforce the Zoning Code and other noise standards and to discourage the juxtaposition of noisy industrial/mining uses with sensitive uses. Placement of new uses that exceed relevant noise standards would be considered a significant impact.

District Plans

Noise impacts resulting from the District Plans would be considered less than significant if the policies set forth in the GPU are incorporated into future development projects within the District Plan areas. However, in some cases where realignments or upgrades of roadways are proposed or traffic levels will increase substantially, such as that anticipated for I-15, Riverside Drive, and Grand Avenue, there may be no mitigation that would adequately reduce future traffic noise as experienced by existing land uses or future development projects within a District Plan, leading to identification of significant and unmitigated impacts at the project level.

3rd Street Annexation

The 3rd Street Annexation project proposes new development that may receive traffic noise levels in excess of relevant standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. Excess of City noise standards would be considered a significant impact.

The 3rd Street Annexation project has the potential to place new commercial uses in proximity to residential development, or vice versa, which may result in the reception of commercial noise in these residential areas in excess of relevant standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. Generation of noise in excess of City noise standards would be considered a significant impact.

Threshold: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Analysis

Vibration from Construction Activities

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed, distance to the affected structures and soil type. The operation of construction equipment can cause ground vibrations that spread through the

ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations, with varying results ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels. Ground vibrations from construction activities do not often reach the levels that can damage structures, but they can achieve the audible and feelable ranges in buildings very close to the site. The construction activities that typically generate the most severe vibrations are blasting and impact pile-driving.

Ground-borne vibration related to human annoyance is generally related to velocity levels expressed in decibel notation (VdB). However, a major concern with regard to construction vibration is building damage. Consequently, construction vibration is generally assessed in terms of peak particle velocity (PPV). Various types of construction equipment have been measured under a wide variety of construction activities with an average of source levels reported in terms of velocity as shown in **Table 3.5-10, Vibration Source Levels for Construction Equipment**. Although the table gives one level for each piece of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data provide a reasonable estimate for a wide range of soil conditions.

Table 3.5-10, Vibration Source Levels for Construction Equipment

EQUIPMENT		PPV AT 25 FT (INCHES/SECOND)	VDB AT 25 FT
Pile Driver (Impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
Large bulldozer		0.089	97
Caisson Drilling		0.089	97
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, Table 12-2			

In general, groundborne vibration associated with construction activities attenuates rapidly with distance. Vibration may be noticeable for short periods during construction, but it would be temporary and periodic and would not be excessive. Additionally, construction activity would be required to comply with Lake Elsinore Municipal Code Section 17.176.080(F) which prohibits construction and demolition activities between the weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound from such activities

creates a noise disturbance across a residential or commercial real property line. Compliance with this regulatory requirement would further minimize potential impacts due to construction-related vibration.

Vibration from Industrial and Mining Operations

Additionally, the GPU proposes industrial and mining uses in various places throughout the City and SOI that may generate groundborne vibration and groundborne noise levels. Goal 7 from Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) sets forth the City's overall goal of maintaining an environment free of unhealthy, obtrusive, or otherwise excessive noise conditions. Industrial and mining uses would be required to adhere to the Zoning Code, including with respect to hours of operation and allowable noise levels. The GPU establishes an Implementation Program in Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) requiring new development proposals to analyze the off-site reception of noise from their operations, and to incorporate noise-reducing mitigation measures, wherever necessary. In accordance with GPU Policy 7.1 projects (including non-noise-generating projects placed adjacent to noise-generating uses) must demonstrate their compliance with the General Plan's Noise and Land Use Compatibility Matrix and the City's Interior and Exterior Noise Standards. Adherence to the Zoning Code, proper project-specific analysis of noise impacts, and incorporation of project-specific mitigation measures determined as a part of that analysis will ensure that future development of industrial and mining uses pursuant to the GPU would not result in significant ground-borne vibration and ground-borne noise impacts.

Mitigation Measures

Vibration from Construction Activities

MM Noise 7: For projects that have a potential to generate construction-related groundborne vibration (e.g., use of pile drivers, rock drills, and pavement breakers), the City shall require the project applicant to submit a construction-related vibration mitigation plan to the City for review and approval. The mitigation plan shall depict the location of the construction equipment and activities and how the vibration from this equipment and activity would be mitigated during construction of the project. The City shall require binding mitigation measures implementing the approved mitigation plan.

Vibration from Industrial and Mining Operations

MM Noise 8: For projects proposing new industrial/mining operations in the vicinity of sensitive receptors or projects that propose new sensitive uses in the vicinity of industrial/mining operations, the City shall require the project applicant to demonstrate the new use's compliance with City noise standards. Where project-specific analysis determines there is a potential for significant vibration-related impacts, the City shall require binding mitigation measures that will reduce the vibration received to acceptable levels.

Level of Significance

Vibration from Construction Activities

GPU projects have the potential to generate vibration during future construction and grading activities. Compliance with Lake Elsinore Municipal Code Section 17.176.080(F) and mitigation measure MM Noise 7 will minimize construction-related vibration impacts to the maximum extent feasible. With mitigation, potential construction-related vibrations impacts will be less than significant.

Vibration from Industrial and Mining Operations

GPU projects have the potential to place new industrial and mining operations in proximity to sensitive receptors, and vice versa, such that the sensitive receptors would be subject to vibration that would be annoying to people in buildings. GPU policy sets forth the City's intent to enforce the Zoning Code and other noise standards and to discourage the juxtaposition of noisy industrial/mining uses with sensitive uses. Placement of new uses that exceed relevant standards would be considered a significant impact.

Threshold: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Analysis

Construction Noise

Implementation of the GPU would result in increased noise conditions on temporary bases wherever construction is undertaken pursuant to the plan. Construction activity generates noise on individual sites during all phases, including demolition and clearing, grading, erection of structures, and paving. Materials hauling related to construction also generates noise on the selected routes traveled by contractor vehicles. Construction noise is a temporary condition that ceases upon completion of the related activities; it is also generally intermittent and fluctuating in nature, as construction on a particular site is rarely constant in intensity.

Construction activities require the use of various noise-generating equipment, such as jackhammers, pneumatic impact equipment, saws, and tractors. Typical noise levels from various construction phases are shown below in **Table 3.5-11, Typical Outdoor Construction Noise Levels**. These levels account for simultaneous operation of different types of equipment and the duration of use, as based on surveys conducted by the U.S. Environmental Protection Agency. The surveys were conducted in the early 1970s; since then, regulations have been enforced to improve noise generated by certain types of construction equipment to meet worker noise exposure standards. However, many older pieces of equipment are still in use. Thus, the construction phase noise levels indicated in the table below may be viewed as conservative. As the table shows, the highest noise levels generally occur during the grading/excavation and finishing phases of construction.

Table 3.5-11, Typical Outdoor Construction Noise Levels

	NOISE LEVEL (L_{EQ}, dBA)			
CONSTRUCTION PHASE	AT 50 FEET	AT 50 FEET WITH MUFFLERS	AT 100 FEET	AT 200 FEET
Ground Clearing	84	82	76	70
Grading/Excavation	89	86	80	74
Foundations	78	77	71	65
Structural	85	83	76	70
Finishing	89	86	80	74
Source: U.S. Environmental Protection Agency 1971				

It is inevitable that noise from GPU-related construction will be heard at various places throughout the City over the course of plan implementation. To address this, as discussed above, the City has established regulations in Chapter 17.176 (Noise Control) of its Zoning Code (Title 17 of the Lake Elsinore Municipal Code) that limit the allowable hours of operation and the duration of noise-producing construction activities. The Zoning Code also maintains schedules of allowable (where technically and economically feasible) construction noise levels received by residential and commercial land uses. All construction pursuant to the GPU would be required to demonstrate conformance to these schedules.

Incorporation of the policies set forth in the GPU and strict adherence to the Zoning Code will ensure that construction of projects pursuant to the GPU would not expose sensitive receptors to significant noise impacts. However, the potential exists for construction occurring adjacent to sensitive receptors to generate noise levels that would exceed acceptable levels on a temporary basis. Many individual projects implemented pursuant to the GPU will require project-level analysis of construction noise impacts, and any related impacts will require project-specific mitigation to assure that receptors are not exposed to construction noise exceeding allowable levels.

Mitigation Measures

MM Noise 9: The City shall require project applicants to demonstrate their compliance with City standards regarding construction noise. Where project-specific analysis determines that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the construction noise to acceptable levels.

Level of Significance

Implementation of the GPU has the potential to result in temporary construction noise received by nearby residents, schools, commercial areas, and other receptors that could exceed

acceptable levels set forth in the Zoning Code. GPU policy sets forth the City's intent to enforce the Zoning Code and other noise standards. However through implementation of the goals, policies and implementation programs of the proposed GPU and compliance with existing regulatory requirements, potential impacts will be reduced to less-than-significant levels.

Threshold: 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, would the project expose people residing or working in the project area to excessive noise levels.

Threshold: Would the project result in for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

Analysis

The GPU proposes development adjacent to Skylark Airport that would generate noise received off-site. Aircraft noise levels were analyzed over a 24-hour period in order to determine estimated noise levels. The predicted future peak hour unmitigated exterior aircraft noise level impacts were estimated to range from 51.3 dBA to 66.7 dBA Leq. The unmitigated 24-hour CNEL from the airstrip was estimated to be between 51.8 to 63.2 CNEL. Noise impacts from single-event flyovers may be a significant annoyance within the traffic pattern zone and anywhere aircraft fly below 500 feet. (Supplemental EIR for Eastlake Specific Plan, Amendment No. 8)

Policy 7.1 of Section 3.4 (Noise) of General Plan Chapter 3.0 (Public Safety and Welfare) requires that any new development comply with the Lake Elsinore Noise and Land Use Compatibility Matrix which accounts for incompatibility of some uses proposed in proximity to commercial uses. The project-specific noise study and noise mitigation for development undertaken in accordance with the GPU and the Noise and Land Use Compatibility Matrix will ensure that airport-related noise will not cause significant impacts on proposed development.

Mitigation Measures

MM Noise 10: For projects proposing sensitive uses that may receive airport noise, the City shall require the project applicant to demonstrate the new use's compliance with City noise standards. Where project-specific analysis determines that noise standards may be exceeded, the City shall require binding mitigation measures that will reduce the noise received to acceptable levels.

Level of Significance

The GPU proposes development that could receive noise from adjacent airfields however, through implementation of mitigation measure MM Noise 10, the airport-related noise will not be in excess of relevant standards set forth in the Zoning Code and the General Plan's Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards. Therefore, impacts from airport-related noise will be less than significant.

3.5.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

On a programmatic basis, all noise impacts would be less than significant if GPU policies are followed. It is the ultimate intent of the GPU policies and the mitigation measures detailed above to reduce significant noise impacts for GPU and 3rd Street Annexation projects to less-than-significant levels. However, due to the programmatic level of noise analysis for this EIR it is impossible to make a definitive statement that all noise-related impacts associated with increased traffic noise on existing land uses and future development projects would be reduced to a less-than-significant level through policies proposed in the GPU.

3.5.8 REFERENCES

In addition to other reference documents, the following references were used in the preparation of this section of the EIR:

California Department of Transportation, *Transportation – and Construction-Induced Vibration Guidance Manual*, prepared by Jones & Stokes, June 2004. (Available at http://www.dot.ca.gov/hq/env/noise/index.htm; accessed on July 5, 2011.)

California Governor's Office of Planning and Research, *General Plan Guidelines 2003*, October 2003. (Available at www.opr.ca.gov/index.php?a=planning/publications.html; accessed on July 8, 2011.)

City of Lake Elsinore, *Final Supplemental Environmental Impact Report, Eastlake Specific Plan No. 93-3, Amendment No. 8*, November 2005. (Available at the City of Lake Elsinore, Community Development Department, Planning Division, 130 S. Main Street, Lake Elsinore, CA 92530.)

City of Lake Elsinore, *General Plan Background Reports*, prepared by Mooney Jones & Stokes, January 2006. (Appendix B)

City of Lake Elsinore, *Municipal Code* (Available at www.lake-elsinore.org/index.aspx?page=346; accessed June 20, 2011.)

Riverside County Airport Land Use Commission, *Web Site*. (Available at http://www.rcaluc.org/default.asp; accessed on July 5, 2011.)

United States Department of Transportation, *Transit Noise and Vibration Impact Assessment, FTA-VA-1003-06*, May 2006. (Available at http://www.fta.dot.gov/planning/environment/planning_environment_2233.html; accessed on July 11, 2011.)