

## 5.10 Noise

### 5.10.1 Introduction

A Noise Report titled *Noise Study Report: East Lake Specific Plan Amendment No. 11 EIR* (March 15, 2017) was prepared by A/E Tech to evaluate the potential noise and vibration impacts of the proposed Project on nearby receptors, including adjacent single-family homes, and potential impacts related to future development within the Project site and Project vicinity based on the proposed land use changes. Field analysis, noise sampling and vibration testing were conducted to assess existing site conditions of the noise environment and potential noise impacts from proposed Project activities. The Noise Report is included in Appendix I; the findings and recommendations made in this section are based on the Noise Report and the analysis is summarized below.

#### 5.10.1.1 Fundamentals of Noise

A-weighting, which measures sound in decibels (dBA), is the measure of sound most commonly used for analyzing potential impacts on environmental noise, including noise generated from construction activities and traffic. The City of Lake Elsinore, like many community noise standards, utilizes A-weighting because it provides a high degree of correlation with human annoyance and health effects. Changes in A-weighted noise levels are typically perceived by the human ear as follows:

- A 3-dBA change is barely perceptible
- A 5-dBA change is readily perceptible
- A 10-dBA change is perceived as a doubling or halving of noise

For reference and comparative purposes, Table 5.10-1 shows the relative A-weighted noise levels of typical noise sources measured in the environment.

The actual impacts of noise are not a function of loudness alone. Duration of the noise is also important as noises that occur for longer periods are potentially more significant. Because noise can vary in loudness and duration depending on the noise source, the Noise Report analysis utilized the  $L_{eq}$  measurement and Community Noise Equivalent Level (CNEL)<sup>1</sup>, which accounts for loudness and duration by measuring the average of the A-weighted sound level over a one-hour period and over a 24-day, respectively.

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<sup>1</sup> CNEL is the average A-weighted noise level during a 24-hour day. The City of Lake Elsinore has adopted a land use compatibility threshold of 60 dB  $L_{dn}$  as “clearly compatible” with exterior areas of noise-sensitive land uses, including residential developments.

**Table 5.10-1. Typical Noise Sources**

| Noise Source at a Given Distance     | A-Weighted Sound Level (dBA) |
|--------------------------------------|------------------------------|
| Shotgun                              | 140                          |
| Civil defense siren (100 ft)         | 130                          |
| Jet Takeoff (200 ft)                 | 120                          |
| Loud rock music                      | 110                          |
| Pile driver (50 ft)                  | 100                          |
| Ambulance siren (100 ft)             |                              |
| Freight cars (50 ft)                 | 90                           |
| Pneumatic drill (50 ft)              | 80                           |
| Freeway (100 ft)                     |                              |
| Busy traffic; hair dryer             | 70                           |
| Normal conversation (5 ft)           | 60                           |
| Air conditioning unit (100 ft)       |                              |
| Light traffic (100 ft); rainfall     | 50                           |
| Large transformer (200 ft)           |                              |
| Bird calls (distant)                 | 40                           |
| Soft whisper (5 ft); rustling leaves | 30                           |
| -                                    | 20                           |
| Normal breathing                     | 10                           |
| -                                    | 0-1                          |

Source: A/E Tech 2014

Finally, impacts of noise on receiving sources are influenced by various conditions of the existing environment. From the source to the receiver, noise changes both in loudness and in frequency spectrum. The most obvious example is the decrease in noise that occurs as the distance from the source increases. As a general rule, the sound level decreases or drops-off at a rate of 6 dBA for each doubling of the distance between the source and receiver. The various conditions that influence a decrease in noise with distance depend on a combination of multiple factors including:

- Geometric spreading from point and line sources;
- Ground absorption potential of sound;
- Atmospheric effects and refraction;
- Shielding by natural and man-made features, noise barriers, diffraction, and reflection.

#### **5.10.1.2 Vibration**

Vibratory motion is commonly described by identifying the peak particle velocity (PPV) or peak particle acceleration (PPA). PPV is generally accepted as the most appropriate measure for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the vibration.

When the ground is subject to vibration from a vibratory source, vibration waves travel away from the vibration source. The vibration waves created are similar to those that spread in water when a stone is dropped into the water. All vibration waves encounter an increasingly large volume of material (i.e., soil, rock and moisture) as they travel outward, and the energy decreases with distance from the source. This decrease in energy is called spreading loss. The energy of vibration waves decreases in direct proportion to the distance from the source, except along the ground surface, where the decrease is in direct proportion to the square of the distance to the source.

Soil and subsurface conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience with ground-borne vibration is that vibration travel is more efficient in stiff clay soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in ground-borne vibration problems at large distances from the source. Factors such as layering of the soil and depth to water table can have significant effects on the ability of ground-borne vibration waves to travel.

When the ground surfaces of the vibratory source and the receiver are at different elevations, much of the vibration energy dissipates. This results in weaker vibratory motion at the receiver than if the receiver were at the same elevation as the source.

#### **5.10.1.3 Health Effects of Noise**

Exposure to noise is a continuing challenge to individual and community health; sources of excessive noise include vehicular traffic, aircraft, industry, and countless sources in the home and/or workplace. The potential health impacts associated with noise exposure include annoyance, sleep disturbance, interference with communication, decreased school performance, increased levels of stress, and modification of social behavior. Chronic exposure to noise could also result in increased risk of hearing impairment, hypertension, and ischemic heart disease.

#### **Noise Induced Annoyance**

Noise annoyance is a global problem. The definition of annoyance is a feeling of displeasure associated with any agent or condition, known or believed by an individual or group to adversely affect them. Apart from annoyance, people may feel a variety of negative emotions when exposed to community noise, and may report anger, disappointment, dissatisfaction, withdrawal, helplessness, depression, anxiety, distraction, agitation, or exhaustion. Thus, the term annoyance, while widely used, does not begin to cover the range of negative reactions associated with noise pollution.

#### **Effects on Sleep**

Uninterrupted sleep is known to be a prerequisite for good physiological and mental functioning of healthy persons. Whereas sleep disturbance is considered to be a major effect of environmental noise, data on the effects of environmental noise on sleep are limited. Recent research on sleep disturbance has been conducted for aircraft noise, road traffic, and railway noise. The probability of being awakened

increases with the number of noise events per night. When background noise is low, noise exceeding 45 dB should be limited. For sensitive individuals, an even lower level is preferred.

The primary sleep disturbance effects are: difficulty falling asleep, frequent awakenings, waking too early, and alterations of sleep stages and depth, especially a reduction of REM sleep. Other effects of noise during sleep include increased blood pressure, increased heart rate, increased finger pulse amplitude, vasoconstriction, changes in respiration, cardiac arrhythmias, and increased body movement. For each of these, the threshold and response relationships may be different. Studies have shown that the frequency of noise-induced awakenings decreases over eight consecutive nights; however, no such habituation has been shown for heart rate and after effects.

### **Interference with Speech Communication**

Noise may interfere with a person's ability to hear and comprehend normal speech. This may result in a number of personal disabilities, handicaps, and behavioral changes. Problems with concentration, fatigue, uncertainty, lack of self-confidence, irritation, misunderstandings, decreased working capacity, problems in interpersonal relations, and a number of stress reactions have been identified. Particularly vulnerable are the elderly, children, and those not familiar with the spoken language.

### **Noise Induced Hearing Impairment**

Hearing impairment is typically defined as an increase in the threshold of hearing. It is assessed clinically by audiometry. Depending on severity, hearing impairment can affect a person's ability to carry out the activities of daily living. Noise-induced hearing impairment is the most common, irreversible occupational hazard. In addition to occupational noise, environmental noise is an increasingly prevalent risk factor. Men and women have been shown to be at equal risk of noise-induced hearing impairment. The damage caused by both occupational and environmental noise is related to duration and intensity of exposure.

There is general agreement that exposure to sound levels less than 70 dB does not cause hearing damage. There is also general agreement that environmental noise in excess of 80 dB produces the same degree of hearing impairment as an equivalent occupational noise exposure. Hearing impairment has been shown in young adults and children following a variety of leisure time exposures. These include shooting, riding motorbikes, and listening to music in concerts and through headphones.

Given the importance of the problem, occupational noise exposure is fairly well regulated and controlled through the Occupational Safety and Health Administration (OSHA) and its affiliated State agency. Environmental noise exposure, especially that related to leisure-time activities, has not been controlled in the same way.

## **5.10.2 Environmental Setting**

The East Lake Specific Plan is generally located east of Lake Elsinore, south of Lakeshore Drive, west of Mission Trail/Corydon Road and North of Grand Avenue. The Project will consist of mixed-use

development including land uses such as existing and future residential, commercial, industrial, action sports, tourism, golf course/parks, preservation/mitigation areas, an airport and other uses.

In general terms, notable existing land uses within or adjacent to the Project include the following:

- Scattered existing single- and multi-family homes along Lakeshore Drive;
- Commercial uses in areas near the Interstate 15 (I-15) and Diamond Drive interchange;
- Commercial and office uses at the Mission Trail/Diamond Drive intersection and extending south along the Mission Trail and Diamond Drive corridors to Malaga Road;
- The Diamond Stadium located at the northwest corner of Diamond Drive and Malaga Road intersection;
- The Links at Summerly Golf Course, located west of the existing Summerly Subdivision in Lake Elsinore;
- Single-family residential, including the Summerly Subdivision, and mixed-use land uses along Mission Trail between Malaga Road and Palomar Street;
- Light industrial, commercial (including the Lake Elsinore Racing Complex and the Skylark Airport), and mixed-use areas along the west side of Corydon Road between Mission Trail and Palomar Street;
- Scattered single-family residential uses along the east side of Corydon Road between Mission Trail and Palomar Street;
- Single-family residential and a school along Palomar Street, between Mission Trail and Corydon Road;
- Single-family residential and a neighborhood park along Palomar Street, west of Corydon Road;
- Single-family homes along Corydon Road, between Palomar Street and Grand Avenue;
- Single-family residential uses and a school along Grand Avenue;
- A mobile home park located at the current north terminus of Stoneman Street, south of the Project;
- Single-family homes and a school along Bundy Canyon Road, between Mission Trail and Orange Avenue in Wildomar; and
- Single-family homes along Olive Street, Victorian Lane, and Lemon Street in Wildomar.

Beyond the developed areas, much of the land adjoining Lake Elsinore, on its east side, is currently vacant and undeveloped parcels of land are located throughout the Project site.

### **5.10.3 Existing Conditions**

#### **5.10.3.1 Existing Noise Environment**

Existing sources of background noise in the Project vicinity generally include vehicular traffic on I-15 and local roadways, daily aircraft operations at the Skylark Airport near Corydon Road and Cereal Street, distant aircraft overflights, and other neighborhood sounds such as occasional dog barks and chirping of birds. On a less regular basis, other notable sources of noise include occasional practice activities and racing events at the Lake Elsinore Motorsports Park, located west of Mission Trail and north of Cereal Street, and occasional sporting and music events at the Lake Elsinore Diamond Stadium, located adjacent to the Project site at the northwest corner of Diamond Drive and Malaga Road.

In order to characterize the existing noise environment in the Project vicinity, noise measurements throughout and adjacent to the Project site were conducted in the time period between December 2016 and early February 2017.

#### **Existing Noise Measurements**

Existing ambient noise levels in the project environs were quantified based upon long-term (24-hour) measurements at three locations and short-term (15-minute) noise level measurements at 13 other locations representative of noise-sensitive uses throughout the Project site. The long-term noise monitoring locations are designated as L1 through L3, and short-term noise monitoring locations are designated as locations S1 through S13.

Following are brief descriptions of the noise monitoring locations:

- L1: This 24-hour noise monitoring site is along the Cereal Street extension at a point near the southwest corner of the Links at Summerly Golf Course, and is located next to a City utility facility. This site was chosen due to its isolated location away from existing development but its close proximity to the Skylark Airport flight paths. Daytime noise contributors at this location include aircraft operations at the Skylark Airport and faint sounds from distant traffic and other aircraft overflights.
- L2: This 24-hour noise monitoring site is located near the property line wall of the existing homes within the Summerly subdivision and to the northwest of the Lake Elsinore Motorsports Park. The purpose of choosing this site is to capture day and night noise levels representative of noise level conditions at the existing residences along the west side of the Summerly Subdivision. Long-term monitoring at this location was chosen due to proximity of existing Summerly residences and to capture average operational noise of the Skylark Airport and Lake Elsinore Motorsports Park.
- L3: This noise monitoring location is at the south fence line of the Lake Elsinore Village senior homes, located north of Lakepoint Park. Daytime noise contributors at this location include

voices from people at the park, distant traffic on East Lakeshore Drive, and distant aircraft overflights. This site was chosen to be representative of noise-sensitive receivers northwest of the Project, including the senior homes and the Lakepoint Park.

Short-term noise monitoring was also conducted for quantifying daytime and nighttime noise levels at representative noise-sensitive locations surrounding the Project site. Descriptions of the short-term noise monitoring locations are as follows:

- S1: This short-term noise measurement location is in the driveway of the residence located at 18480 Turtle Dove Drive. It represents the closest residential areas near the southwest part of the Project site. Background noise sources affecting this site include birds, distant aircraft, distant traffic, and occasional dog barks.
- S2: This short-term monitoring location is on the residential access road north of Lakeland Village Middle School. Background noise sources include distant dog barks, distant aircraft, and occasional voices from the school.
- S3: This noise monitoring location is located at the north end of Stoneman Street, at the vacant lot near the entrance to Pepper Tree RV Park and north of the backyards of single-family homes along Oakview Way. Daytime sources of background noise include distant birds, distant aircraft flights, and dog barks. At nighttime, audible sounds were generally due to distant traffic on I-15 and frogs.
- S4: This noise measurement site is near the northwest corner of the tennis court at Serenity Park, north of Palomar Street. The measured background noise levels at this site are representative of those at the Park and single-family homes along the south side of Palomar Street. During the day, traffic on Palomar Street, distant aircraft, and children playing in the Park playground are the main sources of sounds in the area. At night, the hum of distant traffic on I-15, sparse traffic on Palomar Street, and frogs were noted as prevailing sounds in the area.
- S5: This site is in the vacant lot located in the northeast corner of Corydon Road and Bryant Street, at the approximate setback of the first row of homes south of Bryant Street. The measurement microphone was placed at a location approximately 100 feet east of the Corydon Road centerline. The dominant source of environmental noise at this location is traffic on Corydon Road.
- S6: This site is located on the north side of Cereal Street adjacent to the entrance to the Lake Elsinore Motorsports Park, and across from the runway at the Skylark Airport. During daytime, the main sources of background noise at this location are aircraft operations at the Skylark Airport and distant traffic on Corydon Road and other area roadways. At night, distant traffic on I-15, occasional traffic on Corydon Road, and dog barks contribute to the background noise environment.
- S7: This site is located at the south fence line of the home at 21210 Bundy Canyon Road in Wildomar. The dominant source of noise at this location, during both daytime and nighttime, is vehicular traffic on Bundy Canyon Road. Occasional dog barks are also heard at this location.

- S8: This short-term noise monitoring location is west of the front yard of the residence located at 32990 Crescent Avenue, north of Olive Street. Traffic on Mission Trail is the major contributor to noise levels at this location. Other sources of environmental noise include more distant traffic on area roadways, distant aircraft flight, and occasional dog barks.
- S9: This short-term noise monitoring site is located west of Mission Trail at approximately 100 feet from the roadway centerline. The purpose of choosing this site is to characterize traffic noise exposure at locations of future homes that may be developed in vacant areas along this major roadway.
- S10: This monitoring location is south of Malaga Road and north of the property line wall of the existing homes in Summerly Subdivision. Noise sources affecting background noise at this location include traffic on Malaga Road, and more distant traffic on Mission Trail, I-15, and Diamond Drive. During times when sports or entertainment events are held at the Lake Elsinore Diamond Stadium, noise from such events are clearly audible at the residential locations represented by this site.
- S11: This site represents the future homes in the most recent phase of the Summerly subdivision along the western side of the development. Current contributors to background noise at this location include distant aircraft flights and distant traffic on I-15. It is suspected that the homes in this area are also affected by noise from practice and racing activities at the Lake Elsinore Motorsports Park.
- S12: This site is located at the south end of Lake Park Apartments located at 1800 East Lakeshore Drive, near units 1402 through 1406. Sources contributing to background noise at this location include distant traffic on I-15 and Lakeshore Drive, and occasional distant aircraft flights. Events at the Lake Elsinore Diamond Stadium are also audible at this location.
- S13: This site is at a distance of approximately 75 feet south of the edge of pavement of East Lakeshore Drive in the parking lot of a commercial property located in the southeast corner of Eleanor Street and East Lakeshore Drive. This location represents the nearest existing noise-sensitive land uses along East Lakeshore Drive. Traffic is the dominant source of noise at this location.

The background noise level measurements were conducted during several time periods. The 24-hour measurements at site L1 started on December 8, 2016. At sites L2 and L3, 24-hour noise measurements were conducted between February 1 and 3, 2017. At each of the short-term monitoring locations, the measurements included one to two 15-minute continuous samples of background noise. The noise measurements at all locations included average background noise level ( $L_{eq}$ ),  $L_{min}$  (minimum sound level),  $L_{max}$  (maximum sound level),  $L_{25}$  (level exceeded 25 percent of the time),  $L_{50}$  (level exceeded 50 percent of the time), and  $L_{90}$  (level exceeded 90 percent of the time). The location of the Long term and short term monitoring locations are shown on Figure 5.10-1.

# Noise Monitoring Locations S1 through S7 East Lake Specific Plan EIR



- Short-term Noise Monitoring Location
- East Lake Specific Plan Boundary



Source: Figure 3a, Noise Study, City of Lake Elsinore ELSPA No. 11

Noise Monitoring Locations, Figure 5.10-1a

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Tables 5.10-2 through 5.10-4 summarize the measured background noise levels at the long-term (24-hour) sites L1 through L3. The 24-hour  $L_{dn}$  value at each location is also calculated and shown in each of these tables. The measured background sound levels reported in these tables may be compared to the noise level standards of the City to determine if existing noise levels exceed the City's applicable noise level criteria.

**Table 5.10-2. 24-hour Noise Monitoring Results Site L1**

| Measurement<br>Start Time | Measured Sound Levels, dBA |                  |                  |                 |                 |                 |
|---------------------------|----------------------------|------------------|------------------|-----------------|-----------------|-----------------|
|                           | L <sub>eq</sub>            | L <sub>min</sub> | L <sub>max</sub> | L <sub>25</sub> | L <sub>50</sub> | L <sub>90</sub> |
| 17:00                     | 37.6                       | 30.6             | 55.5             | 37.8            | 35.7            | 33.4            |
| 18:00                     | 46.0                       | 32.5             | 68.6             | 38.5            | 36.2            | 34.2            |
| 19:00                     | 43.4                       | 31.9             | 65.8             | 39.4            | 36.8            | 34.9            |
| 20:00                     | 38.3                       | 30.8             | 52.4             | 38.3            | 36.1            | 33.2            |
| 21:00                     | 36.4                       | 30.4             | 45.3             | 36.9            | 35.4            | 33.6            |
| 22:00                     | 34.7                       | 27.7             | 44.0             | 35.5            | 33.9            | 31.9            |
| 23:00                     | 33.3                       | 26.2             | 52.3             | 30.7            | 28.9            | 27.4            |
| 0:00                      | 36.3                       | 27.2             | 53.3             | 34.4            | 33.1            | 31.0            |
| 1:00                      | 32.7                       | 26.9             | 42.4             | 32.8            | 31.3            | 29.5            |
| 2:00                      | 33.2                       | 28.6             | 42.4             | 33.6            | 32.5            | 31.0            |
| 3:00                      | 33.9                       | 30.0             | 41.8             | 34.5            | 33.7            | 32.3            |
| 4:00                      | 39.2                       | 35.6             | 45.9             | 39.6            | 38.9            | 37.9            |
| 5:00                      | 40.1                       | 37.6             | 46.7             | 40.6            | 39.9            | 38.8            |
| 6:00                      | 42.5                       | 38.9             | 50.1             | 43.1            | 42.3            | 40.7            |
| 7:00                      | 45.3                       | 40.4             | 55.6             | 45.5            | 44.6            | 43.3            |
| 8:00                      | 52.2                       | 41.2             | 78.0             | 46.2            | 45.4            | 44.2            |
| 9:00                      | 54.3                       | 34.9             | 79.1             | 41.8            | 39.5            | 37.6            |
| 10:00                     | 53.7                       | 33.0             | 77.8             | 40.6            | 36.9            | 34.8            |
| 11:00                     | 55.9                       | 30.8             | 80.1             | 42.2            | 37.5            | 34.3            |
| 12:00                     | 55.9                       | 27.9             | 80.4             | 41.3            | 36.7            | 30.5            |
| 13:00                     | 54.1                       | 26.5             | 77.6             | 41.7            | 36.9            | 31.2            |
| 14:00                     | 53.6                       | 25.8             | 78.6             | 41.6            | 35.9            | 29.3            |
| 15:00                     | 54.0                       | 22.6             | 78.4             | 38.8            | 33.2            | 25.5            |
| 16:00                     | 53.6                       | 26.1             | 78.5             | 44.6            | 38.4            | 32.2            |
| Ldn                       | 51.0                       |                  |                  |                 |                 |                 |
| Source: A/E Tech          |                            |                  |                  |                 |                 |                 |

**Table 5.10-3. 24-hour Noise Monitoring Results Site L2**

| Measurement<br>Start Time | Measured Sound Levels, dBA |           |           |          |          |          |
|---------------------------|----------------------------|-----------|-----------|----------|----------|----------|
|                           | $L_{eq}$                   | $L_{min}$ | $L_{max}$ | $L_{25}$ | $L_{50}$ | $L_{90}$ |
| 12:00                     | 50.7                       | 44.1      | 67.2      | 50.9     | 49.3     | 47.3     |
| 13:00                     | 50.3                       | 44.7      | 63.6      | 50.6     | 49.6     | 47.9     |
| 14:00                     | 53.7                       | 47.9      | 71.4      | 53.6     | 52.4     | 50.7     |
| 15:00                     | 52.6                       | 47.6      | 66.8      | 52.8     | 51.6     | 50.1     |
| 16:00                     | 53.6                       | 47.3      | 67.9      | 53.6     | 52.1     | 50.3     |

| Measurement<br>Start Time | Measured Sound Levels, dBA |                  |                  |                 |                 |                 |
|---------------------------|----------------------------|------------------|------------------|-----------------|-----------------|-----------------|
|                           | L <sub>eq</sub>            | L <sub>min</sub> | L <sub>max</sub> | L <sub>25</sub> | L <sub>50</sub> | L <sub>90</sub> |
| 17:00                     | 51.6                       | 45.6             | 69.6             | 51.5            | 50.3            | 48.4            |
| 18:00                     | 52.9                       | 47.0             | 65.1             | 53.3            | 52.2            | 50.2            |
| 19:00                     | 53.2                       | 47.8             | 63.5             | 53.9            | 52.7            | 50.7            |
| 20:00                     | 53.0                       | 47.7             | 65.0             | 53.4            | 52.5            | 50.6            |
| 21:00                     | 52.4                       | 42.8             | 62.8             | 53.0            | 51.8            | 49.9            |
| 22:00                     | 49.0                       | 43.2             | 55.3             | 49.7            | 48.7            | 46.8            |
| 23:00                     | 48.8                       | 40.9             | 63.2             | 49.3            | 48.0            | 45.7            |
| 0:00                      | 47.9                       | 41.2             | 56.6             | 48.7            | 47.3            | 44.9            |
| 1:00                      | 48.6                       | 40.9             | 61.3             | 49.4            | 47.9            | 45.1            |
| 2:00                      | 49.9                       | 40.8             | 59.2             | 50.8            | 49.2            | 46.0            |
| 3:00                      | 52.7                       | 42.2             | 61.6             | 53.4            | 52.4            | 50.4            |
| 4:00                      | 56.5                       | 51.3             | 64.7             | 57.2            | 56.2            | 54.6            |
| 5:00                      | 58.8                       | 53.5             | 63.8             | 59.5            | 58.5            | 57.1            |
| 6:00                      | 57.5                       | 52.6             | 64.8             | 58.1            | 57.2            | 55.6            |
| 7:00                      | 58.5                       | 54.5             | 75.5             | 58.6            | 58.0            | 57.0            |
| 8:00                      | 56.0                       | 50.4             | 64.5             | 56.7            | 55.6            | 53.7            |
| 9:00                      | 51.4                       | 44.1             | 68.4             | 51.4            | 50.4            | 48.7            |
| 10:00                     | 48.9                       | 41.4             | 68.4             | 47.6            | 46.0            | 44.2            |
| 11:00                     | 51.5                       | 44.8             | 64.8             | 51.3            | 49.8            | 48.1            |
| Ldn                       | 60.5                       |                  |                  |                 |                 |                 |
| Source: A/E Tech          |                            |                  |                  |                 |                 |                 |

Table 5.10-4. 24-hour Noise Monitoring Results Site L3

| Measurement<br>Start Time | Measured Sound Levels, dBA |                  |                  |                 |                 |                 |
|---------------------------|----------------------------|------------------|------------------|-----------------|-----------------|-----------------|
|                           | L <sub>eq</sub>            | L <sub>min</sub> | L <sub>max</sub> | L <sub>25</sub> | L <sub>50</sub> | L <sub>90</sub> |
| 15:00                     | 50.6                       | 39.2             | 67.7             | 49.5            | 45.5            | 42.2            |
| 16:00                     | 51.0                       | 37.6             | 76.9             | 49.5            | 46.0            | 42.7            |
| 17:00                     | 48.0                       | 40.5             | 63.4             | 48.2            | 46.4            | 44.0            |
| 18:00                     | 54.6                       | 43.9             | 69.3             | 55.1            | 52.9            | 49.6            |
| 19:00                     | 50.6                       | 39.7             | 70.2             | 50.6            | 48.4            | 45.2            |
| 20:00                     | 44.6                       | 39               | 64.7             | 44.3            | 43.0            | 41.0            |
| 21:00                     | 42.1                       | 35.6             | 52.9             | 42.4            | 41.1            | 39.4            |
| 22:00                     | 44.6                       | 34.1             | 65               | 41.6            | 39.7            | 37.6            |
| 23:00                     | 40.8                       | 30.4             | 58.4             | 40.2            | 38.3            | 36.2            |
| 0:00                      | 38.6                       | 29               | 52.1             | 38.4            | 35.4            | 32.1            |
| 1:00                      | 36.4                       | 27.6             | 49.6             | 36.7            | 34.1            | 31.3            |
| 2:00                      | 36.2                       | 27.5             | 50.6             | 36.6            | 34.4            | 31.8            |
| 3:00                      | 44.7                       | 31.9             | 60.4             | 43.1            | 41.4            | 38.6            |
| 4:00                      | 44.7                       | 39.1             | 55.1             | 45.4            | 44.2            | 42.3            |

| Measurement<br>Start Time | Measured Sound Levels, dBA |                  |                  |                 |                 |                 |
|---------------------------|----------------------------|------------------|------------------|-----------------|-----------------|-----------------|
|                           | L <sub>eq</sub>            | L <sub>min</sub> | L <sub>max</sub> | L <sub>25</sub> | L <sub>50</sub> | L <sub>90</sub> |
| 5:00                      | 45.1                       | 37.9             | 58.3             | 45.6            | 44.3            | 42.5            |
| 6:00                      | 48.3                       | 42.9             | 60               | 48.8            | 47.7            | 46.1            |
| 7:00                      | 51.6                       | 44.4             | 68.3             | 49.7            | 48.4            | 46.8            |
| 8:00                      | 48.6                       | 43.1             | 65.6             | 48.8            | 47.9            | 46.7            |
| 9:00                      | 51.4                       | 44.1             | 71.2             | 50.8            | 49.2            | 47.4            |
| 10:00                     | 51.5                       | 39               | 74.9             | 48.3            | 46.2            | 43.5            |
| 11:00                     | 53.8                       | 37.4             | 78.8             | 49.9            | 44.7            | 41.0            |
| 12:00                     | 47.3                       | 35.8             | 66.8             | 47.0            | 43.7            | 40.6            |
| 13:00                     | 54.2                       | 36.9             | 72.9             | 51.7            | 46.3            | 41.5            |
| 14:00                     | 51.7                       | 36.6             | 71.1             | 50.0            | 45.8            | 42.0            |
| Ldn                       | 52.3                       |                  |                  |                 |                 |                 |
| Source: A/E Tech          |                            |                  |                  |                 |                 |                 |

From the measured existing background sound level data at the long-term locations, it is apparent that existing exterior L<sub>dn</sub> values at these locations are at levels that comply with the City's land use compatibility threshold of 60 dB L<sub>dn</sub> for noise-sensitive uses. At site L2, where measured background noise level is at 60.5 dB L<sub>dn</sub>, the sound level within backyards of adjoining residential uses in Summerly is below the City's land use compatibility threshold due to the shielding effect of the property line walls of these homes.

A summary of the noise levels measured during the short-term noise surveys is shown in Table 5.10-5.

**Table 5.10-5. Summary of Measured Short-Term Background Noise Levels (dB)**

| Monitoring Location | Date    | Start Time | Duration (minutes) | L <sub>eq</sub> | L <sub>min</sub> | L <sub>max</sub> | L <sub>25</sub> | L <sub>50</sub> | L <sub>90</sub> |
|---------------------|---------|------------|--------------------|-----------------|------------------|------------------|-----------------|-----------------|-----------------|
| S1                  | 12/8/16 | 1:06 p.m.  | 15                 | 38.8            | 29.0             | 53.8             | 39.1            | 36.4            | 31.0            |
|                     | 1/17/17 | 10:53 p.m. | 15                 | 40.1            | 31.8             | 49.9             | 41.2            | 38.8            | 34.6            |
| S2                  | 12/8/16 | 1:36 p.m.  | 15                 | 38.0            | 30.9             | 51.7             | 38.8            | 36.6            | 33.2            |
|                     | 1/17/17 | 10:23 p.m. | 15                 | 42.0            | 30.1             | 54.2             | 43.2            | 40.3            | 35.9            |
| S3                  | 12/8/16 | 2:10 p.m.  | 15                 | 41.1            | 28.5             | 54.7             | 37.9            | 33.4            | 29.8            |
|                     | 1/17/17 | 10:00 p.m. | 15                 | 39.8            | 32.0             | 48.3             | 40.2            | 39.5            | 37.3            |
| S4                  | 12/8/16 | 2:35 p.m.  | 15                 | 50.8            | 34.7             | 68.2             | 52.2            | 47.6            | 40.5            |
|                     | 1/17/17 | 11:15 p.m. | 15                 | 45.8            | 37.5             | 60.6             | 44.6            | 42.0            | 40.0            |
| S5                  | 12/8/16 | 3:05 p.m.  | 15                 | 62.0            | 51.1             | 69.7             | 63.3            | 61.5            | 56.5            |
|                     | 1/17/17 | 11:36 p.m. | 15                 | 56.7            | 40.6             | 70.4             | 56.3            | 51.4            | 43.6            |
| S6                  | 12/8/16 | 3:36 p.m.  | 15                 | 59.0            | 36.3             | 80.0             | 45.4            | 42.4            | 39.1            |
|                     | 1/17/17 | 11:55 p.m. | 15                 | 47.8            | 42.3             | 66.1             | 48.1            | 46.9            | 44.7            |
| S7                  | 2/3/17  | 4:12 p.m.  | 15                 | 67.4            | 50.0             | 79.3             | 68.9            | 65.2            | 54.5            |
|                     | 1/18/17 | 12:17 a.m. | 15                 | 58.9            | 44.2             | 77.8             | 52.8            | 49.7            | 46.0            |
| S8                  | 2/1/17  | 10:21 a.m. | 15                 | 65.9            | 49.0             | 75.9             | 67.4            | 63.3            | 55.7            |
|                     | 1/18/17 | 12:37 a.m. | 15                 | 59.7            | 40.5             | 73.8             | 54.2            | 50.7            | 47.4            |
| S9                  | 1/16/17 | 3:55 p.m.  | 15                 | 67.3            | 52.0             | 76.3             | 68.8            | 65.9            | 58.3            |

| Monitoring Location | Date    | Start Time | Duration (minutes) | L <sub>eq</sub> | L <sub>min</sub> | L <sub>max</sub> | L <sub>25</sub> | L <sub>50</sub> | L <sub>90</sub> |
|---------------------|---------|------------|--------------------|-----------------|------------------|------------------|-----------------|-----------------|-----------------|
|                     | 1/16/17 | 4:16 p.m.  | 15                 | 67.6            | 52.2             | 80.0             | 68.5            | 65.9            | 56.0            |
| S10                 | 2/3/17  | 3:47 p.m.  | 15                 | 58.2            | 48.4             | 74.9             | 56.3            | 52.9            | 49.7            |
|                     | 1/18/17 | 1:38 a.m.  | 15                 | 48.8            | 42.3             | 55.9             | 49.8            | 48.0            | 45.3            |
| S11                 | 1/18/17 | 1:18 a.m.  | 15                 | 37.0            | 30.2             | 44.8             | 38.3            | 35.6            | 32.6            |
| S12                 | 1/16/17 | 3:09 p.m.  | 15                 | 46.2            | 40.9             | 59.2             | 45.7            | 44.3            | 42.2            |
|                     | 1/18/17 | 1:59 a.m.  | 15                 | 44.2            | 37.5             | 51.0             | 45.3            | 43.8            | 39.8            |
| S13                 | 2/3/17  | 4:42 p.m.  | 15                 | 62.7            | 45.1             | 80.6             | 62.1            | 59.2            | 50.3            |
|                     | 2/3/17  | 4:58 p.m.  | 15                 | 60.3            | 46.9             | 72.8             | 61.3            | 59.0            | 52.3            |
| Source: A/E Tech    |         |            |                    |                 |                  |                  |                 |                 |                 |

In summary, the results of the short-term noise level measurements indicate that at community locations away from traffic noise sources, represented by S1, S2, S3, S11, and S12, daytime and nighttime average background sound levels are generally very quiet (in the 30 to 40 dB range). At locations exposed to more traffic noise but not directly along major roads, such as S4, S6, and S10, average background noise levels exceed 50 dB but typically are below 60 dB. At locations along major roads in the Project vicinity, such as S5, S7, S8, S9, and S13, background average noise levels tend to exceed 60 dB, into the high 60s. Therefore, it can be concluded that vehicular traffic noise generally dictates background noise levels at various community locations throughout the Project site and its vicinity.

### Traffic Noise Measurements

Noise levels at specific locations among the short-term noise monitoring locations in the Project vicinity are dominated by traffic noise. At such locations, vehicular traffic essentially dictates the measured noise level. In addition to documenting existing noise levels, another use of the traffic noise level measurements at these locations is to validate the use of Traffic Noise Model (TNM) in accurately predicting traffic noise exposure nearby subject roadways. Noise measurements at sites S5, S7, S9, S10, and S13 were taken along Corydon Road, Bundy Canyon Road, Mission Trail, Malaga Road, and East Lakeshore Drive, respectively. These roadways were chosen because they are the roadways carrying most of the traffic throughout the Project vicinity and also because of their proximity to existing and potential future noise-sensitive uses in the Project site.

During noise measurements at each location, concurrent traffic counts on each respective roadway were also conducted. The results of the traffic noise level measurements and concurrent traffic counts are summarized in Table 5.10-6.

Existing roadway geometry and number of vehicles counted during the noise measurement periods were entered into the noise model for each location. Table 5.10-7 is a summary of noise levels obtained during the traffic noise measurements and their comparison to levels predicted by the TNM.

The last column of Table 5.10-7 depicts the differences between the measured and modeled noise levels. At both noise measurement locations, the difference between measured and modeled noise

levels are mostly within +/- 1 dB, which indicates close agreement between the two levels. This close agreement verifies the accuracy of the TNM in predicting traffic noise levels in areas near the roadway.

**Table 5.10-6. Measured Traffic Noise Levels and Concurrent Traffic Counts**

| Monitor Location - Date                                                                                | Start Time | Measured Sound Level (dB) |                  |                  | Traffic Counts (15 minutes) |    |    |    |                      |    |    |    |
|--------------------------------------------------------------------------------------------------------|------------|---------------------------|------------------|------------------|-----------------------------|----|----|----|----------------------|----|----|----|
|                                                                                                        |            |                           |                  |                  | Southbound/Westbound        |    |    |    | Northbound/Eastbound |    |    |    |
|                                                                                                        |            | L <sub>eq</sub>           | L <sub>min</sub> | L <sub>max</sub> | A                           | MT | HT | MC | A                    | MT | HT | MC |
| S5 – 12/8/16                                                                                           | 3:05 p.m.  | 62.0                      | 51.1             | 69.7             | 161                         | 6  | 0  | 1  | 147                  | 2  | 0  | 0  |
| S7 – 12/8/16                                                                                           | 4:12 p.m.  | 67.4                      | 50.0             | 79.3             | 108                         | 3  | 0  | 0  | 83                   | 1  | 0  | 0  |
| S9 – 1/16/17                                                                                           | 3:55 p.m.  | 67.3                      | 52.0             | 76.3             | 191                         | 1  | 1  | 0  | 160                  | 2  | 0  | 1  |
|                                                                                                        | 4:16 p.m.  | 67.6                      | 52.2             | 80.0             | 171                         | 3  | 1  | 1  | 145                  | 1  | 0  | 6  |
| S10 – 2/3/17                                                                                           | 3:47 p.m.  | 58.2                      | 48.4             | 74.9             | 16                          | 0  | 0  | 0  | 14                   | 1  | 0  | 0  |
| S13 – 2/3/17                                                                                           | 4:42 p.m.  | 62.7                      | 45.1             | 80.6             | 120                         | 0  | 0  | 3  | 125                  | 1  | 0  | 0  |
|                                                                                                        | 4:58 p.m.  | 60.3                      | 46.9             | 72.8             | 133                         | 0  | 0  | 2  | 116                  | 2  | 0  | 0  |
| A = Automobiles<br>MT = Medium Trucks<br>HT = Heavy Trucks<br>MC = Motorcycles<br><br>Source: A/E Tech |            |                           |                  |                  |                             |    |    |    |                      |    |    |    |

**Table 5.10-7. Comparison of Measured and Modeled Traffic Noise Levels (dB)**

| Measurement Location | Measured L <sub>eq</sub> | Modeled L <sub>eq</sub> | Modeled minus Measured L <sub>eq</sub> |
|----------------------|--------------------------|-------------------------|----------------------------------------|
| S5                   | 62.0                     | 62.9                    | +0.9                                   |
| S7                   | 67.4                     | 67.7                    | +0.3                                   |
| S9                   | 67.3                     | 67.7                    | +0.4                                   |
|                      | 67.6                     | 67.8                    | +0.2                                   |
| S10                  | 58.2                     | 57.3                    | -0.9                                   |
| S13                  | 62.7                     | 62.6                    | -0.1                                   |
|                      | 60.3                     | 61.8                    | +1.5                                   |
| Source: A/E Tech     |                          |                         |                                        |

### 5.10.3.2 Lake Elsinore Diamond Stadium Noise

In the early evening hours of December 9, 2016, a “Hip Hop” music concert took place at the Lake Elsinore Diamond Stadium. During this event, a series of noise measurements were conducted at the nearest residential locations in the Summerly subdivision and at the south end of River’s Edge Apartments, located to the northwest side of the Stadium. Figure 5.10-2 shows the noise monitoring locations during the concert.

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**Noise Monitoring Locations  
Lake Elsinore Diamond Stadium  
East Lake Specific Plan EIR**



# Noise Monitoring Location



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At site 10-1, the measurements were started at the beginning of the concert and were continued for a full one-hour period, between 5 p.m. and 6 p.m. The dominant source of overall noise at this location was traffic on Malaga Road; however, highest sounds from the music event were clearly audible and ranged between 55 to 60 dB. Measured noise levels from the concert outside of homes located in the Summerly subdivision along Major League (sites 10-2 and 10-3) were lower than those obtained at location 10-1. Concert noise levels at these locations ranged between 45 to 58 dB.

At the south end of the River's Edge Apartments nearest to the Stadium, measured sound levels from the concert event generally ranged between 51 to 57 dB. When compared with typical afternoon background noise levels in this area (based on measurements at site S12), noise from the concert event caused increases in average noise levels in the range of 5 to 10 dB. However, sound levels from the concert were not of magnitudes to subjectively cause annoyance or undue disturbance during evening pre-sleeping times.

Table 5.10-8 summarizes the overall noise level measurement results obtained at the nearest residential neighborhoods during the concert event at Diamond Stadium.

**Table 5.10-8. Summary of Measured Short-Term Noise Levels (dB)  
Music Concert at the Lake Elsinore Diamond Stadium**

| Monitoring Location | Date    | Start Time | Duration (minutes) | L <sub>eq</sub> | L <sub>min</sub> | L <sub>max</sub> | L <sub>25</sub> | L <sub>50</sub> | L <sub>90</sub> |
|---------------------|---------|------------|--------------------|-----------------|------------------|------------------|-----------------|-----------------|-----------------|
| 10-1                | 12/9/16 | 5:00 p.m.  | 60                 | 59.9            | 50.4             | 70.7             | 60.4            | 57.8            | 54.9            |
| 10-2                | 12/9/16 | 6:10 p.m.  | 40                 | 48.8            | 41.6             | 67.7             | 47.6            | 45.8            | 43.8            |
|                     | 12/9/16 | 8:24 p.m.  | 20                 | 52.8            | 47.3             | 65.4             | 53.7            | 51.7            | 48.4            |
| 10-3                | 12/9/16 | 7:58 p.m.  | 20                 | 57.5            | 50.3             | 74.2             | 56.8            | 55.2            | 53.2            |
| 12-1                | 12/9/16 | 7:06 p.m.  | 15                 | 55.1            | 48.3             | 71.6             | 53.0            | 52.0            | 49.7            |
| Source: A/E Tech    |         |            |                    |                 |                  |                  |                 |                 |                 |

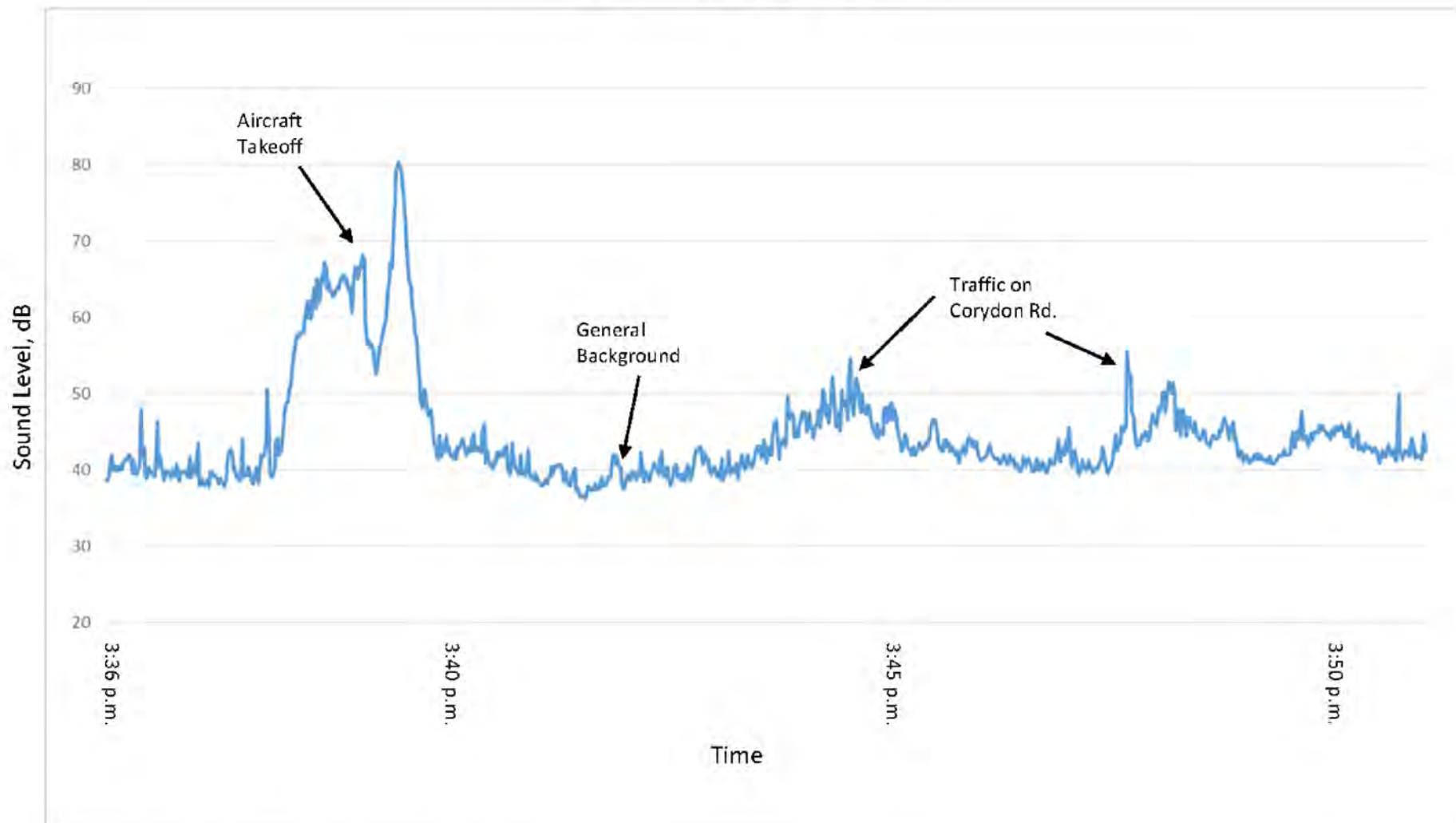
### 5.10.3.3 Skylark Airport Noise

Skylark Airport is a skydiving operation located on Cereal Street just west of Corydon Road. Equipment operating at the facility includes single-engine propeller aircraft that use a single dirt runway with an east-west layout. During the background noise measurement survey, noise levels from aircraft takeoffs and landings related to the Skylark Airport operations were captured at sites L1, L2, and S6 (see Table 5.10-4 and Table 5.10-5).

Site S6 is located across Cereal Street from the Skylark Airport runway. During short-term measurement at this location, one aircraft takeoff was captured. The sideline noise from this aircraft event, as well as other noise levels during the measurement period, is shown in Figure 5.10-3. Site L1 is directly under the aircraft departure and landing paths and located at a distance of approximately 8,500 feet west of the start of takeoff roll. Because of its isolated location, the measured noise level at site L1 is almost entirely due to aircraft operations at Skylark Airport.

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### Noise Measurement Time History @ Site S6 – 12/8/2016



Aircraft Single-event Noise Levels:

Leq = 68.4 dB

Lmax = 80.2 dB

SEL = 88.5 dB



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The measured  $L_{dn}$  at this location for a 24-hour period between December 8 and 9, 2016 was 51 dB. It is assumed that skydiving operations during this time period represent normal daily operations at the facility. Figure 5.10-4 shows the estimated 60 dB  $L_{dn}$  noise contour from aircraft operations at the Skylark Airport, projected from measurements at L1. Figure 5.10-4 shows that the largest lateral distance from the runway centerline to the 60 dB  $L_{dn}$  contour is approximately 500 feet.

## 5.10.4 Regulatory Setting

### 5.10.4.1 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  $L_{dn}$  limits of 55 dB and indoor  $L_{dn}$  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  $L_{eq}$  values of 70 dB (both outdoors and indoors).

### 5.10.4.2 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  $L_{dn}$  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  $L_{dn}$  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  $L_{dn}$  in any habitable room. Where such residences are located in an environment where exterior noise is 60  $L_{dn}$  or greater, an acoustical analysis is required to ensure that interior levels do not exceed the 45  $L_{dn}$  interior standard.

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### Elsinore Skydive Estimated 60 dB Ldn Contour East Lake Specific Plan EIR



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### 5.10.4.3 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.

### 5.10.4.4 City of Lake Elsinore

#### Lake Elsinore General Plan

The City's General Plan (City of Lake Elsinore, 2011) in its Chapter 3.7, Noise, establishes land use compatibility criteria in terms of the Day-Night Noise Level ( $L_{dn}$ ) for various developments, including residential uses. The City has adopted a land use compatibility threshold of 60 dB  $L_{dn}$  as "clearly compatible" with exterior areas of noise-sensitive land uses, including residential developments (see Tables 5.10-9 and 5.10-10 below).

**Table 5.10-9. City of Lake Elsinore Noise and Land Use Compatibility Matrix**

| Land Use Categories                                   |                                                                                                  | Day-Night Noise Level ( $L_{dn}$ ) |       |       |       |       |       |     |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------|-------|-------|-------|-------|-------|-----|
| Categories                                            | Uses                                                                                             | <55                                | 55-60 | 60-65 | 65-70 | 70-75 | 75-80 | >80 |
| Residential                                           | Single Family, Duplex, Multiple Family                                                           | A                                  | A     | B     | B     | C     | D     | D   |
|                                                       | Mobile Home                                                                                      | 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 Theater                                               | 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<br>Institutional Civic Center   | Amphitheater, Concert Hall, Auditorium, Meeting Hall                                             | B                                  | B     | C     | C     | D     | D     | D   |
| Commercial Recreation                                 | Children's Amusement Park, Miniature Golf, Course, Go-cart Track, Equestrian Center, Sports Club | A                                  | A     | A     | B     | B     | D     | D   |
| Commercial General, Special Industrial, Institutional | Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities    | A                                  | A     | A     | A     | B     | B     | B   |
| Institutional                                         | Hospital, Church, Library,                                                                       | A                                  | A     | B     | C     | C     | D     | D   |

| Land Use Categories |                                                                              | Day-Night Noise Level (L <sub>dn</sub> ) |       |       |       |       |       |     |
|---------------------|------------------------------------------------------------------------------|------------------------------------------|-------|-------|-------|-------|-------|-----|
| Categories          | Uses                                                                         | <55                                      | 55-60 | 60-65 | 65-70 | 70-75 | 75-80 | >80 |
| General             | Schools' Classroom, Day Care                                                 |                                          |       |       |       |       |       |     |
| Open Space          | Parks                                                                        | A                                        | A     | A     | B     | C     | D     | D   |
|                     | Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat | A                                        | A     | A     | A     | B     | C     | C   |
| Agriculture         | Agriculture                                                                  | A                                        | A     | A     | A     | A     | A     | A   |

Source: City of Lake Elsinore General Plan, Table 3-1

**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 noise insulation requirements.

*Zone B Normally Compatible:* New construction or development should be undertaken only after detailed noise analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and 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.

**Table 5.10-10. City of Lake Elsinore Interior and Exterior Noise Standards**

| Land Use Categories       |                                        | Energy Average L <sub>dn</sub> (dB) |                 |
|---------------------------|----------------------------------------|-------------------------------------|-----------------|
| Categories                | Uses                                   | Interior                            | Exterior        |
| Residential               | Single Family, Duplex, Multiple Family | 45 <sup>3,5</sup>                   | 60              |
|                           | Mobile Homes                           | -                                   | 60 <sup>4</sup> |
| Commercial, Institutional | Hotel, Motel, Transient Lodging        | 45 <sup>5</sup>                     | -               |
|                           | Hospital, School's Classroom           | 45                                  | -               |
|                           | Church, Library                        | 45                                  | -               |

Source: City of Lake Elsinore General Plan, Table 3-2

**Interpretation**

- Indoor environment excluding: Bathrooms, toilets, closets, corridors.
- 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.
- 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.
- Exterior noise level should be such that interior noise level will not exceed 45 CNEL.
- As per California Administrative Code, Title 24, Part 6, Division T25, Chapter 1, Subchapter 1, Article 4, Section T25-28.

### Lake Elsinore Municipal Code

The City of Lake Elsinore General Plan noise standards focus on defining appropriate locations for various land uses (residential in this case), while the noise standards in the Municipal Code focus on control of noise generators. Chapter 17.176 of the City of Lake Elsinore Municipal Code pertains to noise control within the City’s boundaries. The purpose of this chapter of the Municipal Code is that “in order to control unnecessary, excessive and annoying noise and vibration in the City, it is hereby declared to be the policy of the City to prohibit such noise and vibration generated from or by all sources as specified in this chapter. It shall be the policy of the City to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the City where noise levels are above acceptable values.” The City’s Municipal Code establishes exterior and interior noise limits for non-transportation noise sources by receiving land use. Table 5.10-11 outlines the City’s exterior noise level standards. No person is allowed to operate, or cause to be operated, any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated, to exceed:

- a. The noise standard for that land use as specified in Table 5.10-11 for a cumulative period of more than 30 minutes in any hour; or
- b. The noise standard plus five dB for a cumulative period of more than 15 minutes in any hour; or
- c. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour; or
- d. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or
- e. The noise standard plus 20 dB or the maximum measured ambient level, for any period of time.

**Table 5.10-11. City of Lake Elsinore Municipal Code Exterior Noise Limits**

| Receiving Land Use Category                  | Time Period            | Noise Level (dBA) |
|----------------------------------------------|------------------------|-------------------|
| Single-Family Residential                    | 10:00 p.m. – 7:00 a.m. | 40                |
|                                              | 7:00 a.m. – 10:00 p.m. | 50                |
| Multiple Dwelling Residential                | 10:00 p.m. – 7:00 a.m. | 45                |
|                                              | 7:00 a.m. – 10:00 p.m. | 50                |
| Limited Commercial and Office                | 10:00 p.m. – 7:00 a.m. | 55                |
|                                              | 7:00 a.m. – 10:00 p.m. | 60                |
| General Commercial                           | 10:00 p.m. – 7:00 a.m. | 60                |
|                                              | 7:00 a.m. – 10:00 p.m. | 65                |
| Light Industrial                             | Anytime                | 70                |
| Heavy Industrial                             | Anytime                | 75                |
| Source: City of Lake Elsinore Municipal Code |                        |                   |

### Construction/Demolition Noise Limits

The City’s Municipal Code Section 17.176.080 pertains specifically to prohibited acts that would be contrary to the City policy. Subsection 17.176.080.F relates to construction/demolition activities. This provision of the City’s Municipal Code states that:

1. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom 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.
2. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected residential properties will not exceed those listed in the following schedule:

#### At Residential Properties:

##### Mobile Equipment

Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

|                                                                     | Type I Areas Single-Family Residential | Type II Areas Multifamily Residential | Type III Areas Semi-Residential/Commercial |
|---------------------------------------------------------------------|----------------------------------------|---------------------------------------|--------------------------------------------|
| Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.     | 75 dBA                                 | 80 dBA                                | 85 dBA                                     |
| Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays | 60 dBA                                 | 65 dBA                                | 70 dBA                                     |

##### Stationary Equipment

Maximum noise levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment:

|                                                                     | Type I Areas Single-Family Residential | Type II Areas Multifamily Residential | Type III Areas Semi-Residential/Commercial |
|---------------------------------------------------------------------|----------------------------------------|---------------------------------------|--------------------------------------------|
| Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.     | 60 dBA                                 | 65 dBA                                | 70 dBA                                     |
| Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays | 50 dBA                                 | 55 dBA                                | 60 dBA                                     |

In summary, for residential properties, the City of Lake Elsinore applies an exterior noise level limit of 75 dB to mobile construction equipment operating for durations of 10 days or more.

#### At Commercial Properties:

##### Mobile Equipment

Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

Daily, including Sundays and Legal Holidays, all hours: maximum of 85 dBA.

##### Stationary Equipment

Maximum noise levels for repetitively scheduled and relatively long-term operation of stationary equipment:

Daily, including Sundays and Legal Holidays, all hours: maximum of 75 dBA.

3. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order.

#### **5.10.4.5 City of Wildomar**

Chapter 9 of the City of Wildomar General Plan, Noise Element, establishes a land use compatibility criterion of 65 dB CNEL for exterior activity areas of residential land uses.

Chapter 9.48, Noise Regulation, of the City of Wildomar Municipal Code establishes a daytime (7 a.m. to 10 p.m.) noise level standard of 55 dB for exterior areas of residential uses. However, Provision I of Section 9.48.020, Exemptions, of the Municipal Code exempts private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that:

1. Construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September; and
2. Construction does not occur between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May.

This EIR employs the City of Lake Elsinore noise standards as the local criteria applicable to the Project because they are more stringent than the City of Wildomar noise standards.

#### **5.10.5 Thresholds of Significance**

As previously stated, changes in noise levels are typically perceived by the human ear as follows:

- A 3-dBA change is barely perceptible;
- A 5-dBA change is readily perceptible;
- A 10-dBA change is perceived as a doubling or halving of noise.

For determination of significance of noise impacts in a given environment, noise level changes brought about by a specific project (or set of projects) are often evaluated in the context of preexisting noise conditions in that environment and the type of land use affected. For quieter existing noise environments, as opposed to already noisy environments, long-term project-induced noise level changes are allowed to be higher before the project causes a significant impact. Noise level changes most frequently utilized for determination of significance of long-term impacts at noise-sensitive locations range from 10 dB for quiet rural areas, to 3 dB to 5 dB for urban areas with noisier settings, to even 1.5 dB for locations exposed to higher noise levels, such as homes within the 65 dB  $L_{dn}$  contour of an airport. For residential land uses, changes in noise levels are often evaluated in terms of 24-hour average noise metrics (i.e., CNEL or  $L_{dn}$ ). Thresholds similar to these are already adopted by federal agencies (such as Federal Transit Administration and Federal Aviation Administration), and state and local jurisdictions. Although the City of Lake Elsinore has not specifically adopted such thresholds, CEQA requires that a noise study adequately assess noise level increases caused by a project for determination of its impacts on the environment.

Although the term “substantial increase” is not explicitly defined, a reasonable threshold can be formulated based on an increase required to be audible by most individuals. The human ear can detect changes in sound levels of approximately 3 dB under normal, controlled conditions. A change of 5 dB is noticeable to most people in an exterior environment. Changes of between 1 to 3 dB may be noticeable under quiet background conditions. Based on that level of audibility, an increase of 3 dB in  $L_{dn}$  or more could be deemed to constitute a “substantial increase” if resultant noise level exceeds the goal of the General Plan for the land use (i.e., 60 dB  $L_{dn}$  for residential land uses or 60 to 65 dB  $L_{dn}$  for new residential development where project-specific noise analysis demonstrates compliance with noise standards). In addition, a change of 5 dB would be considered as significant even if the resultant noise levels remain under the General Plan noise standard. The thresholds of significance outlined in this section would apply to frequently used exterior areas of noise-sensitive land uses where increases in noise would directly affect people.

The following indicate that the Project may be deemed to have a significant effect on the environment if the Project is likely to cause:

- Threshold NOI-A** *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 NOI-B** *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.*
- Threshold NOI-C** *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*
- Threshold NOI-D** *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*

**Threshold NOI-E** *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 NOI-F** *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?*

### 5.10.6 Evaluation of Potential Impacts

**Threshold NOI-A** *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 NOI-C** *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*

**Threshold NOI-D** *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*

#### 5.10.6.1 Construction Impacts

##### Construction Noise

##### Action Sports, Tourism, Commercial and Recreation Projects

Construction of future development projects within the Project site would result in generation of noise due to use of heavy machinery and potential increases in traffic from construction trucks and employee vehicles. The potential for construction noise impact varies by location and land use. Commercial and industrial land uses should generally not be impacted by construction noise. At residential land use, the potential for temporary noise impact from daytime construction would be limited to locations directly adjacent to future development projects. However, if nighttime construction occurs, noise impacts could be much more extensive, which emphasizes the importance of avoiding nighttime construction near residential areas.

Table 5.10-12 is a listing of typical noise levels from commonly used construction equipment at a reference distance of 50 feet from the equipment. The noise levels in Table 5.10-12 may be used in conjunction with the City's construction noise limits for residential and commercial properties (see Table 5.10-11) to estimate the potential for future construction noise impacts.

**Table 5.10-12. Typical Construction Equipment Noise Levels**

| Equipment Type | Typical Sound Level at 50 Feet (dBA) |
|----------------|--------------------------------------|
| Backhoe        | 80                                   |
| Bulldozer      | 85                                   |

| Equipment Type                                                                             | Typical Sound Level at 50 Feet (dBA) |
|--------------------------------------------------------------------------------------------|--------------------------------------|
| Compactor                                                                                  | 82                                   |
| Compressor                                                                                 | 81                                   |
| Concrete Mixer                                                                             | 85                                   |
| Concrete Pump                                                                              | 82                                   |
| Crane, Derrick                                                                             | 88                                   |
| Crane, Mobile                                                                              | 83                                   |
| Loader                                                                                     | 85                                   |
| Pavement Breaker                                                                           | 88                                   |
| Paver                                                                                      | 89                                   |
| Pile Driver, Impact                                                                        | 101                                  |
| Pump                                                                                       | 76                                   |
| Roller                                                                                     | 74                                   |
| Truck                                                                                      | 88                                   |
| Source: Federal Transit Administration found in <i>Noise Study Report (A/E Tech, 2017)</i> |                                      |

Mitigation measure **MM NOI-1** would require each future implementing development project to reduce and/or minimize such temporary construction noise impacts through implementation of noise reduction measures; however, ***it cannot be guaranteed at this time that such measures would reduce impacts to less than significant levels. Therefore, impacts would be potentially significant and unavoidable.***

#### Roadway Improvements

Roadway improvements that will be associated with the Project include extension and paving of several roads within the Project site. These roadway improvements will include the extension of Malaga Road/Sylvester Street west to Lucerne Street; construction of Lucerne Street along the west side of the Links at Summerly, between Malaga Road and Cereal Street; and extension of Cereal Street westward to Lucerne Street.

Each of these roadway improvement elements are located at locations that are sufficiently distant from existing noise-sensitive land uses (i.e., between one-third to half a mile) so that significant temporary noise impacts would not likely occur at any of the noise-sensitive areas nearest to these improvements, particularly since construction activities would be confined to daytime hours. The possible exception to this may be the homes near the northwest corner of the Summerly Subdivision, which are located approximately 500 feet south of Malaga Road. Construction activities associated with extension of Malaga Road would potentially generate noise levels that may require mitigation in the form of a noise control plan to ensure that the noise-sensitive land uses are minimally affected. Furthermore, if Lucerne Street is extended south from its current terminus south of East Lakeshore Drive, which would necessitate construction of a bridge over the water channel, it would result in significant noise impacts to existing homes along the roadway. If bridge construction involves pile driving, it would generate noise levels that would typically require noise mitigation for areas in the vicinity of such improvements. Mitigation measure **MM NOI-1** would require each future implementing development project to reduce and/or minimize such temporary noise impacts; however, ***it cannot be guaranteed at this time that***

***such measures would reduce impacts to less than significant levels. Therefore, impacts would be potentially significant and unavoidable.***

#### Berm Improvements

Improvements to an existing earthen berm in the southwest part of the Project site would employ the use of earth moving equipment. The nearest existing noise-sensitive land uses to the berm construction area are residential land uses to the south. These land uses are generally located at distances between one-third to a half a mile from the construction locations. At such distances, the chances of substantial noise impacts on these residential uses would be negligible if construction is limited to daytime hours. Variables such as the number and types of equipment, locations of equipment staging areas, and site-specific topography would have direct bearing on the levels of noise that would be experienced at the noise-sensitive areas. Based on distance between berm improvement construction activities and sensitive receptors, and because construction would be done during daytime hours, ***potential impacts would be less than significant.***

***Impact NOI-1*** *Temporary exposure of persons to noise levels in excess of City standards and/or a potential substantial temporary increase in ambient noise levels may occur during future project construction activities within the East Lake Specific Plan, resulting in a temporary significant noise impact.*

#### **Construction Traffic Noise**

One contributing factor to noise level changes during future construction activities within the Project site would be the temporary use of area roadways by construction truck traffic utilized for hauling materials to and away from each construction site. In addition, construction employee vehicles would temporarily increase traffic on local area roadways during certain hours on construction workdays. To quantify such traffic noise effects, exact volumes of trucks and employee vehicles would be needed; however, construction traffic typically does not result in the levels of traffic change that would result in impacts on existing uses if trucks utilize routes that avoid residential areas. Nonetheless, mitigation measure **MM NOI-1** would require each future implementing development project to reduce and/or minimize such temporary noise impacts through the creation and implementation of a Construction Management Plan; however, ***it cannot be guaranteed at this time that such measures would reduce impacts to less than significant levels. Therefore, impacts would be potentially significant and unavoidable.***

***Impact NOI-2*** *Temporary exposure of persons to noise levels in excess of City standards and/or a potential substantial temporary increase in ambient noise levels may occur during future project construction hauling and material delivery activities within the East Lake Specific Plan, potentially resulting in a temporary significant noise impact.*

#### **5.10.6.2 Operational Noise**

Potential long-term noise effects of the Project on noise-sensitive uses in the Project site and Project vicinity would be due to changes in vehicular traffic volumes on the local roadways. This analysis

quantifies noise effects of traffic on local roadways due to the Project by comparing the forecast future traffic noise levels along area roadways without the project to those with the Project.

Another potential long-term effect of the Project involves changes to noise-intensive uses that may place such uses in close proximity to existing noise-sensitive land uses. Specifically, concentrating noise-intensive land uses, such as race tracks, in PA-6 is evaluated in this section for Project planning purposes and avoidance of significant noise impacts from these noise sources.

### Operational Traffic Noise

The Project will incrementally change traffic volumes on the local roadway system during both peak traffic hours and on a daily basis. Future changes in traffic noise exposure due to changes in vehicle trips due to the Project were evaluated using forecast peak-hour and ADT volumes on local roadways at Phase I completion (Year 2022) compared with the 2022 Baseline, and at Project buildout completion (Year 2040) compared with the 2040 Baseline. Future traffic noise levels were not compared with existing baseline conditions because such comparisons would inherently account for non-project noise increases associated with ambient growth that may unduly inflate the impact analysis levels.

#### Peak-Hour Traffic Noise

AM and PM peak-hour traffic volumes for Year 2022 without the Project and for Phase I completion were obtained from the Traffic Impact Analysis prepared for the project (LLG, 2017). Vehicle composition data, including breakdown of automobiles, medium trucks (2-axle), and heavy trucks (3 or more axles) for peak-hour traffic conditions and for 24-hour periods were derived from the percentages used in the County of Riverside Noise Element of the General Plan (County of Riverside, 2015). These vehicle percentages were applied because they are more conservative than the truck percentages observed through the actual onsite traffic counts conducted during the noise measurements.

Tables 5.10-13 through 5.10-15 summarize comparisons of calculated 2022 peak-hour  $L_{eq}$  values between the without-Project (2022 Baseline) and Phase I scenarios at a set distance of 100 feet from the centerline of roadways in the Project vicinity during AM and PM peak traffic hours on weekdays and midday peak traffic hour on Saturdays.

**Table 5.10-13. Comparison of Forecast Year 2022 Traffic Noise Levels  
Weekday AM Peak Hour**

| Roadway Segment           | AM Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|---------------------------|----------------------------|-------|--------------|-------|------------|-------|
|                           | 2022 Baseline              |       | 2022 Phase I |       | Difference |       |
|                           | SB/EB                      | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| <b>East Lakeshore Dr.</b> |                            |       |              |       |            |       |
| West of Lucerne St.       | 57.7                       | 57.8  | 59.3         | 59.4  | 1.6        | 1.6   |
| East of Lucerne St.       | 61.9                       | 62.2  | 63.2         | 63.4  | 1.3        | 1.2   |
| <b>Lucerne St.</b>        |                            |       |              |       |            |       |

| Roadway Segment                                                                                                     | AM Peak Hour Leq, dB |       |              |       |            |       |
|---------------------------------------------------------------------------------------------------------------------|----------------------|-------|--------------|-------|------------|-------|
|                                                                                                                     | 2022 Baseline        |       | 2022 Phase I |       | Difference |       |
|                                                                                                                     | SB/EB                | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| South of Lakeshore Dr.                                                                                              | 49.0                 | 48.5  | 50.7         | 50.2  | 1.7        | 1.7   |
| <b><u>Diamond Dr.</u></b>                                                                                           |                      |       |              |       |            |       |
| Mission Trail to Campbell St.                                                                                       | 56.9                 | 57.4  | 60.3         | 61.3  | 3.4        | 3.9   |
| Campbell St. to Malaga Dr.                                                                                          | 55.2                 | 55.4  | 59.6         | 60.7  | 4.4        | 5.3   |
| South of Malaga Dr.                                                                                                 | 54.1                 | 54.3  | 55.4         | 55.4  | 1.3        | 1.1   |
| <b><u>Malaga Rd.</u></b>                                                                                            |                      |       |              |       |            |       |
| Mission Trail to Diamond Dr.                                                                                        | 49.6                 | 51.1  | 51.5         | 52.3  | 1.9        | 1.2   |
| West of Diamond Dr.                                                                                                 | 45.5                 | 47.0  | 56.7         | 56.0  | 11.2       | 9.0   |
| <b><u>Mission Trail</u></b>                                                                                         |                      |       |              |       |            |       |
| Diamond Dr. to Campbell St.                                                                                         | 63.7                 | 63.9  | 64.4         | 64.6  | 0.7        | 0.7   |
| Campbell St. to Malaga Rd.                                                                                          | 63.4                 | 63.8  | 64.1         | 64.5  | 0.7        | 0.7   |
| Malaga Rd. to Olive St.                                                                                             | 65.2                 | 65.7  | 65.8         | 66.4  | 0.6        | 0.7   |
| Olive St. to Victorian Way                                                                                          | 66.4                 | 66.6  | 66.8         | 67.0  | 0.4        | 0.4   |
| Victorian Way to Lemon St.                                                                                          | 66.5                 | 66.6  | 66.9         | 67.0  | 0.4        | 0.4   |
| Lemon St. to Corydon Rd.                                                                                            | 66.2                 | 66.9  | 66.6         | 67.3  | 0.4        | 0.4   |
| Corydon Rd. to Bundy Canyon Rd.                                                                                     | 65.1                 | 65.3  | 65.2         | 65.4  | 0.1        | 0.1   |
| Bundy Canyon Rd. to Palomar St.                                                                                     | 64.4                 | 64.5  | 64.8         | 64.8  | 0.4        | 0.3   |
| <b><u>Olive St.</u></b>                                                                                             |                      |       |              |       |            |       |
| East of Mission Trail                                                                                               | 50.4                 | 50.9  | 50.6         | 51.2  | 0.2        | 0.3   |
| <b><u>Victorian Way</u></b>                                                                                         |                      |       |              |       |            |       |
| East of Mission Trail                                                                                               | 53.7                 | 53.5  | 54.1         | 53.9  | 0.4        | 0.4   |
| <b><u>Lemon St.</u></b>                                                                                             |                      |       |              |       |            |       |
| East of Mission Trail                                                                                               | 51.6                 | 51.6  | 51.9         | 52.0  | 0.3        | 0.4   |
| <b><u>Bundy Canyon Rd.</u></b>                                                                                      |                      |       |              |       |            |       |
| East of Mission Trail                                                                                               | 60.1                 | 60.0  | 61.6         | 61.2  | 1.5        | 1.2   |
| <b><u>Corydon Rd.</u></b>                                                                                           |                      |       |              |       |            |       |
| Mission Trail to Cereal St.                                                                                         | 60.5                 | 61.2  | 61.1         | 61.7  | 0.6        | 0.5   |
| Cereal St. to Palomar St.                                                                                           | 63.5                 | 63.3  | 64.0         | 63.8  | 0.5        | 0.5   |
| Palomar St. to Grand Avenue                                                                                         | 61.0                 | 61.9  | 61.3         | 62.1  | 0.3        | 0.2   |
| <b><u>Palomar St.</u></b>                                                                                           |                      |       |              |       |            |       |
| West of Corydon Rd.                                                                                                 | 52.7                 | 52.6  | 52.8         | 52.7  | 0.1        | 0.1   |
| Corydon Rd. to Mission Trail                                                                                        | 55.3                 | 55.6  | 55.5         | 55.8  | 0.2        | 0.2   |
| <b><u>Grand Avenue</u></b>                                                                                          |                      |       |              |       |            |       |
| Corydon Rd. to Stoneman St.                                                                                         | 65.5                 | 65.4  | 65.7         | 65.6  | 0.2        | 0.2   |
| Shaded cells indicate locations where significant noise increases may occur if noise-sensitive land uses are sited. |                      |       |              |       |            |       |
| Source: A/E Tech                                                                                                    |                      |       |              |       |            |       |

**Table 5.10-14. Comparison of Forecast Year 2022 Traffic Noise Levels  
Weekday PM Peak Hour**

| Roadway Segment                  | PM Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|----------------------------------|----------------------------|-------|--------------|-------|------------|-------|
|                                  | 2022 Baseline              |       | 2022 Phase I |       | Difference |       |
|                                  | SB/EB                      | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| <b><u>East Lakeshore Dr.</u></b> |                            |       |              |       |            |       |
| West of Lucerne St.              | 59.4                       | 59.5  | 59.4         | 59.5  | 0.0        | 0.0   |
| East of Lucerne St.              | 63.4                       | 63.5  | 64.1         | 64.2  | 0.7        | 0.7   |
| <b><u>Lucerne St.</u></b>        |                            |       |              |       |            |       |
| South of Lakeshore Dr.           | 50.8                       | 50.3  | 53.3         | 52.7  | 2.5        | 2.4   |
| <b><u>Diamond Dr.</u></b>        |                            |       |              |       |            |       |
| Mission Trail to Campbell St.    | 59.0                       | 59.6  | 62.2         | 62.2  | 3.2        | 2.6   |
| Campbell St. to Malaga Dr.       | 57.9                       | 57.2  | 62.1         | 61.0  | 4.2        | 3.8   |
| South of Malaga Dr.              | 55.8                       | 53.8  | 57.3         | 55.5  | 1.5        | 1.7   |
| <b><u>Malaga Rd.</u></b>         |                            |       |              |       |            |       |
| Mission Trail to Diamond Dr.     | 54.3                       | 54.4  | 55.4         | 55.8  | 1.1        | 1.4   |
| West of Diamond Dr.              | 48.5                       | 49.5  | 56.6         | 58.4  | 8.1        | 8.9   |
| <b><u>Mission Trail</u></b>      |                            |       |              |       |            |       |
| Diamond Dr. to Campbell St.      | 65.2                       | 64.8  | 65.9         | 65.5  | 0.7        | 0.7   |
| Campbell St. to Malaga Rd.       | 65.0                       | 64.5  | 65.7         | 65.2  | 0.7        | 0.7   |
| Malaga Rd. to Olive St.          | 66.9                       | 66.6  | 67.5         | 67.3  | 0.6        | 0.7   |
| Olive St. to Victorian Way       | 67.6                       | 67.4  | 68.0         | 67.9  | 0.4        | 0.5   |
| Victorian Way to Lemon St.       | 67.6                       | 67.3  | 68.0         | 67.8  | 0.4        | 0.5   |
| Lemon St. to Corydon Rd.         | 67.3                       | 67.4  | 67.7         | 67.8  | 0.4        | 0.4   |
| Corydon Rd. to Bundy Canyon Rd.  | 65.8                       | 65.5  | 66.0         | 65.7  | 0.2        | 0.2   |
| Bundy Canyon Rd. to Palomar St.  | 65.1                       | 64.4  | 65.6         | 65.0  | 0.5        | 0.6   |
| <b><u>Olive St.</u></b>          |                            |       |              |       |            |       |
| East of Mission Trail            | 51.5                       | 51.9  | 51.8         | 52.3  | 0.3        | 0.4   |
| <b><u>Victorian Way</u></b>      |                            |       |              |       |            |       |
| East of Mission Trail            | 55.0                       | 54.7  | 55.4         | 55.2  | 0.4        | 0.5   |
| <b><u>Lemon St.</u></b>          |                            |       |              |       |            |       |
| East of Mission Trail            | 52.1                       | 52.1  | 52.5         | 52.5  | 0.4        | 0.4   |
| <b><u>Bundy Canyon Rd.</u></b>   |                            |       |              |       |            |       |
| East of Mission Trail            | 61.3                       | 61.0  | 62.6         | 62.4  | 1.3        | 1.4   |
| <b><u>Corydon Rd.</u></b>        |                            |       |              |       |            |       |
| Mission Trail to Cereal St.      | 61.4                       | 61.4  | 62.1         | 62    | 0.7        | 0.6   |
| Cereal St. to Palomar St.        | 63.8                       | 64.0  | 64.4         | 64.6  | 0.6        | 0.6   |
| Palomar St. to Grand Avenue      | 60.9                       | 61.4  | 61.4         | 61.8  | 0.5        | 0.4   |
| <b><u>Palomar St.</u></b>        |                            |       |              |       |            |       |
| West of Corydon Rd.              | 53.5                       | 53.4  | 53.6         | 53.6  | 0.1        | 0.2   |

| Roadway Segment                                                                                                     | PM Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|---------------------------------------------------------------------------------------------------------------------|----------------------------|-------|--------------|-------|------------|-------|
|                                                                                                                     | 2022 Baseline              |       | 2022 Phase I |       | Difference |       |
|                                                                                                                     | SB/EB                      | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| Corydon Rd. to Mission Trail                                                                                        | 54.5                       | 54.7  | 55.1         | 55.3  | 0.6        | 0.6   |
| <b>Grand Avenue</b>                                                                                                 |                            |       |              |       |            |       |
| Corydon Rd. to Stoneman St.                                                                                         | 65.6                       | 65.9  | 65.9         | 66.2  | 0.3        | 0.3   |
| Shaded cells indicate locations where significant noise increases may occur if noise-sensitive land uses are sited. |                            |       |              |       |            |       |
| Source: A/E Tech                                                                                                    |                            |       |              |       |            |       |

**Table 5.10-15. Comparison of Forecast Year 2022 Traffic Noise Levels  
Saturday Midday Peak Hour**

| Roadway Segment                  | Saturday Midday Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|----------------------------------|-----------------------------------------|-------|--------------|-------|------------|-------|
|                                  | 2022 Baseline                           |       | 2022 Phase I |       | Difference |       |
|                                  | SB/EB                                   | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| <b><u>East Lakeshore Dr.</u></b> |                                         |       |              |       |            |       |
| West of Lucerne St.              | 59.0                                    | 59.3  | 59.1         | 59.4  | 0.1        | 0.1   |
| East of Lucerne St.              | 63.1                                    | 63.3  | 63.9         | 64.0  | 0.8        | 0.7   |
| <b><u>Lucerne St.</u></b>        |                                         |       |              |       |            |       |
| South of Lakeshore Dr.           | 50.6                                    | 50.1  | 53.1         | 52.5  | 2.5        | 2.4   |
| <b><u>Diamond Dr.</u></b>        |                                         |       |              |       |            |       |
| Mission Trail to Campbell St.    | 63.5                                    | 63.9  | 64.7         | 65.1  | 1.2        | 1.2   |
| Campbell St. to Malaga Dr.       | 63.3                                    | 62.1  | 64.7         | 63.8  | 1.4        | 1.7   |
| South of Malaga Dr.              | 56.3                                    | 55.1  | 57.4         | 56.1  | 1.1        | 1.0   |
| <b><u>Malaga Rd.</u></b>         |                                         |       |              |       |            |       |
| Mission Trail to Diamond Dr.     | 62.1                                    | 59.9  | 62.4         | 60.4  | 0.3        | 0.5   |
| West of Diamond Dr.              | 49.3                                    | 49.9  | 53.6         | 57.2  | 4.3        | 7.3   |
| <b><u>Mission Trail</u></b>      |                                         |       |              |       |            |       |
| Diamond Dr. to Campbell St.      | 66.1                                    | 66.4  | 66.7         | 66.9  | 0.6        | 0.5   |
| Campbell St. to Malaga Rd.       | 65.9                                    | 66.2  | 66.4         | 66.8  | 0.5        | 0.6   |
| Malaga Rd. to Olive St.          | 68.6                                    | 67.9  | 69.1         | 68.4  | 0.5        | 0.5   |
| Olive St. to Victorian Way       | 68.8                                    | 68.4  | 69.2         | 68.8  | 0.4        | 0.4   |
| Victorian Way to Lemon St.       | 68.8                                    | 68.3  | 69.2         | 68.7  | 0.4        | 0.4   |
| Lemon St. to Corydon Rd.         | 68.7                                    | 68.2  | 69.0         | 68.6  | 0.3        | 0.4   |
| Corydon Rd. to Bundy Canyon Rd.  | 67.7                                    | 66.4  | 67.9         | 66.5  | 0.2        | 0.1   |
| Bundy Canyon Rd. to Palomar St.  | 64.6                                    | 64.0  | 65.0         | 64.5  | 0.4        | 0.5   |
| <b><u>Olive St.</u></b>          |                                         |       |              |       |            |       |
| East of Mission Trail            | 52.1                                    | 52.5  | 52.4         | 52.9  | 0.3        | 0.4   |
| <b><u>Victorian Way</u></b>      |                                         |       |              |       |            |       |

| Roadway Segment                                                                                                     | Saturday Midday Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------|--------------|-------|------------|-------|
|                                                                                                                     | 2022 Baseline                           |       | 2022 Phase I |       | Difference |       |
|                                                                                                                     | SB/EB                                   | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| East of Mission Trail                                                                                               | 56.3                                    | 56.1  | 56.7         | 56.4  | 0.4        | 0.3   |
| <b>Lemon St.</b>                                                                                                    |                                         |       |              |       |            |       |
| East of Mission Trail                                                                                               | 52.7                                    | 52.6  | 53.3         | 53.3  | 0.6        | 0.7   |
| <b>Bundy Canyon Rd.</b>                                                                                             |                                         |       |              |       |            |       |
| East of Mission Trail                                                                                               | 63.3                                    | 62.4  | 63.9         | 63.1  | 0.6        | 0.7   |
| <b>Corydon Rd.</b>                                                                                                  |                                         |       |              |       |            |       |
| Mission Trail to Cereal St.                                                                                         | 60.8                                    | 61.3  | 61.5         | 62.0  | 0.7        | 0.7   |
| Cereal St. to Palomar St.                                                                                           | 63.7                                    | 63.7  | 64.3         | 64.3  | 0.6        | 0.6   |
| Palomar St. to Grand Avenue                                                                                         | 60.9                                    | 61.6  | 61.3         | 62.0  | 0.4        | 0.4   |
| <b>Palomar St.</b>                                                                                                  |                                         |       |              |       |            |       |
| West of Corydon Rd.                                                                                                 | 52.5                                    | 52.5  | 52.7         | 52.7  | 0.2        | 0.2   |
| Corydon Rd. to Mission Trail                                                                                        | 52.8                                    | 53.0  | 53.4         | 53.7  | 0.6        | 0.7   |
| <b>Grand Avenue</b>                                                                                                 |                                         |       |              |       |            |       |
| Corydon Rd. to Stoneman St.                                                                                         | 64.8                                    | 64.8  | 65.1         | 65.1  | 0.3        | 0.3   |
| Shaded cells indicate locations where significant noise increases may occur if noise-sensitive land uses are sited. |                                         |       |              |       |            |       |
| Source: A/E Tech                                                                                                    |                                         |       |              |       |            |       |

From data in Tables 5.10-13 through 5.10-15, it is apparent that implementation of Phase I of the Project by year 2022 would cause substantial traffic noise level increases during AM and PM peak hours on weekdays in the vicinity of Diamond Drive between Malaga Road and Mission Trail, and on Malaga Road west of Diamond Drive. During Saturday midday peak hour, substantial increases in traffic noise would occur along Malaga Road west of Diamond Drive. However, ***since these areas are not currently noise-sensitive, traffic noise level increases are not considered significant.*** Potentially significant increases in noise levels would occur if noise-sensitive land uses are developed along these roadway segments in the future. In areas along other roadways throughout the Project vicinity, traffic noise level changes would be generally below the 3-dB threshold of significance. Therefore, ***traffic noise level increases would not be significant increases at any existing noise-sensitive uses based on analysis of Phase I completion at the plan-level.***

Project-specific details associated with future development in the specific plan area are not currently available. Therefore, ***it is possible that a future individual project's incremental contribution to the anticipated traffic noise increases analyzed in Tables 5.10-13 through 5.10-15 could result in a 3 dB increase in areas that exceed General Plan noise standards or result in a 5 dB increase in other areas; thus, exceeding significance thresholds at the future project-level.*** Potential measures to reduce such impacts may include use of site design, setbacks from roadway, and/or placement of sound walls or other shielding features to reduce potential noise impacts to below significant with implementation of

mitigation measure **MM NOI-2** through **MM NOI-4**. However, it cannot be guaranteed at this time that such measures would reduce traffic noise impacts on existing or future noise-sensitive uses to meet the City standards.

In Year 2040, peak hour traffic noise levels during AM and PM on weekdays and midday on Saturdays were estimated for 2040 Baseline condition and the 2040 Project condition at buildout. The results of these analyses are shown in Tables 5.10-16 through 5.10-18.

**Table 5.10-16. Comparison of Forecast Year 2040 Traffic Noise Levels  
Weekday AM Peak Hour**

| Roadway Segment                  | Weekday AM Peak Hour $L_{eq}$ dB |       |              |       |            |       |
|----------------------------------|----------------------------------|-------|--------------|-------|------------|-------|
|                                  | 2040 Baseline                    |       | 2040 Project |       | Difference |       |
|                                  | SB/EB                            | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| <b><u>East Lakeshore Dr.</u></b> |                                  |       |              |       |            |       |
| West of Lucerne St.              | 63.1                             | 63.5  | 63.0         | 63.5  | -0.1       | 0.0   |
| East of Lucerne St.              | 66.4                             | 66.7  | 66.5         | 66.7  | 0.1        | 0.0   |
| <b><u>Lucerne St.</u></b>        |                                  |       |              |       |            |       |
| South of Lakeshore Dr.           | 57.2                             | 56.7  | 57.4         | 57.1  | 0.2        | 0.4   |
| <b><u>Diamond Dr.</u></b>        |                                  |       |              |       |            |       |
| Mission Trail to Campbell St.    | 62.2                             | 62.9  | 61.3         | 61.9  | -0.9       | -1.0  |
| Campbell St. to Malaga Dr.       | 61.1                             | 61.8  | 59.9         | 60.3  | -1.2       | -1.5  |
| South of Malaga Dr.              | 60.1                             | 60.5  | 58.1         | 58.5  | -2.0       | -2.0  |
| <b><u>Malaga Rd.</u></b>         |                                  |       |              |       |            |       |
| Mission Trail to Diamond Dr.     | 53.8                             | 55.0  | 53.6         | 55.0  | -0.2       | 0.0   |
| West of Diamond Dr.              | 49.2                             | 50.0  | 48.5         | 49.2  | -0.7       | -0.8  |
| <b><u>Mission Trail</u></b>      |                                  |       |              |       |            |       |
| Diamond Dr. to Campbell St.      | 66.9                             | 67.4  | 66.4         | 66.7  | -0.5       | -0.7  |
| Campbell St. to Malaga Rd.       | 66.8                             | 67.4  | 66.3         | 66.7  | -0.5       | -0.7  |
| Malaga Rd. to Olive St.          | 68.2                             | 68.8  | 67.9         | 68.5  | -0.3       | -0.3  |
| Olive St. to Victorian Way       | 68.6                             | 68.8  | 68.6         | 68.8  | 0.0        | 0.0   |
| Victorian Way to Lemon St.       | 68.6                             | 68.8  | 68.6         | 68.9  | 0.0        | 0.1   |
| Lemon St. to Corydon Rd.         | 68.3                             | 69.1  | 68.3         | 69.2  | 0.0        | 0.1   |
| Corydon Rd. to Bundy Canyon Rd.  | 67.4                             | 67.7  | 67.5         | 67.9  | 0.1        | 0.2   |
| Bundy Canyon Rd. to Palomar St.  | 66.2                             | 66.6  | 66.0         | 66.5  | -0.2       | -0.1  |
| <b><u>Olive St.</u></b>          |                                  |       |              |       |            |       |
| East of Mission Trail            | 52.0                             | 52.5  | 51.9         | 52.4  | -0.1       | -0.1  |
| <b><u>Victorian Way</u></b>      |                                  |       |              |       |            |       |
| East of Mission Trail            | 56.0                             | 55.8  | 55.9         | 55.7  | -0.1       | -0.1  |
| <b><u>Lemon St.</u></b>          |                                  |       |              |       |            |       |
| East of Mission Trail            | 54.4                             | 54.4  | 54.3         | 54.3  | -0.1       | -0.1  |
| <b><u>Bundy Canyon Rd.</u></b>   |                                  |       |              |       |            |       |

| Roadway Segment              | Weekday AM Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|------------------------------|------------------------------------|-------|--------------|-------|------------|-------|
|                              | 2040 Baseline                      |       | 2040 Project |       | Difference |       |
|                              | SB/EB                              | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| East of Mission Trail        | 64.2                               | 63.7  | 63.8         | 63.4  | -0.4       | -0.3  |
| <b>Corydon Rd.</b>           |                                    |       |              |       |            |       |
| Mission Trail to Cereal St.  | 61.7                               | 62.5  | 61.5         | 62.3  | -0.2       | -0.2  |
| Cereal St. to Palomar St.    | 64.9                               | 64.6  | 64.7         | 64.4  | -0.2       | -0.2  |
| Palomar St. to Grand Avenue  | 63.4                               | 64.2  | 63.3         | 64.1  | -0.1       | -0.1  |
| <b>Palomar St.</b>           |                                    |       |              |       |            |       |
| West of Corydon Rd.          | 54.0                               | 53.6  | 54.0         | 53.7  | 0.0        | 0.1   |
| Corydon Rd. to Mission Trail | 59.4                               | 59.7  | 59.3         | 59.6  | -0.1       | -0.1  |
| <b>Grand Avenue</b>          |                                    |       |              |       |            |       |
| Corydon Rd. to Stoneman St.  | 67.3                               | 67.2  | 67.3         | 67.2  | 0.0        | 0.0   |
| Source: A/E Tech             |                                    |       |              |       |            |       |

**Table 5.10-17. Comparison of Forecast Year 2040 Traffic Noise Levels  
Weekday PM Peak Hour**

| Roadway Segment               | Weekday PM Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|-------------------------------|------------------------------------|-------|--------------|-------|------------|-------|
|                               | 2040 Baseline                      |       | 2040 Project |       | Difference |       |
|                               | SB/EB                              | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| <b>East Lakeshore Dr.</b>     |                                    |       |              |       |            |       |
| West of Lucerne St.           | 65.2                               | 65.1  | 65.2         | 65.1  | 0.0        | 0.0   |
| East of Lucerne St.           | 67.8                               | 67.9  | 67.9         | 68.1  | 0.1        | 0.2   |
| <b>Lucerne St.</b>            |                                    |       |              |       |            |       |
| South of Lakeshore Dr.        | 58.9                               | 58.1  | 59.3         | 58.5  | 0.4        | 0.4   |
| <b>Diamond Dr.</b>            |                                    |       |              |       |            |       |
| Mission Trail to Campbell St. | 63.9                               | 64.3  | 63.2         | 63.6  | -0.7       | -0.7  |
| Campbell St. to Malaga Dr.    | 63.4                               | 62.8  | 62.3         | 61.6  | -1.1       | -1.2  |
| South of Malaga Dr.           | 62.2                               | 60.8  | 60.7         | 59.0  | -1.5       | -1.8  |
| <b>Malaga Rd.</b>             |                                    |       |              |       |            |       |
| Mission Trail to Diamond Dr.  | 58.1                               | 57.7  | 57.1         | 57.1  | -1.0       | -0.6  |
| West of Diamond Dr.           | 51.2                               | 51.9  | 50.9         | 51.8  | -0.3       | -0.1  |
| <b>Mission Trail</b>          |                                    |       |              |       |            |       |
| Diamond Dr. to Campbell St.   | 68.4                               | 67.9  | 67.7         | 67.4  | -0.7       | -0.5  |
| Campbell St. to Malaga Rd.    | 68.4                               | 67.9  | 67.7         | 67.3  | -0.7       | -0.6  |
| Malaga Rd. to Olive St.       | 70.0                               | 69.7  | 69.6         | 69.3  | -0.4       | -0.4  |
| Olive St. to Victorian Way    | 69.9                               | 69.7  | 69.8         | 69.7  | -0.1       | 0.0   |
| Victorian Way to Lemon St.    | 69.9                               | 69.6  | 69.9         | 69.6  | 0.0        | 0.0   |

| Roadway Segment                 | Weekday PM Peak Hour $L_{eq}$ dB |       |              |       |            |       |
|---------------------------------|----------------------------------|-------|--------------|-------|------------|-------|
|                                 | 2040 Baseline                    |       | 2040 Project |       | Difference |       |
|                                 | SB/EB                            | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| Lemon St. to Corydon Rd.        | 69.7                             | 69.7  | 69.7         | 69.7  | 0.0        | 0.0   |
| Corydon Rd. to Bundy Canyon Rd. | 68.4                             | 68.2  | 68.5         | 68.3  | 0.1        | 0.1   |
| Bundy Canyon Rd. to Palomar St. | 67.1                             | 66.8  | 67.0         | 66.6  | -0.1       | -0.2  |
| <b>Olive St.</b>                |                                  |       |              |       |            |       |
| East of Mission Trail           | 53.7                             | 54.1  | 53.6         | 54.0  | -0.1       | -0.1  |
| <b>Victorian Way</b>            |                                  |       |              |       |            |       |
| East of Mission Trail           | 57.4                             | 57.2  | 57.3         | 57.1  | -0.1       | -0.1  |
| <b>Lemon St.</b>                |                                  |       |              |       |            |       |
| East of Mission Trail           | 55.2                             | 55.2  | 55.0         | 55.0  | -0.2       | -0.2  |
| <b>Bundy Canyon Rd.</b>         |                                  |       |              |       |            |       |
| East of Mission Trail           | 65.2                             | 65.0  | 65.0         | 64.7  | -0.2       | -0.3  |
| <b>Corydon Rd.</b>              |                                  |       |              |       |            |       |
| Mission Trail to Cereal St.     | 62.7                             | 62.7  | 62.5         | 62.6  | -0.2       | -0.1  |
| Cereal St. to Palomar St.       | 65.3                             | 65.7  | 65.2         | 65.5  | -0.1       | -0.2  |
| Palomar St. to Grand Avenue     | 63.6                             | 64.1  | 63.7         | 64.1  | 0.1        | 0.0   |
| <b>Palomar St.</b>              |                                  |       |              |       |            |       |
| West of Corydon Rd.             | 54.2                             | 54.3  | 54.3         | 54.3  | 0.1        | 0.0   |
| Corydon Rd. to Mission Trail    | 59.4                             | 59.6  | 59.3         | 59.6  | -0.1       | 0.0   |
| <b>Grand Avenue</b>             |                                  |       |              |       |            |       |
| Corydon Rd. to Stoneman St.     | 67.5                             | 67.8  | 67.5         | 67.9  | 0.0        | 0.1   |
| Source: A/E Tech                |                                  |       |              |       |            |       |

**Table 5.10-18. Comparison of Forecast Year 2040 Traffic Noise Levels  
Saturday Midday Peak Hour**

| Roadway Segment               | Saturday Midday Peak Hour $L_{eq}$ dB |       |              |       |            |       |
|-------------------------------|---------------------------------------|-------|--------------|-------|------------|-------|
|                               | 2040 Baseline                         |       | 2040 Project |       | Difference |       |
|                               | SB/EB                                 | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| <b>East Lakeshore Dr.</b>     |                                       |       |              |       |            |       |
| West of Lucerne St.           | 64.5                                  | 64.7  | 64.7         | 65.0  | 0.2        | 0.3   |
| East of Lucerne St.           | 67.7                                  | 67.9  | 67.9         | 68.2  | 0.2        | 0.3   |
| <b>Lucerne St.</b>            |                                       |       |              |       |            |       |
| South of Lakeshore Dr.        | 58.3                                  | 57.7  | 59.2         | 58.6  | 0.9        | 0.9   |
| <b>Diamond Dr.</b>            |                                       |       |              |       |            |       |
| Mission Trail to Campbell St. | 66.2                                  | 66.7  | 65.8         | 66.3  | -0.4       | -0.4  |
| Campbell St. to Malaga Dr.    | 65.8                                  | 65.2  | 65.2         | 64.6  | -0.6       | -0.6  |

| Roadway Segment                 | Saturday Midday Peak Hour $L_{eq}$ , dB |       |              |       |            |       |
|---------------------------------|-----------------------------------------|-------|--------------|-------|------------|-------|
|                                 | 2040 Baseline                           |       | 2040 Project |       | Difference |       |
|                                 | SB/EB                                   | NB/WB | SB/EB        | NB/WB | SB/EB      | NB/WB |
| South of Malaga Dr.             | 62.4                                    | 61.4  | 61.9         | 60.0  | -0.5       | -1.4  |
| <b>Malaga Rd.</b>               |                                         |       |              |       |            |       |
| Mission Trail to Diamond Dr.    | 62.7                                    | 60.9  | 62.7         | 60.9  | 0.0        | 0.0   |
| West of Diamond Dr.             | 51.8                                    | 52.2  | 52.0         | 52.6  | 0.2        | 0.4   |
| <b>Mission Trail</b>            |                                         |       |              |       |            |       |
| Diamond Dr. to Campbell St.     | 68.6                                    | 68.8  | 68.1         | 68.3  | -0.5       | -0.5  |
| Campbell St. to Malaga Rd.      | 68.7                                    | 68.9  | 68.1         | 68.3  | -0.6       | -0.6  |
| Malaga Rd. to Olive St.         | 70.8                                    | 70.4  | 70.4         | 70.1  | -0.4       | -0.3  |
| Olive St. to Victorian Way      | 70.5                                    | 70.3  | 70.4         | 70.2  | -0.1       | -0.1  |
| Victorian Way to Lemon St.      | 70.6                                    | 70.2  | 70.4         | 70.0  | -0.2       | -0.2  |
| Lemon St. to Corydon Rd.        | 70.3                                    | 70.2  | 70.2         | 70.0  | -0.1       | -0.2  |
| Corydon Rd. to Bundy Canyon Rd. | 69.2                                    | 68.3  | 69.1         | 68.3  | -0.1       | 0.0   |
| Bundy Canyon Rd. to Palomar St. | 66.0                                    | 65.9  | 66.0         | 65.9  | 0.0        | 0.0   |
| <b>Olive St.</b>                |                                         |       |              |       |            |       |
| East of Mission Trail           | 53.9                                    | 54.3  | 53.8         | 54.2  | -0.1       | -0.1  |
| <b>Victorian Way</b>            |                                         |       |              |       |            |       |
| East of Mission Trail           | 58.1                                    | 57.8  | 57.9         | 57.6  | -0.2       | -0.2  |
| <b>Lemon St.</b>                |                                         |       |              |       |            |       |
| East of Mission Trail           | 55.4                                    | 55.4  | 55.3         | 55.3  | -0.1       | -0.1  |
| <b>Bundy Canyon Rd.</b>         |                                         |       |              |       |            |       |
| East of Mission Trail           | 65.2                                    | 64.6  | 64.9         | 64.3  | -0.3       | -0.3  |
| <b>Corydon Rd.</b>              |                                         |       |              |       |            |       |
| Mission Trail to Cereal St.     | 62.4                                    | 62.9  | 62.2         | 62.8  | -0.2       | -0.1  |
| Cereal St. to Palomar St.       | 64.8                                    | 64.8  | 64.6         | 64.7  | -0.2       | -0.1  |
| Palomar St. to Grand Avenue     | 62.9                                    | 63.6  | 62.9         | 63.6  | 0.0        | 0.0   |
| <b>Palomar St.</b>              |                                         |       |              |       |            |       |
| West of Corydon Rd.             | 53.2                                    | 53.2  | 53.3         | 53.4  | 0.1        | 0.2   |
| Corydon Rd. to Mission Trail    | 58.3                                    | 58.5  | 58.9         | 59.1  | 0.6        | 0.6   |
| <b>Grand Avenue</b>             |                                         |       |              |       |            |       |
| Corydon Rd. to Stoneman St.     | 66.5                                    | 66.6  | 66.5         | 66.7  | 0.0        | 0.1   |
| Source: A/E Tech                |                                         |       |              |       |            |       |

From data in Tables 5.10-16 through 5.10-18, it can be concluded that implementation of the Project in year 2040 would result in lower traffic noise levels than the 2040 Baseline condition at many locations along area roadways during AM and PM peak hours on weekdays and Midday peak hour on Saturdays. At some locations where slight increases in hourly traffic noise would occur, such **increases would be below 1 dB and therefore not significant based on analysis of Project buildout at the plan-level.**

Project-specific details associated with future development in the specific plan area are not currently available. Therefore, ***it is possible that a future individual project's incremental contribution to the anticipated traffic noise increases analyzed in Tables 5.10-16 through 5.10-18 could result in a 3 dB increase in areas that exceed General Plan noise standards or result in a 5 dB increase in other areas; thus, exceeding significance thresholds at the future project-level.*** Potential measures to reduce such impacts may include use of site design, setbacks, placement of sound walls or other shielding features to reduce impacts to below significant with implementation of mitigation measure **MM NOI-2** through **MM NOI-4**. However, it cannot be guaranteed at this time that such measures would reduce traffic noise impacts on existing or future sensitive uses to meet City standards.

**Impact NOI-3** *Future implementing development projects within the East Lake Specific Plan would generate additional traffic and associated traffic noise; potentially resulting in a 3 dB noise increase in areas that exceed General Plan noise standards or result in a 5 dB noise increase in other areas.*

#### Daily Traffic Noise

On a daily basis, forecast ADT volumes for year 2022 and year 2040 scenarios were utilized in conjunction with assumed vehicle compositions on area roadways and a 90%/10% day/night split of traffic. For vehicle speeds in TNM, posted speed limits on each roadway were used. In order to identify areas along each roadway segment within the Project vicinity where traffic noise levels would exceed the City's noise compatibility threshold of 60 dB L<sub>dn</sub> for residential land uses, distances from each roadway centerline to this noise level were computed. Tables 5.10-19 and 5.10-20 show distances from roadway centerlines to 60 dB L<sub>dn</sub> along each of the area roadways.

**Table 5.10-19. Year 2022 Distances from Roadway Centerline to 60 dB Ldn Traffic Noise Contours (Feet)**

| ROADWAY SEGMENT                                      | 2022<br>Baseline<br>Weekday | 2022<br>Baseline<br>Saturday | 2022<br>Phase I<br>Weekday | 2022<br>Phase I<br>Saturday |
|------------------------------------------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|
| Grape St., east of Railroad Canyon Rd.               | 299                         | 316                          | 300                        | 319                         |
| Railroad Canyon Rd, between Grape St & Lakeshore Dr. | 145                         | 163                          | 180                        | 198                         |
| Lucerne St., south of Lakeshore Dr.                  | -                           | -                            | -                          | -                           |
| Casino Dr., east of Diamond Dr.                      | 72                          | 68                           | 72                         | 68                          |
| Diamond Dr., between Lakeshore Dr & Campbell St.     | 86                          | 102                          | 141                        | 148                         |
| Diamond Dr., between Campbell St. & Malaga Rd.       | 50                          | 50                           | 123                        | 130                         |
| Mission Trail, between Diamond Dr. & Campbell St.    | 252                         | 242                          | 262                        | 253                         |
| Mission Trail, between Campbell St. & Malaga Rd.     | 242                         | 245                          | 255                        | 258                         |
| Malaga Rd., between Diamond Dr. & Mission Trail      | -                           | -                            | 34                         | 34                          |
| Malaga Rd., east of Mission Trail                    | 33                          | 35                           | 33                         | 35                          |
| Diamond Dr., north of Summerly Place                 | -                           | -                            | -                          | -                           |
| Mission Trail, between Malaga Rd. & Olive St.        | 270                         | 267                          | 283                        | 281                         |
| Olive St., between Mission Trail & Grape St.         | 19                          | 18                           | 20                         | 20                          |

| <b>ROADWAY SEGMENT</b>                                                                                       | <b>2022<br/>Baseline<br/>Weekday</b> | <b>2022<br/>Baseline<br/>Saturday</b> | <b>2022<br/>Phase I<br/>Weekday</b> | <b>2022<br/>Phase I<br/>Saturday</b> |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Mission Trail, between Olive St. & Victorian Lane                                                            | 281                                  | 276                                   | 290                                 | 286                                  |
| Mission Trail, between Victorian Lane & Lemon St.                                                            | 281                                  | 276                                   | 292                                 | 288                                  |
| Lemon St., between Mission Trail & Grape St.                                                                 | -                                    | -                                     | 18                                  | 17                                   |
| Corydon Rd., between Mission Trail & Cereal St.                                                              | 172                                  | 167                                   | 181                                 | 176                                  |
| Cereal St., west of Corydon Rd.                                                                              | -                                    | -                                     | 34                                  | 37                                   |
| Mission Trail, between Corydon Rd. & Bundy Canyon Rd.                                                        | 250                                  | 240                                   | 253                                 | 244                                  |
| Bundy Canyon Rd., between Mission Trail & I-15 SB Ramps                                                      | 174                                  | 170                                   | 190                                 | 187                                  |
| Corydon Rd., between Cereal St. & Palomar St.                                                                | 192                                  | 187                                   | 203                                 | 200                                  |
| Mission Trail, between Bundy Canyon Rd. & Palomar St.                                                        | 200                                  | 180                                   | 215                                 | 195                                  |
| Palomar St., between Corydon Rd. & Mission Trail                                                             | 41                                   | 36                                    | 46                                  | 41                                   |
| Stoneman St., north of Grand Avenue                                                                          | -                                    | -                                     | -                                   | -                                    |
| Skylark Dr., north of Grand Avenue                                                                           | -                                    | -                                     | -                                   | -                                    |
| Corydon Rd., between Palomar St. & Grand Avenue                                                              | 178                                  | 174                                   | 182                                 | 178                                  |
| Sylvester St., between Lucerne St. & Diamond Dr.                                                             | -                                    | -                                     | 94                                  | 98                                   |
| Lucerne St., between Sylvester St. & Cereal St.                                                              | -                                    | -                                     | 84                                  | 88                                   |
| Cereal St., between Lucerne St. & Stoneman St.                                                               | -                                    | -                                     | 56                                  | 61                                   |
| Cereal St., between Stoneman St. & Diamond Dr.                                                               | -                                    | -                                     | 56                                  | 61                                   |
| Diamond Dr., between Olive St. & Cereal St.                                                                  | -                                    | -                                     | -                                   | -                                    |
| Bundy Canyon Rd., between Corydon Rd. & Mission Trail                                                        | 123                                  | 118                                   | 158                                 | 158                                  |
| Blank cells indicate locations where the 60 dB Ldn noise level would not extend beyond the roadway pavement. |                                      |                                       |                                     |                                      |
| Source: A/E Tech                                                                                             |                                      |                                       |                                     |                                      |

**Table 5.10-20. Year 2040 Distances from Roadway Centerline  
to 60 dB Ldn Traffic Noise Contours (Feet)**

| <b>ROADWAY SEGMENT</b>                              | <b>2040<br/>Baseline<br/>Weekday</b> | <b>2040<br/>Baseline<br/>Saturday</b> | <b>2040<br/>Project<br/>Weekday</b> | <b>2040<br/>Project<br/>Saturday</b> |
|-----------------------------------------------------|--------------------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Grape St., east of Railroad Canyon Rd.              | 325                                  | 343                                   | 323                                 | 341                                  |
| Railroad Canyon Rd, between Grape St & Lakeshore Dr | 263                                  | 273                                   | 257                                 | 263                                  |
| Lucerne St., south of Lakeshore Dr.                 | 61                                   | 63                                    | 75                                  | 76                                   |
| Casino Dr., east of Diamond Dr.                     | 111                                  | 106                                   | 111                                 | 106                                  |
| Diamond Dr., between Lakeshore Dr & Campbell St.    | 165                                  | 170                                   | 154                                 | 158                                  |
| Diamond Dr., between Campbell St. & Malaga Rd.      | 140                                  | 144                                   | 107                                 | 109                                  |
| Mission Trail, between Diamond Dr. & Campbell St.   | 307                                  | 303                                   | 297                                 | 287                                  |
| Mission Trail, between Campbell St. & Malaga Rd.    | 306                                  | 315                                   | 290                                 | 295                                  |
| Malaga Rd., between Diamond Dr. & Mission Trail     | 45                                   | 47                                    | 43                                  | 44                                   |
| Malaga Rd., east of Mission Trail                   | 33                                   | 35                                    | 33                                  | 35                                   |
| Diamond Dr., north of Summerly Place                | 109                                  | 118                                   | 65                                  | 62                                   |

| ROADWAY SEGMENT                                                                                                                  | 2040<br>Baseline<br>Weekday | 2040<br>Baseline<br>Saturday | 2040<br>Project<br>Weekday | 2040<br>Project<br>Saturday |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|
| Mission Trail, between Malaga Rd. & Olive St.                                                                                    | 345                         | 348                          | 327                        | 325                         |
| Olive St., between Mission Trail & Grape St.                                                                                     | 29                          | 28                           | 28                         | 28                          |
| Mission Trail, between Olive St. & Victorian Lane                                                                                | 332                         | 331                          | 330                        | 326                         |
| Mission Trail, between Victorian Lane & Lemon St.                                                                                | 333                         | 332                          | 331                        | 326                         |
| Lemon St., between Mission Trail & Grape St.                                                                                     | 36                          | 34                           | 34                         | 33                          |
| Corydon Rd., between Mission Trail & Cereal St.                                                                                  | 192                         | 190                          | 189                        | 185                         |
| Cereal St., west of Corydon Rd.                                                                                                  | 54                          | 68                           | 39                         | 48                          |
| Mission Trail, between Corydon Rd. & Bundy Canyon Rd.                                                                            | 295                         | 286                          | 295                        | 286                         |
| Bundy Canyon Rd., between Mission Trail & I-15 SB Ramps                                                                          | 230                         | 229                          | 203                        | 200                         |
| Corydon Rd., between Cereal St. & Palomar St.                                                                                    | 227                         | 225                          | 220                        | 216                         |
| Mission Trail, between Bundy Canyon Rd. & Palomar St.                                                                            | 258                         | 250                          | 255                        | 244                         |
| Palomar St., between Corydon Rd. & Mission Trail                                                                                 | 121                         | 110                          | 121                        | 109                         |
| Stoneman St., north of Grand Avenue                                                                                              | 72                          | 73                           | 68                         | 67                          |
| Skylark Dr., north of Grand Avenue                                                                                               | -                           | -                            | -                          | -                           |
| Corydon Rd., between Palomar St. & Grand Avenue                                                                                  | 214                         | 210                          | 214                        | 209                         |
| Sylvester St., between Lucerne St. & Diamond Dr.                                                                                 | -                           | -                            | -                          | -                           |
| Lucerne St., between Sylvester St. & Cereal St.                                                                                  | 106                         | 112                          | 128                        | 132                         |
| Cereal St., between Lucerne St. & Stoneman St.                                                                                   | 78                          | 81                           | 88                         | 91                          |
| Cereal St., between Stoneman St. & Diamond Dr.                                                                                   | 95                          | 98                           | 99                         | 99                          |
| Diamond Dr., between Olive St. & Cereal St.                                                                                      | 70                          | 73                           | 55                         | 53                          |
| Bundy Canyon Rd., between Corydon Rd. & Mission Trail                                                                            | 192                         | 195                          | 180                        | 179                         |
| Blank cells indicate locations where the 60 dB Ldn noise level would not extend beyond the roadway pavement.<br>Source: A/E Tech |                             |                              |                            |                             |

The data in Tables 5.10-19 and 5.10-20 indicate distances from roadway centerlines within which the City's noise compatibility threshold of 60 dB L<sub>dn</sub> would be exceeded. **Therefore, exterior areas of future noise-sensitive land uses placed within these distances would be impacted significantly by traffic noise.** Potential measures to reduce such impacts may include use of site design, setbacks, placement of sound walls or other shielding features to reduce impacts to below significant with implementation of mitigation measure **MM NOI-2** through **MM NOI-4**. **However, it cannot be guaranteed at this time that such measures would reduce traffic noise impacts on existing and/or future sensitive uses to meet City standards.**

**Impact NOI-4** A potentially significant impact would occur if future noise sensitive land uses are sited within the 60 dB Ldn noise contour distances described in Table 5.10-20. A significant unavoidable impact would occur to existing sensitive uses within these noise contour distances if they remain during buildout of the East Lake Specific Plan.

## **Action Sports, Tourism, Commercial and Recreation Operational Noise**

### Mixed-Use, light-industrial and Residential Overlays; Commercial and Hotels

Operational noise of various allowable mixed-use, light-industrial, residential, commercial and hotel uses would neither be a substantial noise generator to sensitive uses within the Project site nor to other sensitive uses within the Project vicinity. These uses are anticipated to comply with noise standards in accordance with City standards, including those outlined in the ELSPA No. 11 (i.e. new Specific Plan) related to noise minimization with siting requirements and development standards. Increased noise within these overlay districts as proposed in Planning Area's 2, 3 and 8 would predominantly be associated with increased traffic accessing these future developed areas as analyzed and disclosed above in the Operational Traffic Noise Section. In addition, implementation of mitigation measure **MM NOI-3** would be required of future implementing development projects to reduce potential impacts.

### Action Sports 1 and 2 (Racing Facilities)

Potentially significant noise impacts would result from the development of noise-intensive land uses such as racing facilities in proposed Planning Area 6. A detailed noise analysis was performed for the proposed Project, which assumed that future noise-intensive uses within proposed Planning Area 6 would allow for dirt track and hard track motocross and racing facilities. It was further assumed that future dirt track facilities operations would be comparable to operations at the existing Lake Elsinore Motorsports Park off-road racing complex located at 20700 Cereal Street in Lake Elsinore. The existing racing complex is estimated to be approximately 85 acres in area. Proposed Planning Area 6 would also allow for operation of a paved track racing facility. Noise estimates for the paved track facility were modeled after the Irwindale Speedway operations in Irwindale, California and events at the Auto Club Speedway in Fontana, California.

Components of allowed racing facilities in proposed Planning Area 6 are assumed to be as follows:

#### Dirt Tracks

Dirt Tracks would be similar in formation and area coverage to the existing dirt tracks at the Lake Elsinore Motorsports Park. Approximately four large weekend events with 15,000 to 20,000 people would occur annually. Smaller events and daily track use would also occur. Large scheduled events could include the Lucas Oil Off-Road Racing Series, which has 11 classes as follows:

- Pro 4 Unlimited: Full-sized 4-wheel-drive race truck;
- Pro 2 Unlimited: Full-sized 2-wheel-drive race truck;
- Pro Lite Unlimited: Mid-sized 2-wheel-drive race truck built on a standardized chassis;
- Pro Buggy Unlimited: Open-wheel buggies with 1650 cc to 2400 cc motors (dependent on design and manufacturer);
- SuperLite: Spec 2-wheel-drive truck regulated by the SuperLite Championship Series;
- Limited Buggy: Open-wheel buggies with Type 1 1600 cc VW engines;
- Unlimited UTV: Heavily modified UTV utilizing up to 1000cc engines;

- Sr1 UTV: Heavily modified Yamaha Rhino or Kawasaki Teryxspec class utilizing the Yamaha R1 or Kawasaki ZX-10 1000cc street bike motor;
- Modified Kart: Advanced kart class for kids ages 10–15 utilizing 250cc or 450cc motorcycle or quad motors;
- Junior 2 Kart: Intermediate spec kart class for kids ages 8–15 utilizing the Honda GX390 390cc motor;
- Junior 1 Kart: Beginning spec kart class for kids ages 8–15 utilizing the Subaru EX27 266cc motor.

#### Paved Tracks

Paved tracks would be similar to the existing paved oval race tracks (banked 1/2 and 1/3 mile) at the Irwindale Speedway, which also includes 6,000 spectator seats, sound and lighting systems, and paved parking for over 3,000 cars. These tracks would accommodate racing of modified street stock cars, super stocks, and late model stocks. Finally, it is assumed that up to 20 racing vehicles could partake at each of the large scheduled events.

In order to assess the potential noise effects of placing such noise-intensive uses in proposed Planning Area 6, a noise literature review of motocross, dirt track racing, and paved track racing was conducted. Findings of that research show that pass-by maximum noise levels ( $L_{max}$ ) at 50 feet from mini cars, U cars, Legends, Super Stocks, and Touring cars range anywhere between 80 dB to 99 dB.

Elsewhere, measured noise levels from Nextel Cup events and Sports Car Club of America (SCCA) events at the Auto Club Speedway indicate that distances from the oval paved tracks to the 85 dB noise contour for each of these events are approximately 1,800 feet and 1,100 feet, respectively. Figures 7A and 7B of the Noise Study Report (Appendix I) show the noise contours associated with these racing events at the Auto Club Speedway.

Other data suggest that motocross noise level from a motorbike pass-by is near 95 dB at a distance of 50 feet. With a conservative assumption of 20 motorbikes racing at a typical event and a distance attenuation factor of 6 dB noise reduction per doubling of distance, maximum noise levels from a 20-bike race at a distance of 1,000 feet from the racing facility would be near 82 dB. Noise levels from such an event at a distance of approximately 2,300 feet would be 75 dB. During an actual event, noise from such races fluctuates as the motorbikes rise above and dip into the race tracks. Noise from crowds and Public Address (PA) systems would also be a factor at larger events; however, vehicle noise would be the dominating noise generator. Large racing events at either the dirt-track facility or paved-track facility would happen infrequently and standard operations at such facilities would be expected to generate lower noise levels overall.

Future Action Sports racing facilities in Planning Area 6 would generally be located away from noise sensitive uses within and adjacent to the proposed Project site, as shown on Figure 3-4 Proposed Land Use plan. Planning Area 6 would be buffered by preservation/mitigation areas located in proposed Planning Areas 5 and 7; by The Links at Summerly Golf Course in proposed Planning Area 1; and by Lake

Elsinore to the west; however, according to the modeled distances provided above, exceptions would potentially include Lakepoint Park (approximately 890 feet to the north from the closest point of Planning Area 6), Lake Elsinore Village senior homes (approximately 1,500 feet to the north from the closest point of Planning Area 6) and future mixed-use development in proposed Planning Area 8. Measures to reduce such impacts on sensitive uses may include use of site design, setbacks, placement of sound walls or other shielding features with implementation of mitigation measure **MM NOI-2** through **MM NOI-5**.

#### Active Recreation 1 and 2 (Baseball/Field Sports Complex, Water Park, Cable Ski Park, Hockey Rink)

Examples of Active Recreation 1 and 2 would include a baseball/field sports complex, water park, cable ski park, and/or hockey rink in proposed Planning Areas 2, 3 and/or 6. Active Recreation 1 and 2 uses would generate noise from the collective conversations of crowds and cheering, and from use of PA systems. Noise levels would be higher, particularly during large events, and would also be dependent upon design of the facility and whether it is fully-enclosed, partially-enclosed or open-air. Measures to reduce such impacts on sensitive uses may include use of site design, setbacks, placement of sound walls or other shielding features with implementation of mitigation measure **MM NOI-2** through **MM NOI-5**.

For purposes of modeling future similar Active Recreation 1 and 2 uses, noise measurements were recorded during a ‘Hip Hop’ concert at the Diamond Storm Stadium, taken at various locations within the adjacent Summerly residential development and at the south end of River’s Edge Apartments, as shown above in Figure 5.10-2 and Table 5.10-8. The Diamond stadium is a partially-enclosed facility and has a capacity of approximately 6,000 people. The concert was selected to capture a worst-case, stadium-noise-event for predicting future similar uses. The results showed that Periodic noise events exceeded 60 dB at all locations (at most by 14.2 dB at one location) for  $L_{max}$  and up to 0.4 dB at one location for  $L_{25}$ . All other measurements demonstrated that noise levels remained under appropriate levels for sensitive land uses. In other words, noise levels measured at these adjacent sensitive uses remained under 60 dB and were only exceeded during one or more brief noise events.

#### Summary

Operational noise of various allowable mixed-use, light-industrial, residential, commercial and hotel uses would neither be a substantial noise generator to sensitive uses within the Project site nor to other sensitive uses within the Project vicinity. Based on the modeled noise levels presented above and in consideration of the generally low levels of existing noise at the Project site as shown in Tables 5.10-2 through 5.10-5, it is anticipated that ***future Action Sports 1 and 2 racing facilities in Planning Area 6 and future Active Recreation 1 and 2 facilities in Planning Areas 2, 3 and/or 6 would increase ambient noise levels by 3 dB in areas that exceed General Plan noise standards and/or result in a 5 dB increase in other areas; thus, exceeding significance thresholds. Therefore, an overall increase in ambient noise levels within Planning Areas 2, 3 and 6 would occur, resulting in a significant unavoidable impact.*** Potential measures to reduce such impacts on sensitive uses may include use of site design, setbacks, placement of sound walls or other shielding features with implementation of mitigation measure **MM**

**NOI-2 through MM NOI-5.** *However, it cannot be guaranteed at this time that such measures would reduce noise impacts on existing or future sensitive uses to meet City standards.*

**Impact NOI-5** *Action Sports 1 and 2 racing facilities in Planning Area 6 and future Active Recreation 1 and 2 facilities in Planning Areas 2, 3 and/or 6 would increase ambient noise levels by 3 dB in areas that exceed General Plan noise standards and/or result in a 5 dB increase in other areas; thus, exceeding significance thresholds and potentially impacting sensitive uses.*

**Threshold NOI-B** *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.*

#### **5.10.6.3 Construction Impacts**

Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings founded on the soil in the vicinity of a 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.

Typically, vibration is generated by heavier construction machinery such as earth moving equipment or pile drivers. Many other equipment types such as air compressors, light trucks, hydraulic loaders, etc., generate little or no ground vibration. Therefore, mitigation measure **MM NOI-6** would require projects proposing use of large earth-moving equipment or piledrivers, in close proximity to existing sensitive buildings (i.e., distances of 100 feet or less), to perform a vibration impact assessment and provide appropriate equipment setbacks and/or daily operational limits for such equipment to ensure that construction-generated vibration impacts would not result in feelable annoyance to people or damage to existing structures. **Implementation of MM NOI-6 would reduce potential impacts to less than significant levels.**

**Impact NOI-6** *The use of heavy construction equipment (e.g. large earth movers, bulldozers and pile-drivers) within 100 feet or less of sensitive buildings could produce ground vibrations that could cause annoyance to people or damage to those existing structures.*

#### **5.10.6.4 Operational Impacts**

Project operations would consist of various mixed-use, light-industrial, residential, commercial, and hotel uses as well as other Action Sports, Tourism, Commercial and Recreation uses generally consistent with adjacent land uses, as specified in the ELSPA No. 11, in terms of potential vibration impacts. No heavy machinery or equipment would be operated that could lead to excessive groundborne vibration levels. **Therefore, no impacts would occur with implementation of the proposed Project and no mitigation is required.**

**Threshold NOI-E** *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 NOI-F** *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?*

#### **5.10.6.5 Construction Impacts**

Please refer to Section 5.10.6.1 for a discussion of construction impacts.

#### **5.10.6.6 Long-Term Operational Impacts**

Skylark Airport currently generates noise from landing and take-off activity of private planes; and would continue to do so at the same location or at a new location if relocated within the proposed Airport Overlay shown on Figure 3-4, Proposed Land Use Plan. Relocation of the airport would not constitute a substantial change in physical location or operational intensity, as the Airport Overlay would retain the Airport within proposed Planning Area 3 and because facility operations are expected to remain consistent with current operations; however, relocation of the Skylark Airport or the siting of new development near the existing airport should consider the noise contour of the facility as described in Section 5.10.3 and as shown in Figure 5.10-4. With implementation of mitigation measure **MM NOI-2** through **MM NOI-5**, a setback at a minimum distance of 500 feet from runway centerline would be maintained from sensitive land uses, or other appropriate setback otherwise determined through additional study of site-specific conditions demonstrating City noise standards would not be violated. **Implementation MM NOI-2 through MM NOI-5 would ensure potential impacts are less than significant.**

**Impact NOI-7** *Relocation of the Skylark Airport or the siting of new development near the existing Airport could expose people to excessive noise levels if proper setback distances from runway centerline (estimated at 500 feet minimum) are not maintained or if additional study and or measures such as sound shielding features cannot demonstrate compliance with City noise standards.*

### 5.10.7 General Plan Consistency Impacts

The City of Lake Elsinore Community Development Element includes various policies related to noise. The applicable policies within this section and project analysis are discussed in Table 5.10-21.

**Table 5.10-21 Noise General Plan Consistency Analysis**

| Goal/Policy # | Goal/Policy Text                                                                                                                                                                                                                                                          | Consistency Analysis                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Goal PS 7     | Maintain an environment for all City residents and visitors free of unhealthy, obtrusive, or otherwise excessive noise conditions.                                                                                                                                        | <b>CONSISTENT.</b> Potential noise impacts are evaluated in the Project's EIR and noise study. Proposed uses include noise-generating recreational events which may be significant noise producers. Such uses are proposed to be located away from noise-sensitive receptors. Residential areas shall be protected by appropriate noise mitigation measures to ensure noise standards are not exceeded, including open space buffers. |
| PS 7.1        | Apply the noise standards set forth in the Lake Elsinore Land Use Noise Compatibility Matrix (General Plan Table 3-1) and Interior and Exterior Noise Standards (General Plan Table 3-2) when considering all new development and redevelopment proposed within the City. | <b>CONSISTENT.</b> Potential noise impacts are evaluated in the Project's EIR and noise study. The noise study and EIR discuss the Lake Elsinore Land Use Noise Compatibility Matrix to determine if the Project is consistent with applicable noise standards.                                                                                                                                                                       |
| PS 7.2        | Require that mixed-use structures and areas be designed to prevent transfer of noise and vibration from commercial areas to residential areas.                                                                                                                            | <b>CONSISTENT.</b> See consistency discussions for Goal PS 7. Mixed use development standards are in place to ensure that noise and vibration impacts are minimized.                                                                                                                                                                                                                                                                  |
| PS 7.4        | Consider estimated roadway noise contours based upon General Plan Figure 3.6 Noise Contours, when making land use decisions along busy roadways throughout the City.                                                                                                      | <b>CONSISTENT.</b> See consistency discussion for Goal PS 7. The EIR and noise study evaluate noise contours along roadways in determining potential noise impacts related to the Project and necessary mitigation measures.                                                                                                                                                                                                          |

Based on the analysis provided in Table 5.10-21, ***the Project is consistent with the General Plan and no additional mitigation is required.***

## 5.10.8 Cumulative Impacts

### 5.10.8.1 Construction Noise

Since specific timing and locations of future implementing development projects are not known at this time, it is not feasible to definitively ascertain the level of temporary cumulative impacts from future construction at the Project site; however, through proper planning of future construction elements, the City has the ability to ensure that concurrent activities would not be concentrated in the same areas in a way that could compromise the noise environment at noise-sensitive locations. Therefore, construction projects would be managed and coordinated in a way to avoid cumulative noise impacts from such activities through implementation of mitigation measure **MM NOI-1** through **MM NOI-2**; however, it cannot be guaranteed at this time that such measures would reduce impacts to less than significant levels. Therefore, impacts would be potentially significant and unavoidable. This analysis does not represent a new impact or require additional mitigation other than those described in Section 5.10.6 for **Impact NOI-1** and **Impact NOI-2**; rather, it discloses that ***overlapping project development would also require mitigation and/or potentially have a temporary significant impact with mitigation.***

### 5.10.8.2 Operational Noise

As analyzed and disclosed in Section 5.10.6 above, the long-term, permanent sources of noise from the Project would predominantly be from additional vehicular traffic, resulting from future development of the Project site. Additional cumulative sources would be the collective operational noise of land uses proposed in Planning Areas 2, 3, 6 and 8 as also analyzed and disclosed in Section 5.10.6. Therefore, the analysis is inherently a cumulative evaluation of future traffic and operational noise in the Project vicinity and would result in impacts identified above as **Impact NOI-3** and **Impact NOI-4** for traffic noise and **Impact NOI-5** for development-related noise. This analysis discloses that ***overlapping project development would also require mitigation and have a significant unavoidable impact with implementation of mitigation measure MM NOI-2 through MM NOI-5.***

## 5.10.9 Impacts and Mitigation Measures

**Impact NOI-1** *Temporary exposure of persons to noise levels in excess of City standards and/or a potential substantial temporary increase in ambient noise levels may occur during future project construction activities within the East Lake Specific Plan, resulting in a temporary significant noise impact.*

**MM NOI-1** Prior to issuance of a grading permit or building permit for a future implementing development project in the East Lake Specific Plan, the applicant will submit to the City for review and approval, a Construction Management Plan (CMP) that will include measures to reduce construction-related noise. The CMP shall include:

- a. Estimated number of working days, days of the week to be worked, and daily working hours for site preparation, grading and construction activities consistent with the Lake Elsinore Municipal Code. Additional allowable working time restrictions may be established by the City if activities will occur within 200 feet of

sensitive receptors, last more than 10 working days, and/or be noise intensive; as deemed appropriate by the City Engineer's review of the CMP.

- b. Require all fixed and mobile construction equipment be checked, by the contractor or designee, and logged weekly to verify proper tuning and operating mufflers.
- c. Require all stationary noise generating construction equipment, construction staging areas, and noise intensive activities such as metal stud and rebar cutting be located as far as practical, and shielded if possible, from existing residences, indicating such locations and shielding on the construction plans.
- d. If impulsive noise generation (e.g. pile driving or jack-hammering) is necessary within 200 feet of noise-sensitive users, a Project-specific noise study shall be required to determine additional measures such as special activity scheduling and/or need for the erection of temporary sound barriers to reduce impacts.
- e. Posted information onsite for contact in case of emergency or complaint.
- f. If a hauling permit is required, the contractor will verify with the City prior to hauling activities that no conflict with other projects utilizing portions of the same route, also for hauling activities under another hauling permit, will occur.

**Impact NOI-2** *Temporary exposure of persons to noise levels in excess of City standards and/or a potential substantial temporary increase in ambient noise levels may occur during future project construction hauling and material delivery activities within the East Lake Specific Plan, potentially resulting in a temporary significant noise impact.*

See mitigation measure **MM NOI-1.e** above.

**Impact NOI-3** *Future implementing development projects within the East Lake Specific Plan would generate additional traffic and associated traffic noise; potentially resulting in a 3 dB noise increase in areas that exceed General Plan noise standards or result in a 5 dB noise increase in other areas.*

**MM NOI-2** As part of an application for a future implementing development project within the East Lake Specific Plan, a detailed acoustical study shall be submitted that evaluates existing and projected noise levels affecting the implementing development proposal. Design features that may be incorporated within an implementing project may include setbacks from the roadway or noise attenuation that will reduce noise levels to acceptable standards. An exterior level of 60 dB CNEL in usable outdoor space shall be the noise exposure goal for such maximally noise-sensitive uses. If such a level is not attainable with reasonably available noise control measures, the General Plan finds levels up to 65 dB CNEL are acceptable. In the event that patios and balconies are determined to occur within the 65 dBA noise contour, noise attenuation shall be required to reduce noise levels to 65 dBA CNEL or lower. This may include the use of architectural treatments, barriers, or other noise attenuating measures. Project specific measures shall provide sound level reductions so that future uses within the Project site are consistent with the

CNEL levels identified in the Lake Elsinore General Plan and Lake Elsinore Municipal Code.

**MM NOI-3** Prior to the approval of each future implementing development project within the East Lake Specific Plan, the applicant/developer shall submit a detailed acoustical study demonstrating that all structures will meet applicable City interior noise levels and exterior living area noise levels, in accordance with applicable noise standards and zoning regulations.

- a. The study shall be prepared by a City-approved acoustical expert, to the satisfaction of the Community Development Director; and,
- b. The study shall document projected ultimate noise exposure for interior office, retail and residential space and shall demonstrate that the project specific design plans have incorporated adequate sound attenuation measures to achieve the applicable noise standards.

**MM NOI-4** Prior to the issuance of any building permits for future implementing residential development projects, the applicant shall incorporate appropriate buffering and/or sound attenuation in the building siting and designs to limit potential incompatibilities with the nearby land uses. Noise levels for the residential units shall be reduced to 45 dBA for interior noise levels.

**Impact NOI-4** *A potentially significant impact would occur if future noise sensitive land uses are sited within the 60 dB Ldn noise contour distances described in Table 5.10-20. A significant unavoidable impact would occur to existing sensitive uses within these noise contour distances if they remain during buildout of the East Lake Specific Plan.*

See mitigation measure **MM NOI-2** through **MM NOI-4** above.

**Impact NOI-5** *Action Sports 1 and 2 racing facilities in Planning Area 6 and future Active Recreation 1 and 2 facilities in Planning Areas 2, 3 and/or 6 would increase ambient noise levels by 3 dB in areas that exceed General Plan noise standards and/or result in a 5 dB increase in other areas; thus, exceeding significance thresholds and potentially impacting sensitive uses.*

See mitigation measure **MM NOI-2** through **MM NOI-4** above and **MM NOI-5** below.

**MM NOI-5** Prior to the issuance of building permits for future implementing commercial development projects, the applicant shall incorporate measures to minimize hours of operation and reduce exterior noise levels on on-offsite sensitive receptors resulting from on-site noise sources, such as Action Sports 1 and 2 operations, Active Recreation 1 and 2 operations, loading docks, speakerphones, music/live entertainment to 65 dBA CNEL from 10 p.m. to 7 a.m. These measures shall be implemented to the satisfaction of

the Community Development Director or modified for special events with issuance of a special event permit.

**Impact NOI-6** *The use of heavy construction equipment (e.g. large earth movers, bulldozers and pile-drivers) within 100 feet or less of sensitive buildings could produce ground vibrations that could cause annoyance to people or damage to those existing structures.*

**MM NOI-6** For future implementing development projects in the East Lake Specific Plan with the potential to generate construction-related groundborne vibration (e.g., use of pile drivers, rock drills, and pavement breakers) within 100 feet or less of sensitive buildings, the City shall require the project applicant to submit a construction-related vibration avoidance, minimization and mitigation plan to the City prior to issuance of a demolition or grading permit. The mitigation plan shall depict the location of the construction equipment and activities and how the vibration from equipment and activities would be mitigated to minimize human annoyance and avoid damage to buildings. The City shall require binding implementation measures for the approved plan.

**Impact NOI-7** *Relocation of the Skylark Airport or the siting of new development near the existing Airport could expose people to excessive noise levels if proper setback distances from runway centerline (estimated at 500 feet minimum) are not maintained or if additional study and or measures such as sound shielding features cannot demonstrate compliance with City noise standards.*

See mitigation measure **MM NOI-2** through **MM NOI-5** above.

#### 5.10.10 Level of Significance after Mitigation

Construction of future development projects and various infrastructure improvements within the Project site would result in generation of noise due to use of heavy machinery and potential increases in traffic from construction trucks and employee vehicles. Mitigation measure **MM NOI-1** would require each future implementing development project to reduce and/or minimize such temporary construction noise impacts through implementation of noise reduction measures; however, ***it cannot be guaranteed at this time that such measures would reduce impacts to less than significant. Therefore, impacts would be potentially significant and unavoidable.***

Measures to reduce impacts related to future traffic noise and future development may include use of site design, setbacks, placement of sound walls or other shielding features to reduce impacts to below significant with implementation of mitigation measure **MM NOI-2** through **MM NOI-5**. ***However, it cannot be guaranteed at this time that such measures would reduce traffic noise impacts or operational noise impacts on existing and/or future sensitive uses to meet City standards. Therefore, impacts would be potentially significant and unavoidable.***

***Implementation of MM NOI-4 would reduce potential construction-related vibration impacts on sensitive buildings to less than significant levels.***

***Implementation of MM NOI-2 through MM NOI-5 would ensure potential noise impacts with siting new development near the existing Skylark Airport and/or relocating the Skylark Airport within the Airport Overlay are less than significant.***