# 4.6 Noise

This section of the Draft EIR ("Draft EIR"; "DEIR") describes the existing visual features and characteristics of the Planning Area explains terminology commonly used to describe noise and provides a discussion of the existing noise environment and common noise sources within the Planning Area. Short-term construction and long-term operational noise impacts associated with implementation of the project are also analyzed.

## 4.6.1 ENVIRONMENTAL SETTING

### TECHNICAL BACKGROUND

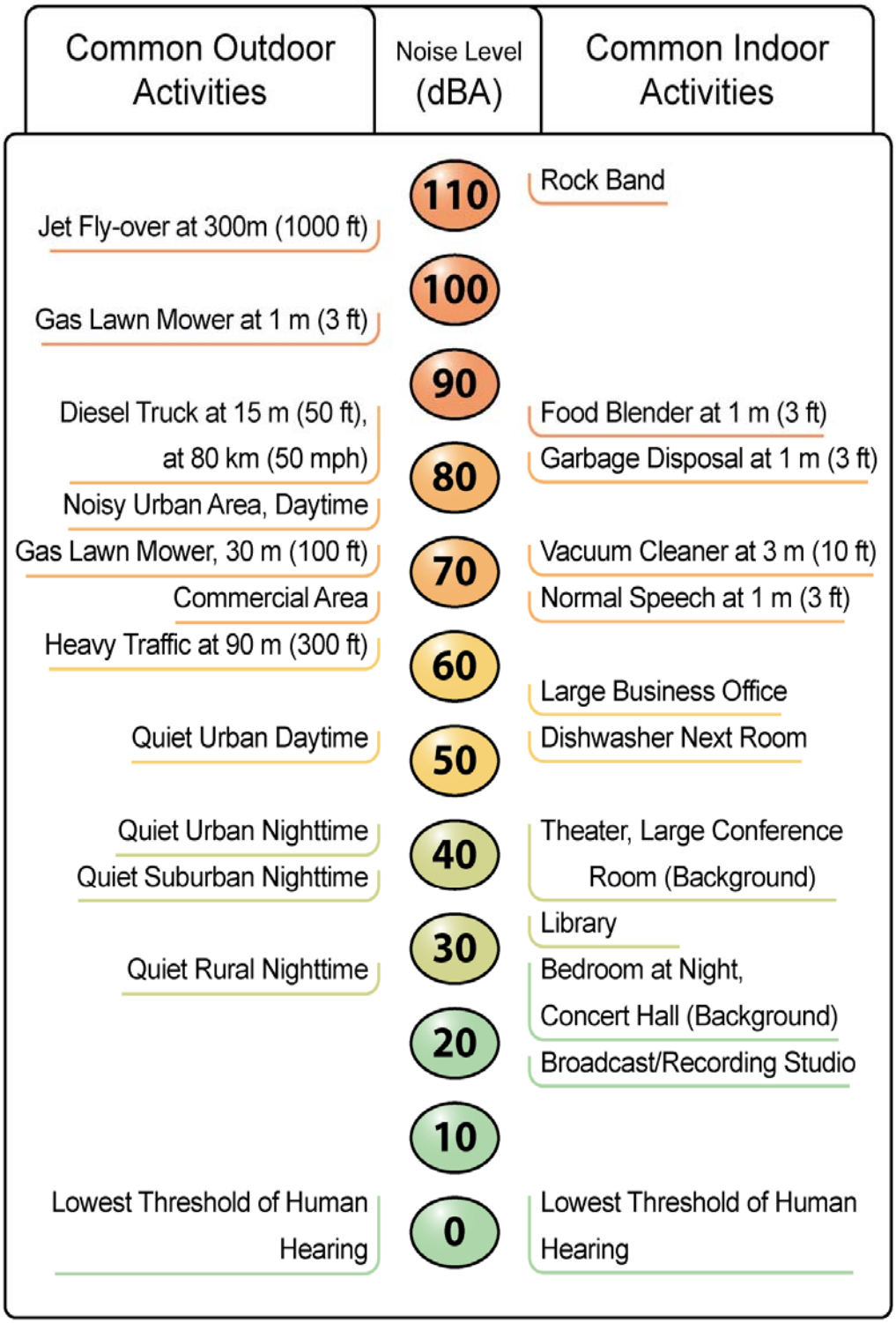
#### ACOUSTIC FUNDAMENTALS

Noise is generally defined as an audible sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration propagated through the surrounding air molecules. Sound levels are described in terms of both amplitude and frequency. Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude often referred to as "volume" is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. Frequency is often referred to as "pitch." The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower, and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as "A-weighted decibels" (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA (U.S. EPA, 1971).

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Common community noise sources and associated noise levels, in dBA, are depicted in **Figure 4.6-1**. Noise generated by mobile sources typically attenuates at a rate between 3.0 to 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver (also known as the receptor). Mobile transportation sources, such as highways, and hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance from the source. Noise generated by stationary sources typically attenuates at a rate of approximately 6.0 to 7.5 dBA per doubling of distance from the source (USEPA, 1971).

**FIGURE 4.6-1**
**TYPICAL COMMUNITY NOISE LEVELS**




*Source: Caltrans, 2008*

## NOISE DESCRIPTORS

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are Energy Equivalent Noise Level ($L_{eq}$), Day-Night Average Noise Level ($L_{dn}$), and Community Noise Equivalent Level (CNEL). The energy-equivalent noise level, $L_{eq}$, is a measure of the average energy content (intensity) of noise over any given period. The $L_{eq}$ metric is commonly applied to measure of the impact of a series of events during a given time period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, $L_{dn}$, is the 24-hour average of the noise intensity, with a 10-dBA "penalty" added for nighttime noise (10:00 p.m. to 7:00 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the Community Noise Equivalent Level, is similar to $L_{dn}$ but adds an additional 5-dBA penalty for evening noise (7:00 p.m. to 10:00 p.m.) Another descriptor that is commonly used is the sound exposure level (SEL). The SEL is a composite metric that represents both the intensity of a sound and its duration. Individual time-varying noise events (e.g., aircraft overflights) have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. SEL provides a measure of the net impact of the entire acoustic event, but it does not directly represent the sound level heard at any given time. Noise analyses may also depend on measurements of $L_{max}$, the maximum instantaneous noise level during a specific period of time, and $L_{min}$, the minimum instantaneous noise level during a specific period. Common noise level descriptors are summarized in **Table 4.6-1**.

**TABLE 4.6-1**
**COMMON ACOUSTICAL DESCRIPTORS**

| Descriptor | Definition |
|---|---|
| Energy Equivalent Noise Level ($L_{eq}$) | The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value (in dBA) is calculated. |
| Minimum Noise Level ($L_{min}$) | The lowest sound level measured during a single event (e.g., an aircraft overflight) in which the sound level changes value with time. |
| Maximum Noise Level ($L_{max}$) | The highest sound level measured during a single event in which the sound level changes value with time. |
| Day-Night Average Noise Level (DNL or $L_{dn}$) | The 24-hour $L_{eq}$ with a 10 dBA "penalty" for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours to account for increases sensitivity to noise during these hours. |
| Community Noise Equivalent Level (CNEL) | The CNEL is similar to the $L_{dn}$ described above, but with an additional 5 dBA "penalty" added to noise events that occur between the hours of 7:00 p.m. to 10:00 p.m. The calculated CNEL is typically approximately 0.5 dBA higher than the calculated $L_{dn}$. |
| Sound Exposure Level (SEL) | SEL is a logarithmic measure of the total acoustic energy transmitted to the listener during the event. Mathematically, it represents the sound level of a constant sound that would, in one second, generate the same acoustic energy as the actual time-varying noise event. |

*Source: USEPA, 1971; Caltrans, 2002a*

## HUMAN RESPONSE TO NOISE

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: referred to as the "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. With regard to human response, the following relationships are often relied upon when evaluating noise levels and potential impacts:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

## NOISE REDUCTION

Various methods can be employed to reduce noise levels, including enclosures, barriers, and sound-dampening materials. The methods employed are dependent on various factors, including source and receptor characteristics, as well as environmental conditions. With regard to typical community noise sources, noise-reduction techniques typically focus on the isolation or shielding of the noise source from nearby noise-sensitive receptors. The more common methods include the use of buffers, enclosures, and barriers. In general, these techniques contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise but are less effective than solid barriers. Changes in design specifications and use of equipment noise control devices (e.g., mufflers and silencers) are also commonly employed to reduce stationary-source (i.e., non-transportation) noise levels. Additional noise control techniques commonly used for transportation noise sources include traffic control, such as prohibiting heavy-duty trucks and reducing speed limits along primarily affected corridors. However, an approximate 20 mile-per-hour reduction in speed would typically be required to achieve a noticeable decrease in noise levels. In some instances, the use of noise-reducing pavements, such as rubberized asphalt, has also been used to reduce traffic noise.

## 4.6.2 EXISTING NOISE ENVIRONMENT

### NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. School classrooms, places of assembly, hotels, libraries, convalescent homes, churches, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

### AMBIENT NOISE ENVIRONMENT

Several sources of noise that could affect local residents were identified within and near the City of Ione. These sources include noise generated from non-transportation sources (e.g., commercial and industrial uses) and vehicle traffic on area roadways and highways. Ambient noise measurements were conducted for the purpose of documenting and measuring the existing noise environment in various areas of the city. Noise measurement surveys were conducted on January 21, 2009. All noise measurements were conducted using a Larson Davis Laboratories, Model 820, Type I sound-level meter placed at a height of approximately 4.5 feet above the ground surface. Ambient noise measurement locations and corresponding measured values are summarized in **Table 4.6-2**. The noise measurement locations are depicted in **Figure 4.6-2**. The noise levels presented in **Table 4.6-2** are generally representative of ambient noise levels throughout the community. As depicted, ambient noise levels within the city can vary, with daytime noise levels generally ranging from the mid-40's to the mid-60's. Nighttime noise levels are typically 5 to 10 dBA less than daytime noise levels. Ambient noise levels within the City are largely influenced by vehicle traffic on major roadways, including State Route (SR) 124 and SR 104.

**TABLE 4.6-2**
**AMBIENT NOISE MEASUREMENT SURVEYS**

| Location | | Monitoring Period | Noise Level (dBA) | |
|---|---|---|---|---|
| | | Time | $L_{eq}$ | $L_{max}$ |
| 1 | State Route 124, near Raymond Drive | 9:00-9:10 | 63.5 | 75.9 |
| 2 | State Route 104 at Wilda Court | 9:30-9:40 | 63.3 | 72.0 |
| 3 | Shakeley Lane at Edgebrook Drive | 11:30-11:40 | 52.5 | 65.9 |
| 4 | Castle Oaks at Shakeley Lane | 10:30-10:45 | 45.6 | 62.0 |
| 5 | State Route 104 at Castle Oaks | 11:00-11:10 | 65.6 | 78.5 |
| 6 | Ione Junior High School, South Mill Street | 10:00-10:10 | 48.7 | 50.5 |
| 7 | Manor Drive at Dove Lane | 11:55-12:10 | 48.2 | 68.2 |
| 8 | West Marlette Street at Five Mile Dr./Old Stockton Rd. | 12:20-12:30 | 45.6 | 55.3 |
| 9 | State Route 124 near Buena Vista Road | 12:45-12:55 | 65.4 | 75.6 |
| 10 | Church Street at West Market Street | 13:20-13:35 | 63.7 | 76.4 |
| 11 | State Route 104 at Foothill Boulevard | 14:20-14:30 | 66.4 | 75.1 |
| 12 | State Route 104 at Five Mile Drive | 15:05-15:20 | 67.9 | 78.9 |

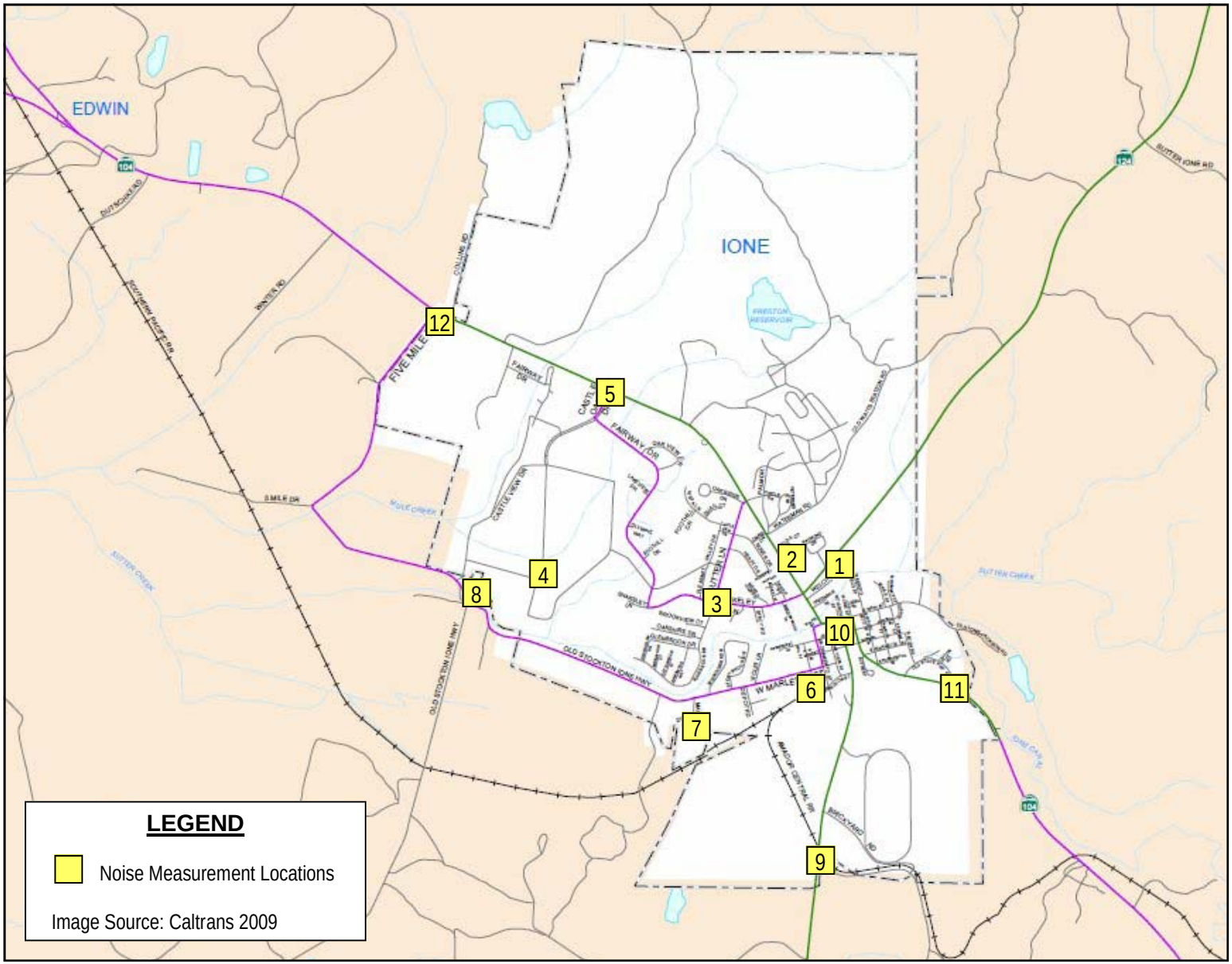
*Notes: Noise measurements were conducted on January 21, 2009. Locations correspond to those depicted in* ***Figure 4.6-2****.*

*dBA = A-weighted Decibel Scale. (Frequency weighting that best approximates the response of the human ear.)*

*Leq = Equivalent (Energy-Average) Noise Level*

*Lmax = Maximum Noise Level*

*Source: AMBIENT, 2009*




City of Ione
Planning Department

Figure 4.6-2
Noise Measurement Locations

## NOISE SOURCES

Major noise sources located within the city consist of both non-transportation and transportation sources. Noise levels associated with major noise sources are discussed in more detail below.

### Non-Transportation Sources

From a land use planning perspective, non-transportation (i.e., stationary) noise source control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas; and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying local noise performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses near noise-producing facilities include mitigation measures to ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

Noise levels associated with non-transportation noise sources can vary depending on various factors, including site conditions, equipment operated, and the specific activities being conducted. As a result, actual noise levels at nearby noise-sensitive receptors will likely vary depending on the above-mentioned conditions and other influences, such as location, distance from source, shielding provided by intervening terrain and structures, and the rate at which noise decreases with increased distance from the source, referred to as noise attenuation. For these reasons, noise generated by such uses and impacts to nearby noise-sensitive land uses should be evaluated on a project-by-project and site-specific basis.

Within the City of Ione, major non-transportation noise sources consist predominantly of commercial, public, and recreational land uses. Industrial uses, such as nearby surface mining activities located outside the city, may also affect community residents. Many industrial processes produce noise, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (i.e., regulations of the Occupational Safety and Health Administration of the U.S. Department of Labor [OSHA] and the California Division of Occupational Safety and Health [Cal-OSHA]). Exterior noise levels that affect neighboring parcels are typically subject to local standards. Commercial, recreational, and public facility activities can also produce noise that may affect adjacent noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources, but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. Noise levels associated with some of the more common non-transportation noise sources that could affect community residents are discussed in more detail, as follows:

#### Surface Mining Facilities

Clay, coal, sand, and gravel mines are located in the Ione Planning Area, as the area is rich in both metallic and non-metallic mineral resources. There are various mining and processing facilities within the Planning Area, including the Uniman Mines, located approximately 0.5 mile south of Ione, and the ISP Granules Products facility, located approximately 1.6 miles west of Ione.

Noise sources associated with quarry and aggregate supply operations typically include mining (surface grading, clearing, excavating, mining, and material loading), processing (washers, crushers, shakers, and conveyors), and reclamation operations. Truck traffic to and from the facilities can also influence overall noise levels. Noise generation varies by size, type of equipment,

and hours of operation, Noise levels commonly associated with on-site processing activities can reach levels of approximately 85 dBA $L_{eq}$ at 100 feet. Based on this noise level and assuming an average noise attenuation rate of 6 dB per doubling of distance from the source, the projected 60 dBA $L_{eq}$ noise contour could extend to a distance of approximately 1,600 feet from the source. This projected noise contour is based on the highest anticipated operational noise levels and does not take into account reductions in noise levels caused by intervening physical features or terrain, changes in operational characteristics, or meteorological conditions. As a result, actual noise levels at nearby noise-sensitive receptors will likely vary depending on the above-mentioned influences and proximity of the receptor to area roadways or other major noise sources.

### Service Commercial and Light Industrial Uses

Within the City of Ione, service commercial and light industrial uses are predominantly located along SR 104 and SR 124 corridors. Noise sources commonly associated with such uses include truck traffic, loading and unloading activities, and heavy-equipment operation, as well as equipment maintenance and repair activities.

Noise levels are often loudest during periods when heavy-duty trucks and off-road equipment are being operated in exterior areas. During periods when heavy-duty equipment and vehicles are being operated, noise levels can reach approximately 80 dBA $L_{eq}$ at 50 feet. Based on this noise level, the predicted 60 dBA $L_{eq}$ noise contour for industrial uses involving the use of heavy equipment would extend to approximately 525 feet.

Typical automotive and equipment maintenance and repair activities often include the use of pneumatic tools, air compressors, and power generators. Other equipment operations, such as the use of power hand tools (e.g., sanders, drills, grinders, pneumatic wrenches), typically generate a lesser degree of noise. The use of air compressors, power generators, and pneumatic tools can generate noise levels of up to approximately 85 dBA at 50 feet. Noise levels generated by the use of hand-held tools, such as sanders, drills, and grinders, typically average between 63 and 87 dBA at a distance of 3 feet from the tools. Simultaneous use of multiple hand tools, such as grinders being used on metal, can generate levels of 87 to 97 dBA $L_{eq}$ at 3 feet (USEPA, 1971). Noise levels associated with these facilities would be dependent on the specific activities performed and source/facility characteristics. Assuming an exterior operational noise level of 97 dBA $L_{eq}$ at 3 feet, the 60 dBA $L_{eq}$ noise contour would extend to a distance of approximately 225 feet.

### Parks, Schools, and Recreational Uses

There are several parks and schools throughout the Planning Area. The City of Ione's recreational facilities include four small parks with benches and historical exhibits and one major recreation facility, Howard Park. The small parks include Oakridge Park, Train Park at City Hall, and Pioneer Park. Howard Park includes soccer fields, softball, baseball and little league diamonds, half-court basketball, tennis courts, a bocce ball court, a playground, and a roller hockey area. In addition, a variety of equestrian facilities are located at the park including stables, corrals, an arena, and a racetrack. The Castle Oaks Golf Course provides an 18-hole championship golf course.

Noise sources generally associated with recreational uses typically include the sound of children's voices, play-area activities (e.g., impulsive sound caused by contact between basketballs and hard-surface courts), mechanical building equipment (e.g., heating, ventilation, and air conditioning systems, and boilers), landscape maintenance equipment, and exterior intercom/speaker systems. School playing field activities tend to generate more noise than

those of neighborhood parks, as the intensity of school playground usage tends to be higher. At a distance of 100 feet from an elementary school playground, average noise levels are typically less than 60 dBA $L_{eq}$. At organized events such as high school football games with large crowds and public address systems, the noise generation is often significantly higher. For stadiums that draw large spectator crowds and are equipped with amplified sound systems, predicted exterior noise levels can range from approximately 63 to 78 dBA $L_{eq}$ at approximately 250 feet during recreational events. Noise levels associated with such events can vary widely depending on various factors, including the type and number of outdoor events being conducted, whether a public address system is used, and the number of people in attendance.

### Mule Creek State Prison

The Mule Creek State Prison is a prison housing adult inmates. The prison is located in the northern portion of the city, away from the general community, and houses almost 4,000 inmates. Noise issues include recreation noise and noise from a public address system. Noise levels associated with this land use would be similar to those previously discussed for parks, schools, and recreational uses.

### Preston Youth Correctional Facility

The Preston Youth Correctional Facility is a juvenile prison housing male wards. The prison is located at 201 Waterman Road, within the city limits just north of downtown. Noise issues include recreation noise and noise from a public address system. Noise levels associated with this land use would be similar to those previously discussed for parks, schools, and recreational uses.

### CAL FIRE Academy

The California Department of Forestry and Fire Protection's (CAL FIRE) Academy, located at 4501 State Route 104, provides training in fire protection, fire prevention, law enforcement, administration, resource management, and fire crew management. Potential noise issues include the occasional use of helicopters, off-road vehicles, weapons firing range, and other activities during on-site training activities. Noise associated with these sources typically occurs on an intermittent basis, predominantly during the daytime hours, and can vary depending on the activities being conducted. Helicopter use at the facility is associated with personnel transport to and from the facility and/or prisoner transport for the adjacent prison facilities. Helicopter flights to and from the facility typically average fewer than 10 flights per year. For this reason, the facility does not have a designated helicopter landing facility. Based on the limited number of flights to and from the facility, the projected 60 dBA CNEL noise contour associated with onsite helicopter operations would not extend beyond the facility boundary. Off-road vehicle use and onsite weapons training can generate intermittent noise levels that may be detectable at nearby land uses. However, given that such noise events are intermittent and of short duration and given the distance to nearby offsite receptors, resultant noise levels at nearby offsite land uses would not be anticipated to contribute substantially to average hourly or average daily ambient noise levels and would be largely masked by traffic noise emanating from area roadways.

### Construction Activities

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Individual construction equipment can generate noise levels

of up to approximately 89 dBA $L_{eq}$ at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Although noise ranges were found to be similar for all construction phases, the building construction phase tended to be less noisy (i.e., 79 dBA to 88 dBA $L_{eq}$ at 50 feet), when compared to the initial site preparation and grading phases (USEPA, 1971).

### Transportation Sources

#### Union Pacific Railroad

The Union Pacific (UP) Railroad runs along the southern boundary of the City of Ione. However, within the City of Ione, rail lines are currently inactive. Within the Planning Area, UP Railroad (UPRR) currently operates approximately two trains weekly for the transport of products to and from the ISP Granule Products facility from the UPRR main line located near Galt. There are currently no hourly restrictions pertaining to freight transport along this railroad corridor. UP freight trains are estimated to travel at speeds of approximately 15 to 25 miles per hour (mph). Average train lengths can vary, depending on demand, but typically average up to approximately 15 railcars (Smith, 2009). The segment between this facility and Ione is currently not active. However, the segment extending westward toward Galt is active and was modeled given it is within the planning area.

The Federal Transit Administration's (FTA's) Transit Noise and Vibration Impact Assessment Guidelines (FTA, 2006) was used for the calculation of wayside train noise levels, based on the above-discussed operations. Predicted wayside noise levels are summarized in **Table 4.6-3**. It is important to note that projected noise levels do not include shielding or reflection of noise from intervening terrain or structures. In addition, actual train noise levels will vary depending on various factors, such as train speed, the number of engines used, track conditions (e.g., welded vs. jointed), and the condition of the train wheels. Additional factors, such as the sounding of train horns, as well as the operation of roadside signaling devices, can also contribute to overall noise levels. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts.

**TABLE 4.6-3**
**PREDICTED RAILROAD NOISE LEVELS**

| Railroad Corridor | Wayside Noise Level at 50 feet from Track Centerline (dBA CNEL) | | Distance from Track Centerline to CNEL Noise Contour (feet) | | | |
|---|---|---|---|---|---|---|
| | Without Horns Sounding | With Horns Sounding | Without Horns Sounding | | With Horns Sounding | |
| | | | 60 dBA | 65 dBA | 60 dBA | 65 dBA |
| UPRR, Between ISP Granules Products, Inc. and Galt | 58 | 72 | 40 | 18 | 340 | 160 |

*Notes: Noise levels were calculated based on methodology obtained from the Federal Transit Administration's Transit Noise and Vibration Impact Assessment Guidelines (FTA, 2006.) Assumes two freight trains, distributed equally over a 24-hour period. The sounding of locomotive horns typically occurs within distances of approximately 1,000 feet of at-grade crossings. Noise contours do not include shielding due to intervening terrain or structures.*

*Source: AMBIENT, 2009*

Roadway Traffic

Major roadways within the city include SR 104, SR 124, and other major local roadways. State Routes 104 and 124 are routed through the downtown area of Ione. The FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) was used to predict traffic noise levels along major area roadways. The FHWA modeling was based upon the CALVENO noise emission factors for automobiles and medium and heavy-duty trucks. Input data used in the model included average daily traffic (ADT) volumes, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. Traffic volumes were derived from the traffic analysis prepared for this project (the reader is referred to Section 4.4, Traffic and Circulation for further information and analysis on the traffic analysis conducted for the proposed project). Vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages for major highways obtained from the California Department of Transportation (Caltrans, 2007).

Predicted traffic noise levels for roadway segments within the city, including distances to the predicted 60, 65, and 70-dBA $L_{dn}$/CNEL noise contours, are summarized in **Table 4.6-4**. Predicted noise contours do not include shielding or reflection of noise due to intervening terrain or structures. As a result, predicted noise contours should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts.

**TABLE 4.6-4**
**EXISTING TRAFFIC NOISE LEVELS**

| Roadway Segment | ADT | CNEL at 50 Feet from Near Travel-lane Centerline | Distance (feet) from Roadway Centerline to CNEL Contour | | |
|---|---|---|---|---|---|
| | | | 70 | 65 | 60 |
| State Route 104, Ione-Michigan Bar Road to Five Mile Drive | 3,900 | 67.18 | -- | 78 | 168 |
| State Route 104, Five Mile Drive to Sutter Lane | 4,400 | 65.88 | -- | 64 | 138 |
| State Route 104, Sutter Lane to SR 124 | 8,200 | 66.41 | -- | 69 | 149 |
| State Route 104/SR 124, Shakeley Lane to S. Church Street | 10,300 | 63.56 | -- | -- | 96 |
| State Route 124, SR 124 to Brickyard Road | 4,000 | 59.50 | -- | -- | 52 |
| State Route 124, Brickyard Road to Buena Vista Road | 4,000 | 64.68 | -- | 53 | 114 |
| State Route 124, east of SR 104 | 2,400 | 59.10 | -- | -- | -- |
| State Route 104, SR 124 to Foothill Boulevard | 4,900 | 64.76 | -- | 54 | 116 |
| Marlette Street, Old Stockton Road to Mills Street | 2,504 | 54.71 | -- | -- | -- |
| Five Mile Drive, SR 104 to Old Stockton Road | 266 | 48.44 | -- | -- | -- |
| Old Stockton Road, south of Marlette Street/Five Mile Drive | 291 | 51.52 | -- | -- | -- |
| Sutter Lane, SR 104 to Shakeley Lane | 570 | 48.28 | -- | -- | -- |
| Shakeley Lane, Sutter Lane to SR 104/SR 124 | 2,841 | 55.26 | -- | -- | -- |
| Waterman Road, north of SR 104 | 1,000 | 50.73 | -- | -- | -- |

*Noise levels/contours were calculated using the FHWA roadway noise model based on Calveno vehicle reference noise levels and traffic data obtained from the traffic analysis prepared for this project. Refer to **Appendix A** for modeling output files.*
*Contours are within roadway right-of-way*
*Source: AMBIENT, 2009*

## 4.6.3 REGULATORY FRAMEWORK

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Those regulations most applicable to the community are summarized below.

### FEDERAL

#### U.S. Environmental Protection Agency

In 1974, the USEPA Office of Noise Abatement and Control published a report entitled Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Although this document does not constitute USEPA regulations or standards, it is useful in identifying noise levels at which increased levels of annoyance would be anticipated. Based on an annual-average day-night noise level (expressed as $L_{dn}$ or DNL), the document states that "undue interference with activity and annoyance" will not occur if outdoor noise levels in residential areas are below 55 dBA $L_{dn}$ and indoor levels are below 45 dBA $L_{dn}$ (USEPA, 1974).

#### Federal Railroad Administration

The federal government, in response to safety concerns at grade crossings, enacted the Swift Rail Development Act of 1994. This act mandated that the Secretary of Transportation issue regulations requiring the use of locomotive horns at public grade crossings, but gave the agency the authority to make reasonable exceptions. On August 17, 2006, the Federal Railroad Administration adopted the Locomotive Horns at Highway-Rail Grade Crossings Rule, which addresses the use of locomotive horns at public road-rail grade crossings. Accordingly, locomotive horns must be sounded on approach and while entering public grade crossings, unless there is no significant risk of increased grade crossing collisions, the use of the locomotive horn is impractical, or where safety measures can be installed to fully compensate for the absence of the warning provided by the horn.

#### Department of Housing and Urban Development

The United States Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land uses are set forth in the Code of Federal Regulations, Title 24, Part 51, "Environmental Criteria and Standards." These guidelines identify a noise exposure of 65 dBA $L_{dn}$, or less, as acceptable. Noise levels of 65 to 75 dBA $L_{dn}$ are considered normally acceptable, provided appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Noise levels above 75 dBA $L_{dn}$ are considered unacceptable. The goal of the interior noise levels is 45 dBA $L_{dn}$. These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities (Caltrans, 2002a).

### STATE

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land use compatibility criteria.

### California Building Code

Title 24 of the California Code of Regulations contains standards for allowable interior noise levels associated with exterior noise sources (California Building Code, 1998 edition, Volume 1, Appendix Chapter 12, Section 1208A). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences. The standards state that the interior noise level attributable to exterior sources shall not exceed 45 dBA in any habitable room. Proposed residential structures to be located where the CNEL/$L_{dn}$ exceeds 60 dBA shall require an acoustical analysis showing that the proposed building design would achieve the prescribed allowable interior noise standard. Worst-case noise levels, either existing or future, shall be used as the basis for determining compliance with these standards (Caltrans, 2002a).

### State of California General Plan Guidelines

The State of California General Plan Guidelines (State of California 1998), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific noise environments. Based on these guidelines, residential uses, churches, libraries, and hospitals are normally unacceptable in areas exceeding 70 dBA CNEL and conditionally acceptable between 60 and 70 dBA CNEL. Professional and commercial office buildings are normally unacceptable in areas exceeding 75 dBA CNEL and conditionally acceptable between 67 and 77 dBA CNEL. However, the state stresses that these guidelines can be modified to reflect communities' sensitivities to noise. Adjustment factors may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

## 4.6.4 IMPACTS AND MITIGATION MEASURES

#### STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines Appendix G thresholds of significance. A noise impact is considered significant if implementation of the project would:

1) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies.

2) Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

3) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

4) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

5) Expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan area or, where such a plan has not been adopted, or within two miles of a public airport or a public use airport.

6) Expose people residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip.

## METHODOLOGY

A combination of use of existing literature and general application of accepted noise thresholds was used to determine the impact of ambient noise levels resulting from and on development within the Planning Area. Short-term and long-term impacts associated with transportation and non-transportation noise sources were qualitatively assessed based on potential increases in ambient noise levels anticipated to occur at noise-sensitive land uses. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108.) The FHWA modeling was based upon the Calveno noise-emission factors for automobiles and medium and heavy-duty trucks. Input data used in the model included average-daily traffic volumes, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, roadway widths, and ground elevation data. Traffic volumes were derived from the traffic analysis prepared for this project. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages for major highways obtained from the California Department of Transportation (Caltrans). For purposes of this analysis, significant increases in ambient noise levels would be defined as an increase of 3 dBA, or greater.

No private airstrips or public airports are located within two miles of the project area. As a result, exposure to aircraft noise is not discussed further in this report.

The City of Ione General Plan is intended to be a "self-mitigating" document, in that the General Plan policies are designed to mitigate or avoid impacts on the environment resulting from implementation of the proposed project. To that end, the relevant General Plan policies providing mitigation have been identified for each significant impact in this section. If the applicable General Plan policies were determined not to fully mitigate or avoid impacts, then additional mitigation measures have been provided. These additional mitigation measures have been written as policy statements that can be incorporated into the final General Plan. Each impact discussion includes a determination as to whether the impacts would be mitigated to a less than significant level or would remain significant and unavoidable after implementation of the updated General Plan policies.

## PROJECT IMPACTS AND MITIGATION MEASURES

### Exposure to Construction Noise

**Impact 4.6.1** Activities associated with construction resulting from the project could result in elevated noise levels at noise-sensitive land uses. Increases in ambient noise levels, particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption. This impact would be considered **less than significant**.

#### General Plan

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Although noise ranges were found to be similar for all

construction phases, the grading phase tends to involve the most equipment and resulted in slightly higher average-hourly noise levels. Typical noise levels for individual pieces of construction equipment are summarized in **Table 4.6-5**. As depicted, individual equipment noise levels typically range from approximately 74 to 89 dBA at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Depending on the activities performed and equipment usage requirements, combined average-hourly noise levels at construction sites typically range from approximately 65 to 91 dBA $L_{eq}$ at 50 feet (USEPA, 1971).

**TABLE 4.6-5**
**CONSTRUCTION EQUIPMENT NOISE**

| Equipment | Typical Noise Level (dBA) 50 Feet from Source |
|---|---|
| Roller | 74 |
| Concrete Vibrator, Pump, Saw | 76 |
| Backhoe | 80 |
| Generator, Air Compressor | 81 |
| Compactor, Concrete Pump | 82 |
| Crane, Mobile | 83 |
| Dozer, Grader, Loader, Concrete Mixer, Impact Wrench, Pneumatic Tool | 85 |
| Truck, Jack Hammer | 88 |
| Paver | 89 |

*Source: FTA, 2006*

Assuming a maximum construction noise level of 89 dBA $L_{eq}$ and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 1,500 feet of noise-sensitive receptors could reach levels of approximately 60 dBA $L_{eq}$. Activities occurring during the more noise-sensitive evening and nighttime hours may result in increased levels of annoyance and potential sleep disruption to occupants of nearby noise-sensitive land uses (e.g., residential dwellings, schools, hospitals).

Implementation of the proposed project would result in construction activities that could result in elevated noise levels at noise-sensitive land uses within the Planning Area, both within the existing city limits and outside the city limits.

*Areas Within Existing City Limits*

Implementation of the proposed General Plan update would allow for new infill development and redevelopment within the Ione city limits. In the downtown area, proposed General Plan policies would primarily provide for commercial, office, and public uses but would also provide the opportunity for a mixed land use category (Downtown Transition) that combines residential, commercial, and office uses. Outside of the downtown area, the proposed land use designations would primarily allow for low-density residential development and associated parks and recreation uses as well as clusters of higher-density residential uses and commercial and industrial uses.

Depending on distances from nearby noise-sensitive land uses, construction activities associated with infill and redevelopment within the Ione city limits may result in temporary and periodic increases in ambient noise levels at nearby receptors. Increases in ambient noise levels,

particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption to occupants of nearby dwellings. Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

*Areas Outside of Existing City Limits*

Implementation of the proposed General Plan update would potentially, following annexation to the city, allow new development to occur in the largely undeveloped areas of the Planning Area if these areas were ever annexed to the City. In particular, this could include future development of the Triangle Policy Area southeast of the city proposed for designation as a Special Planning Area (SPA), the Silva Policy Area located west of the city also proposed for designation as an SPA, and the State Route 124 Corridor Policy Area located northeast of the city proposed for designation as Low Density Residential (RL). In addition, areas northwest and south of the city are designated as Surface Mining (SM). The remaining areas outside the city limits are primarily proposed for designation as Open Space (OS) or General Agriculture (AG). These proposed designations would largely allow for a continuation of the existing uses and would not allow for significant development to occur in these areas.

In areas outside of the Ione city limits that would be designated for new land uses (primarily the Triangle Policy Area, the Silva Policy Area, and the State Route 124 Corridor Policy Area), construction activities could result in temporary and periodic increases in ambient noise levels at nearby receptors. The distance to nearby noise-sensitive land uses would depend on the exact timing and placement of development. However, the potential exists for construction activities to increase ambient noise levels and result in increased levels of annoyance and potential sleep disruption to occupants of nearby dwellings. Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

Sphere of Influence Amendment/Annexation

As part of the proposed project, the City plans to amend its Sphere of Influence (SOI) to include the site of the Castle Oaks Water Reclamation Plant (COWRP), the City Corporation Yard and adjacent land and to expand the Old Stockton Road and Industrial Park Special Planning Areas. In addition, the City is proposing to annex three areas currently located outside the city limits. These areas are identified on Figure 3.0-6 in Section 3.0 and are referred to as (1) the Collins Road Annexation Area consisting of about 1 acre; (2) the Wastewater Treatment Plant Annexation Area consisting of about 9.7 acres; and (3) the State Property Annexation Area consisting of about 3.7 acres. The northwest parcel (Collins Road Annexation Area) will be prezoned C-3 Heavy Commercial, while the 3.7-acre parcel to the northeast (State Property Annexation Area), and the 9.7 acre Wastewater Treatment Plant Annexation Area will be prezoned PF Public Facilities.

The proposed SOI amendment and annexations are policy actions that have the potential to result in construction activities that could temporarily elevate noise levels at noise-sensitive land uses. However, implementation of this portion of the proposed project would not result in noise impacts beyond those addressed under the General Plan update. Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

Zoning Code Update

The proposed project includes updates to the City's Zoning Code. These changes would be largely administrative, including adding new zoning districts and amending development standards for

some existing zoning districts. None of these changes would result in increased development or construction activities in the Planning Area beyond those addressed under the proposed project. Therefore, **no impact** associated with increased construction noise would occur.

West Ione Roadway Improvement Strategy

The proposed West Ione Roadway Improvement Strategy (WIRIS) would consist of various improvements to existing roadways and the construction of new roadway segments in order to create a bypass to provide traffic relief through downtown. The construction of a major bypass route around the City's core would result in construction noise that, depending on the distance from nearby noise-sensitive land uses, may result in temporary and periodic increases in ambient noise levels at nearby receptors. Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

Applicable Proposed General Plan Policies and Action Items that Provide Mitigation

The proposed General Plan update contains several goals, policies, and action items that would assist in reducing this impact from construction noise. The following list contains those policies and action items that contain specific, enforceable requirements and/or restrictions and corresponding performance standards that assist in reducing this impact.

*Noise Element*

Policy NS-1.4: Mitigate noise created by proposed non-transportation noise sources to comply with the City's noise standards to the maximum extent feasible.

Action NS-1.4.1: Limit construction activity to the hours of 7:00 am to 7:00 pm weekdays and 8:00 am to 6:00 pm weekends, when construction is conducted in proximity to residential land uses.

Policy NS-1.5: Mitigate noise created by the construction of new transportation noise sources to the maximum extent feasible to comply with the City's standards.

Action NS-1.5.1: Require the use of temporary construction noise control measures including the use of temporary noise barriers, temporary relocation of noise-sensitive land uses, or other appropriate measures as mitigation for noise generated during construction of public and/or private projects.

Policy NS.1.4.1 would reduce temporary construction noise impacts during hours when they have the potential to be the greatest nuisance by limiting construction activity to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. weekends, when construction is conducted in proximity to residential land uses. Policy NS.1.4.3 would also require stationary construction equipment and construction staging areas to be set back from existing noise-sensitive land uses. In addition, Action NS-1.5.1 would require the use of temporary construction noise control measures, as appropriate, for public and/or private development projects. With implementation of the proposed General Plan policies and action items, construction-related noise impacts would be reduced to a **less than significant** level.

Mitigation Measures

None required

### Exposure to Surface Transportation Noise

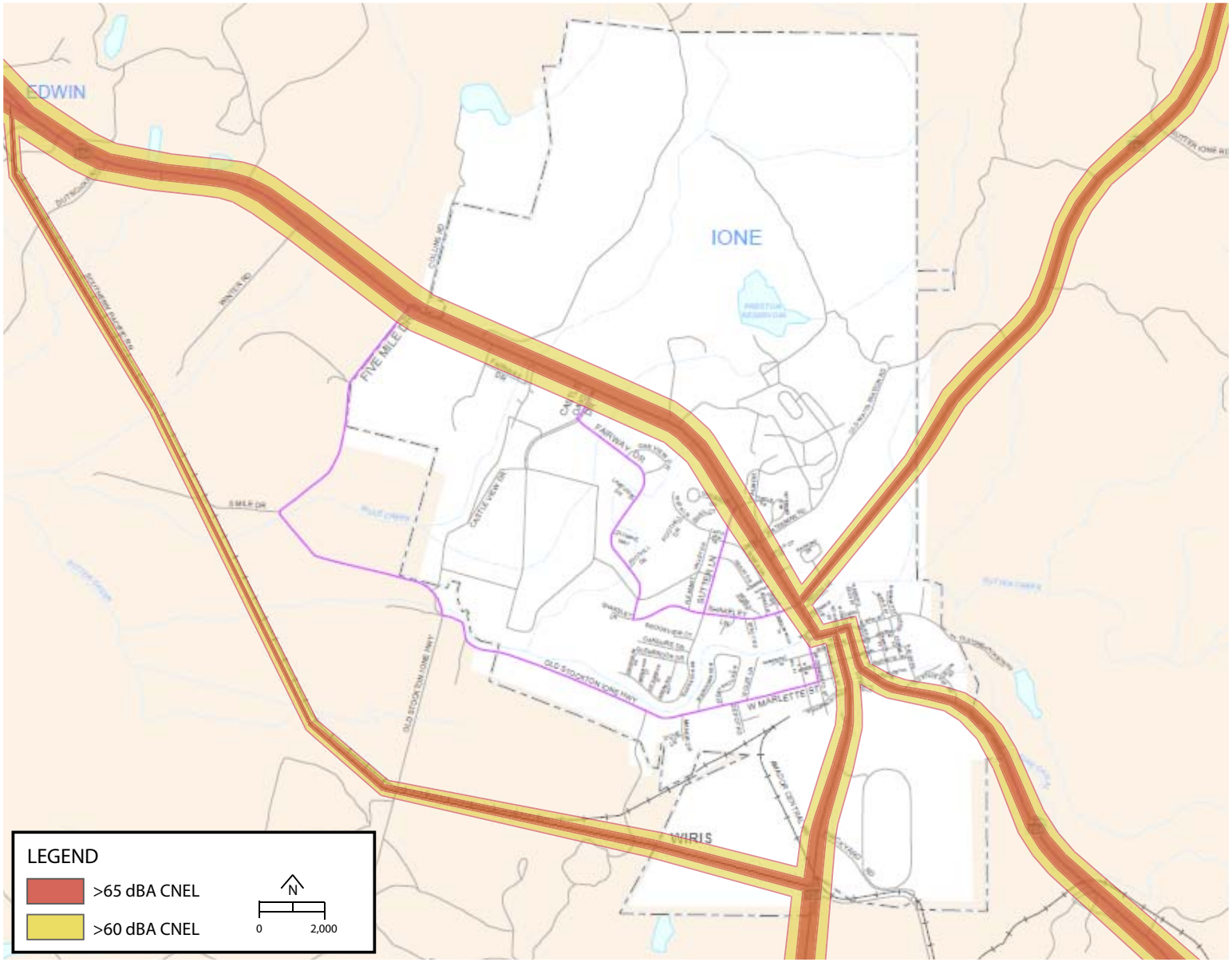
**Impact 4.6.2** The proposed General Plan update and other project components would result in increased traffic noise levels along area roadways that could adversely affect noise-sensitive land uses. In addition, future development of industrial uses within the southern portion of the city could result in resumed railroad traffic and increased noise levels along the existing UP Railroad corridor. Increases in surface transportation noise could result in increased noise levels at noise-sensitive land uses in excess of City noise standards. This impact would be considered **significant**.

Surface transportation noise sources within the City of Ione Planning Area include vehicle traffic on area roadways, as well as trains traveling along the UP Railroad. Noise-related impacts associated with roadway vehicle traffic and the UP Railroad are discussed in more detail below.

#### Roadway Vehicle Traffic

Projected future noise contours for major roadways within the city are summarized in **Table 4.6-6** and depicted in **Figure 4.6-3**. Predicted future noise contours include the West Ione Roadway Improvement Strategy. WIRIS is being proposed to help alleviate congestion, improve safety, improve quality of life, and enhance economic development by improving current operations. It is important to note, however, that the predicted noise levels and distance to noise contours do not take into account shielding of noise by intervening structures or terrain. As a result, these noise contours should not be considered as "absolute lines of demarcation." Because distances to noise contours will vary depending on site-specific conditions, these contours should be used as a guide for establishing a pattern of land uses that minimizes the exposure of community residents to excessive noise.

It is important to note that the predicted traffic noise levels and distances to traffic noise contours presented in Table 4.6-6 and Figure 4.6-3 include vehicle traffic associated with the Q-Ranch Policy Area, based on a total of 500 dwelling units. However, recent revisions to the Q-Ranch Policy Area would increase the total number of proposed dwelling units from 500 to 850. Resultant increases in vehicle trips associated with the increased number of proposed dwelling units would be distributed among various roadway segments, with a majority of the increase in vehicle trips occurring along portions of Main Street, SR 124, and SR 104. This proposed increase in dwelling units would result in estimated increases of approximately 300 to 900 daily trips along primarily affected roadway segments. This estimated increase in vehicle trips would result in increased noise levels of approximately 0.1 dBA, or less, along primarily affected roadways. Resultant increase in traffic noise levels associated with this recent revision to the Q-Ranch Policy Area would not affect projected future noise contours presented in Table 4.6-6 and Figure 4.6-3.




City of Ione
Planning Department

Figure 4.6-3
Predicted Future Noise Contours

**TABLE 4.6-6**
**PREDICTED TRAFFIC NOISE LEVELS**
**PROPOSED GENERAL PLAN FUTURE CONDITIONS**

| Roadway Segment | ADT | CNEL at 50 Feet from Near Travel-lane Centerline | Distance (feet) from Roadway Centerline to CNEL Contour | | |
|---|---|---|---|---|---|
| | | | 70 | 65 | 60 |
| State Route 104, Ione-Michigan Bar Road to Five Mile Drive | 10,790 | 71.60 | 71 | 153 | 330 |
| State Route 104, Five Mile Drive to Sutter Lane | 14,030 | 70.92 | 64 | 138 | 298 |
| State Route 104, Sutter Lane to SR 124 | 16,910 | 69.55 | 52 | 112 | 241 |
| State Route 104/ SR 124, Shakeley Lane to S. Church Street | 33,100 | 68.63 | -- | 97 | 210 |
| State Route 124, SR 124 to Brickyard Road | 24,290 | 67.34 | -- | 80 | 172 |
| State Route 124, Brickyard Road to Buena Vista Road | 19,430 | 71.54 | 71 | 152 | 327 |
| State Route 124, east of SR 104 | 15,330 | 67.15 | -- | 78 | 167 |
| State Route 104, SR 124 to Foothill Boulevard | 19,080 | 70.67 | 62 | 133 | 286 |
| Marlette Street, Old Stockton Road to Mills Street | 6,630 | 58.94 | -- | -- | -- |
| Five Mile Drive, SR 104 to Old Stockton Road | 1,150 | 54.80 | -- | -- | -- |
| Old Stockton Road, south of Marlette Street/Five Mile Drive | 3,220 | 61.96 | -- | -- | 76 |
| Sutter Lane, SR 104 to Shakeley Lane | 1,300 | 51.86 | -- | -- | -- |
| Shakeley Lane, Sutter Lane to SR 104/SR 124 | 6,180 | 58.64 | -- | -- | -- |
| Waterman Road, north of SR 104 | 10,510 | 60.94 | -- | -- | 65 |
| West Ione Road Improvement Strategy (Interim West Bypass) State Route 104 to Old Stockton Road | 5,200 | 64.04 | -- | -- | 104 |
| West Ione Road Improvement Strategy (Interim West Bypass) East of Old Stockton Road | 13,300 | 68.12 | -- | 90 | 194 |
| West Ione Road Improvement Strategy (Interim West Bypass) West of State Route 124 | 22,900 | 70.48 | 60 | 129 | 278 |

*Notes: -Noise levels/contours were calculated using the FHWA roadway noise model based on Calveno vehicle reference noise levels and traffic data obtained from the traffic analysis prepared for this project. Refer to* ***Appendix A*** *for modeling output files.*

*– Contours are within roadway right-of-way.*

Source: AMBIENT, 2009

Predicted increases in traffic noise levels associated with future development, in comparison to existing traffic noise levels, are summarized in **Table 4.6-7**. As depicted in **Table 4.6-7**, portions of SR 104 and SR 124, as well as various other major roadways, would experience substantial increases (i.e., 3 dBA or greater) in traffic noise levels. Old Stockton Road, south of Marlette Street/Five Mile Drive, and Waterman Road, north of SR 104, are projected to experience the greatest increases in traffic noise levels. Based on the modeling conducted, projected increases in vehicle traffic volumes attributable to the proposed project would result in significant increases in roadway traffic noise levels.

**TABLE 4.6-7**
**PREDICTED CHANGES IN TRAFFIC NOISE LEVELS**

| Roadway Segment | CNEL at 50 Feet from Near Travel-lane Centerline | | Predicted Increase in Noise Level (CNEL) |
|---|---|---|---|
| | Existing Conditions | Proposed GP Year 2030 Conditions | |
| State Route 104, Ione-Michigan Bar Road to Five Mile Drive | 67.18 | 71.60 | 4.42 |
| State Route 104, Five Mile Drive to Sutter Lane | 65.88 | 70.92 | 5.04 |
| State Route 104, Sutter Lane to SR 124 | 66.41 | 69.55 | 3.14 |
| State Route 104/ SR 124, Shakeley Lane to S. Church Street | 63.56 | 68.63 | 5.07 |
| State Route 124, SR 124 to Brickyard Road | 59.50 | 67.34 | 7.84 |
| State Route 124, Brickyard Road to Buena Vista Road | 64.68 | 71.54 | 6.86 |
| State Route 124, east of SR 104 | 59.10 | 67.15 | 8.05 |
| State Route 104, SR 124 to Foothill Boulevard | 64.76 | 70.67 | 5.91 |
| Marlette Street, Old Stockton Road to Mills Street | 54.71 | 58.94 | 4.23 |
| Five Mile Drive, SR 104 to Old Stockton Road | 48.44 | 54.80 | 6.36 |
| Old Stockton Road, south of Marlette Street/Five Mile Drive | 51.52 | 61.96 | 10.44 |
| Sutter Lane, SR 104 to Shakeley Lane | 48.28 | 51.86 | 3.58 |
| Shakeley Lane, Sutter Lane to SR 104/SR 124 | 55.26 | 58.64 | 3.38 |
| Waterman Road, north of SR 104 | 50.73 | 60.94 | 10.21 |

*Notes: Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) Traffic volumes were derived from the traffic analysis prepared for this project. Roadway data and vehicle distribution percentages were based on traffic data obtained during the site reconnaissance conducted for this project, as well as heavy-duty truck distribution percentages obtained from the California Department of Transportation (Caltrans).*

*Source: AMBIENT, 2009*

The proposed project includes noise-sensitive land use designations, including residential land uses, along roadways anticipated to experience substantial increases in traffic noise. Development of noise-sensitive land uses could also occur within the projected 60 dBA CNEL noise contours of area roadways. Implementation of the proposed project would result in increased exposure of existing and future noise-sensitive land uses to traffic noise levels that could exceed the City's land use compatibility noise standards. As a result, exposure to vehicular traffic noise on area roadways would be considered **significant**.

## UP Railroad

As discussed earlier in this report, the UP Railroad runs along the southern boundary of the City of Ione. Portions of this existing corridor located within the City of Ione are currently inactive. However, future development of industrial uses located within the southern portion of the city could result in resumed freight train service along this corridor. Resultant noise levels would be dependent largely on the specific land uses developed and number of trains required to provide service to these uses. For these reasons, resultant noise levels are difficult to predict at this time.

The proposed project includes noise-sensitive land use designations, including residential land uses, along the existing railroad corridor, which could be exposed to train noise levels in excess of the City's land use compatibility noise standards. As a result, exposure to train noise would be considered **significant**.

Applicable Proposed General Plan Policies and Action Items that Provide Mitigation

The proposed General Plan update contains the following policies and action items that would assist in reducing impacts from transportation noise sources through specific, enforceable requirements.

*Noise Element*

Policy NS-1.1: Establish the Noise Level Performance Standards in Table 6-1 and Table 6-2 to govern maximum allowable sound levels in all new development.

**TABLE 4.6-1**
**CITY OF IONE EXTERIOR NOISE LEVEL PERFORMANCE STANDARDS FOR NON-TRANSPORTATION NOISE FOR NEW PROJECTS**

| Land Use Type | Maximum Noise Exposure Level (dBA) | |
|---|---|---|
| **Land Use** | **7 a.m. to 10 p.m.** | **10 p.m. to 7 a.m.** |
| Single-Family Homes | 55 | 45 |
| Multi-Family Residential | 60 | 45 |

*Notes: The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.*

**TABLE 4.6-2**
**CITY OF IONE NOISE LEVEL PERFORMANCE STANDARDS FOR ALL NOISE SOURCES, INCLUDING TRANSPORTATION NOISE, FOR NEW PROJECTS**

| Noise-Sensitive Land Use | Maximum Noise Exposure Level (dBA) | |
|---|---|---|
| **Land Use** | **Outdoor Activity Areas[1]** | **Interior Spaces** |
| Residential | 60[2] | 45 |
| Churches | 60[2] | 45 |
| Playgrounds, Neighborhood Parks | 70 | -- |
| Schools, libraries, museums | -- | 45 |
| Nursing Homes/Hospitals | 60[2] | 45 |

*Notes:*

*1- Outdoor activity areas are property locations where an individual spends the most outdoor time or where people are likely to congregate. Where the outdoor activity area is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.*

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

*The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.*

Policy NS-1.2: Ensure the outdoor and indoor areas of new projects will be located, constructed and/or shielded from noise sources in compliance with the City's noise standards.

Action NS-1.2.1: Require new development of noise-creating uses to conform with the City's maximum noise levels as shown in Table 6-1 and 6-2.

Action NS-1.2.2: Require an acoustical analysis as part of the environmental review process when noise-sensitive land uses are proposed in areas where current or projected exterior noise levels exceed the City's standards. The acoustical analysis must be prepared by a qualified person experienced in environmental noise assessment and architectural acoustics and must estimate existing and projected cumulative noise levels and compare those levels to the policies in this element.

Policy NS-1.6: Ensure that comfortable noise levels are maintained in high-density, mixed-use and transitional development areas.

Policy NS-1.7: Emphasize noise mitigation methods other than soundwall installation.

Implementation of recommended General Plan noise policies would reduce potential noise impacts. Policy NS-1.1 would establish noise level performance standards, including standards applicable to transportation noise sources (Table 6-2). Policy NS-1.2 would ensure that future development complies with the noise standards identified in Table 6-2. Specifically, Action NS-1.2.1 would require that future development conform with the City's noise standards. Action NS-1.2.2 would require future development projects to analyze project-related noise impacts and incorporate necessary noise-reduction measures sufficient to achieve applicable noise standards. Implementation of these policies and actions will help to reduce impacts associated with proposed development. Noise reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. Policy NS-1.7 in favor of those that are more visually pleasing and in keeping with the City's goal of preserving the historical feel of Ione. The feasibility of these measures would be determined on a project-by-project basis. However, it may not be possible to fully mitigate in all areas, particularly in existing development that may be constrained due to age, placement, or other factors which limit the feasibility of mitigation. As a result, increases in traffic noise associated with implementation of the proposed project would be considered to have a **significant and unavoidable** impact**.**

Mitigation Measures

None available.

### Exposure to Non-Transportation Noise

**Impact 4.6.3** As additional development occurs throughout the city, the potential exists for new noise-sensitive land uses to encroach upon existing or proposed stationary noise sources. As a result, this impact is considered to be **significant**.

General Plan Land Use Map

Implementation of the proposed General Plan update would allow for new infill development and redevelopment within the Ione city limits. In the downtown area, proposed General Plan policies

would primarily provide for commercial, office, and public uses but would also provide the opportunity for a mixed land use category (Downtown Transition) that combines residential, commercial, and office uses. Outside of the downtown area, the proposed land use designations would primarily allow for low-density residential development and associated parks and recreation uses as well as clusters of higher-density residential uses and commercial and industrial uses.

Implementation of the proposed General Plan update would also allow new development to occur in the largely undeveloped areas of the Planning Area surrounding the city. In particular, this would include development of the Triangle Policy Area southeast of the city proposed for designation as a Special Planning Area (SPA), the Silva Policy Area located west of the city also proposed for designation as an SPA, and the State Route 124 Corridor Policy Area located northeast of the city proposed for designation as Low Density Residential (RL). In addition, areas northwest and south of the city are designated as Surface Mining (SM). The remaining areas outside the city limits are primarily proposed for designation as Open Space (OS) or General Agriculture (AG). These proposed designations would largely allow for a continuation of the existing uses and would not allow for significant development to occur in these areas.

Therefore, implementation of the proposed General Plan update could result in the future development of land uses as described above. These land uses could generate noise levels in excess of applicable City noise standards and could expose noise-sensitive land uses to excessive noise levels. In addition, new noise-sensitive land uses could be located in areas of existing stationary noise sources. Increased exposure to non-transportation source noise levels could result in increased levels of annoyance, activity interference, and potential sleep disruption for occupants of nearby land uses. For these reasons, this impact would be considered **significant**.

### Sphere of Influence Amendment/Annexation

As part of the proposed project, the City plans to amend its Sphere of Influence (SOI) to include the site of the Castle Oaks Water Reclamation Plant (COWRP), the City Corporation Yard and adjacent land and to expand the Old Stockton Road and Industrial Park Special Planning Areas. In addition, the City is proposing to annex three areas currently located outside the city limits. These areas are identified on Figure 3.0-6 in Section 3.0 and are referred to as (1) the Collins Road Annexation Area consisting of about 1 acre; (2) the Wastewater Treatment Plant Annexation Area consisting of about 9.7 acres; and (3) the State Property Annexation Area consisting of about 3.7 acres. The northwest parcel (Collins Road Annexation Area) will be prezoned C-3 Heavy Commercial, while the 3.7-acre parcel to the northeast (State Property Annexation Area), and the 9.7 acre Wastewater Treatment Plant Annexation Area will be prezoned PF Public Facilities.

The proposed SOI amendment and annexations are policy actions that have the potential to result in development that could generate noise levels in excess of applicable City noise standards and could expose noise-sensitive land uses to excessive noise levels. However, implementation of this portion of the proposed project would not result in noise impacts beyond those addressed under the General Plan update. This impact is considered to be **less than significant**.

### Zoning Code Update

The proposed project includes updates to the City's Zoning Code. These changes would be largely administrative, including adding new zoning districts and amending development standards for some existing zoning districts. None of these changes would result in increased development or

construction activities in the Planning Area beyond those addressed under the proposed project. Therefore, **no impact** associated with increased non-transportation noise would occur.

West Ione Roadway Improvement Strategy

The proposed West Ione Roadway Improvement Strategy (WIRIS) would consist of various improvements to existing roadways and the construction of new roadway segments in order to create a bypass to provide traffic relief through downtown. The bypass would not result in an increase in non-transportation-related noise. This impact is considered **less than significant**.

Applicable Proposed General Plan Policies and Action Items that Provide Mitigation

The proposed General Plan update contains the following policies and action items that would assist in reducing impacts from non-transportation noise sources through specific, enforceable requirements.

Noise Element

Policy NS-1.1: Establish the Noise Level Performance Standards in Table 6-1 and Table 6-2 to govern maximum allowable sound levels in all new development.

**TABLE 6-1:**
**CITY OF IONE EXTERIOR NOISE LEVEL PERFORMANCE STANDARDS FOR NON-TRANSPORTATION NOISE FOR NEW PROJECTS**

| Land Use Type | Maximum Noise Exposure Level (dBA) | |
|---|---|---|
| **Land Use** | **7 a.m. to 10 p.m.** | **10 p.m. to 7 a.m.** |
| Single-Family Homes | 55 | 45 |
| Multi-Family Residential | 60 | 45 |

*Notes: The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.*

**TABLE 6-2:**
**CITY OF IONE NOISE LEVEL PERFORMANCE STANDARDS FOR ALL NOISE SOURCES, INCLUDING TRANSPORTATION NOISE, FOR NEW PROJECTS**

| Noise-Sensitive Land Use | Maximum Noise Exposure Level (dBA) | |
|---|---|---|
| **Land Use** | **Outdoor Activity Areas[1]** | **Interior Spaces** |
| Residential | 60[2] | 45 |
| Churches | 60[2] | 45 |
| Playgrounds, Neighborhood Parks | 70 | -- |
| Schools, libraries, museums | -- | 45 |
| Nursing Homes/Hospitals | 60[2] | 45 |

*Notes:*

*1- Outdoor activity areas are property locations where an individual spends the most outdoor time or where people are likely to congregate. Where the outdoor activity area is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.*

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

*The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.*

Policy NS-1.2: Ensure the outdoor and indoor areas of new projects will be located, constructed and/or shielded from noise sources in compliance with the City's noise standards.

Action NS-1.2.1: Require new development of noise-creating uses to conform with the City's maximum noise levels as shown in Table 6-1 and 6-2.

Policy NS-1.3: Ensure that proposed development likely to exceed the City's standards do not create noise disturbance in existing noise-sensitive areas.

Action NS-1.3.1: Require an acoustical analysis as part of the environmental review process when proposed non-residential land uses are likely to produce noise levels that exceed the City's noise standards. The acoustical analysis must be prepared by a qualified person experienced in environmental noise assessment and architectural acoustics and must estimate existing and projected cumulative noise levels and compare those levels to the policies in this element.

Policy NS-1.4: Mitigate noise created by proposed non-transportation noise sources to comply with the City's noise standards to the maximum extent feasible.

Action NS-1.4.2: Restrict the hours of operation of loading docks, trash compactors and other noise-producing uses in commercial areas with the potential to significantly impact noise-sensitive land uses.

Policy NS-1.6: Ensure that comfortable noise levels are maintained in high-density, mixed-use and transitional development areas.

Policy NS-1.7: Emphasize noise mitigation methods other than soundwall installation.

Implementation of recommended General Plan noise policies and standards would reduce potential noise impacts. Policy NS-1.1 would establish noise level performance standards, including standards applicable to non-transportation noise sources (Table 6-1). Policy NS-1.2 would ensure that future development complies with the noise standards identified in Table 6-1. Specifically, Action NS-1.2.1 would require that future development conform to the City's noise standards. Action NS-1.3.1 would require proposed future development projects to analyze project-related noise impact and incorporate necessary noise-reduction measures sufficient to achieve applicable noise standards. In addition, Action NS-1.4.2 would restrict hours of operation for noise-producing sources commonly associated with commercial uses. Implementation of these policies will help to reduce impacts associated with proposed development. Noise reduction measures typically implemented to reduce noise levels include increased insulation, setbacks, and construction of sound barriers. Some measures, such as construction of sound barriers, may have secondary impacts related to aesthetics and safety. Policy NS-1.7 would, however, discourage the construction of aesthetically intrusive sound barriers in favor of those that are more visually pleasing and in keeping with the City's goal of preserving the historical feel of Ione. The feasibility of these measures would be determined on a project-by-project basis. However, it may not be possible to fully mitigate in all areas,

particularly in existing development that may be constrained due to age, placement, or other factors which limit the feasibility of mitigation. As a result, implementation of these recommended policies would reduce noise-related impacts, but not necessarily to a less than significant level at all receptor locations. For this reason, noise impacts associated with future development would be considered **significant**. No additional feasible mitigation has been identified that would further reduce this impact. As a result, non-transportation source noise impacts would be considered **significant and unavoidable.**

Mitigation Measures

None available.

**Exposure to Groundborne Vibration**

**Impact 4.6.4** As additional development occurs throughout the city, the potential exists for noise-sensitive land uses to be exposed to construction-generated sources of groundborne vibration resulting from the project. As a result, this impact is considered **less than significant**.

General Plan Land Use Map

The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage.

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, the California Department of Transportation (Caltrans) has developed vibration criteria based on human perception and structural damage risks. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Below 0.10 in/sec there is "virtually no risk of 'architectural' damage to normal buildings." Historic or historic or ancient buildings could occur at levels of 0.08 in/sec ppv. In terms of human annoyance, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 in/sec ppv can be expected to result in increased levels of annoyance to people within buildings (Caltrans, 2002b). Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

*Areas Within Existing City Limits*

Implementation of the proposed General Plan update would allow for new infill development and redevelopment within the Ione city limits. In the downtown area, proposed General Plan policies would primarily provide for commercial, office, and public uses but would also provide the opportunity for a mixed land use category (Downtown Transition) that combines residential, commercial, and office uses. Outside of the downtown area, the proposed land use designations would primarily allow for low-density residential development and associated parks and recreation uses as well as clusters of higher-density residential uses and commercial and industrial uses.

Groundborne vibration sources located within the city limits that could potentially affect future development would be primarily associated with short-term construction activities. With the exception of pavement breaking and pile driving, construction activities and related equipment typically generate groundborne vibration levels of less than 0.2 in/sec, which is the architectural damage risk threshold recommended by Caltrans. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates groundborne vibration levels of less than 0.10 in/sec, or one half of the architectural damage risk level, at 10 feet. The highest vibration level associated with a pavement breaker was 2.88 in/sec at 10 feet. During pile driving, vibration levels near the source depend mainly on the soil's penetration resistance as well as the type of pile driver used. Impact pile drivers tend to generate higher vibration levels than vibratory or drilled piles. Groundborne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Caltrans indicates that the distance to the 0.2 in/sec ppv criterion for pile driving activities would occur at a distance of approximately 50 feet. However, as with construction-generated noise levels, pile driving can result in a high potential for human annoyance and pile-driving activities are typically considered potentially significant if these activities are performed within 200 feet of permanent structures (Caltrans, 2002b). Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

*Areas Outside of Existing City Limits*

Implementation of the proposed General Plan update would potentially, following annexation to the city, allow new development to occur in the largely undeveloped areas of the Planning Area surrounding the city. In particular, this could include development of the Triangle Policy Area southeast of the city proposed for designation as a Special Planning Area (SPA), the Silva Policy Area located west of the city also proposed for designation as an SPA, and the State Route 124 Corridor Policy Area located northeast of the city proposed for designation as Low Density Residential (RL). In addition, areas northwest and south of the city are designated as Surface Mining (SM). The remaining areas outside the city limits are primarily proposed for designation as Open Space (OS) or General Agriculture (AG). These proposed designations would largely allow for a continuation of the existing uses and would not allow for significant development to occur in these areas.

In areas outside of the Ione city limits that would be designated for new land uses (primarily the Triangle Policy Area, the Silva Policy Area, and the State Route 124 Corridor Policy Area), short-term groundborne vibration impacts as described above could occur. Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

Sphere of Influence Amendment/Annexation

As part of the proposed project, the City plans to amend its Sphere of Influence (SOI) to include the site of the Castle Oaks Water Reclamation Plant (COWRP), the City Corporation Yard and adjacent land and to expand the Old Stockton Road and Industrial Park Special Planning Areas. In addition, the City is proposing to annex three areas currently located outside the city limits. These areas are identified on Figure 3.0-6 in Section 3.0 and are referred to as (1) the Collins Road Annexation Area consisting of about 1 acre; (2) the Wastewater Treatment Plant Annexation Area consisting of about 9.7 acres; and (3) the State Property Annexation Area consisting of about 3.7 acres. The northwest parcel (Collins Road Annexation Area) will be prezoned C-3 Heavy Commercial, while the 3.7-acre parcel to the northeast (State Property Annexation Area), and the 9.7 acre Wastewater Treatment Plant Annexation Area will be prezoned PF Public Facilities.

The proposed SOI amendment and annexations are policy actions have the potential to result in short-term groundborne vibration impacts as described above. However, implementation of this portion of the proposed project would not result in impacts beyond those addressed under the General Plan update. This impact is considered to be **less than significant**.

Zoning Code Update

The proposed project includes updates to the City's Zoning Code. These changes would be largely administrative, including adding new zoning districts and amending development standards for some existing zoning districts. None of these changes would result in increased development or construction activities in the Planning Area beyond those addressed under the proposed project. Therefore, **no impact** associated with groundborne vibration would occur.

West Ione Roadway Improvement Strategy

The proposed West Ione Roadway Improvement Strategy (WIRIS) would consist of various improvements to existing roadways and the construction of new roadway segments in order to create a bypass to provide traffic relief through downtown. The construction of a major bypass route around the city's core would result in construction noise that could result in temporary groundborne vibration impacts. Implementation of proposed General Plan policies would reduce this impact to a **less than significant** impact as discussed below.

Applicable Proposed General Plan Policies and Action Items that Provide Mitigation

The proposed General Plan update contains several goals, policies, and action items that would assist in reducing impacts from groundborne vibration. The following list contains those policies and action items that contain specific, enforceable requirements and/or restrictions and corresponding performance standards that assist in reducing this impact.

Noise Element

Policy NS-1.4: Mitigate noise created by proposed non-transportation noise sources to comply with the City's noise standards to the maximum extent feasible.

Action NS-1.4.1: Limit construction activity to the hours of 7:00 am to 7:00 pm weekdays and 8:00 am to 6:00 pm weekends, when construction is conducted in proximity to residential land uses.

Policy NS-1.5: Mitigate noise created by the construction of new transportation noise sources to the maximum extent feasible to comply with the City's standards.

Action NS-1.5.1: Require the use of temporary construction noise control measures including the use of temporary noise barriers, temporary relocation of noise-sensitive land uses, or other appropriate measures as mitigation for noise generated during construction of public and/or private projects.

Implementation of proposed General Plan policies would restrict noise-generating construction activities that would result in increased levels of annoyance to nearby noise-sensitive land uses to the daytime hours of operation. Additional measures would also be required, as deemed feasible and appropriate, to reduce temporary construction-related impacts. With implementation of proposed General Plan policies, construction-generated groundborne vibration associated with future development projects would be reduced to a **less than significant** level.

Mitigation Measures

None required

## 4.6.5 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

### CUMULATIVE SETTING

The land use policies in the proposed City of Ione General Plan update would provide direction for growth within the city limits, while the Amador County General Plan policies provides direction for growth outside the city limits, but within the Planning Area boundaries (until land areas are annexed into the City). Thus, the setting for this cumulative analysis includes existing, proposed, approved, and planned projects in the City of Ione General Plan Planning Area and surrounding portions of unincorporated Amador County as well as full buildout of the City of Ione General Plan Planning Area as proposed under the proposed project (occurring after year 2030). Development in the region identified in Section 4.0 would change the intensity of land uses in the region. In particular, this cumulative development scenario would provide additional housing, employment, shopping, and recreational opportunities. These potential changes would invariably affect the future cumulative ambient noise environment within the Planning Area. While it is difficult to project exactly how the ambient noise conditions within the Planning Area will change following buildout under the proposed project, it is known that traffic noise levels will increase due to the additional traffic generated by buildout of various land use designations which have yet to be developed. Predicted future traffic noise levels and distances to noise contours for major roadway corridors, with implementation of the proposed project, are summarized in **Table 4.6-7**. Predicted future noise contours for major roadways within the community are depicted in **Figure 4.6-3**. Transportation noise projections include regional traffic conditions in the Planning Area from anticipated future regional growth.

The primary factor for cumulative noise impact analysis is the consideration of future traffic volumes from automobiles and potentially increased UP rail activity. To a lesser extent, non-transportation noise sources, including construction activities, would also contribute to cumulative noise levels but on a more localized basis. Changes in noise associated with non-transportation noise sources are difficult to predict without knowing the type and location of the generator. Although new non-transportation noise sources would result in localized increases in ambient noise conditions, noise levels associated with non-transportation noise sources would be regulated by noise standards proposed as part of the proposed project.

### CUMULATIVE IMPACTS AND MITIGATION MEASURES

**Noise Impacts Associated with Increased Traffic Resulting from Buildout of the Proposed General Plan**

**Impact 4.6.5** Implementation of the proposed project along with potential development of the Planning Area could result in increased noise conflicts. This is considered a **cumulatively considerable** impact.

Projected future noise contours for major roadways within the city and predicted increases in traffic noise levels associated with future development are summarized in **Table 4.6-6** and **Table 4.6-7**, respectively (refer to Impact 4.6.2 of this chapter). Predicted future noise contours for major roadways within the community are depicted in **Figure 4.6-3**.

As discussed in Impact 4.6.2 and in comparison to existing conditions, implementation of the proposed project would result in significant increases in traffic noise levels along several major

area roadways. Portions of SR 124 and SR 104, as well as various other major roadways within the community, would experience substantial increases in traffic noise levels. Substantial increases along other local roadways that were not included in this modeling may also occur and would be evaluated on a project-by-project basis, as development is proposed. Implementation of the project would result in projected increases in traffic noise levels that could adversely affect noise-sensitive land uses.

The proposed project includes noise-sensitive land use designations along roadways anticipated to experience significant increases in traffic noise, as well as within the projected 60 dBA CNEL noise contours of major roadways. Exposure to non-transportation noise sources in excess of applicable noise standards may also occur. Implementation of the project would result in increased exposure of existing and future noise-sensitive land uses to noise levels that could exceed the City's land use compatibility noise standards. As a result, this impact would be considered **cumulatively considerable**.

Applicable General Plan Policies and Action Items

The proposed General Plan update contains several goals, policies, and action items that would assist in reducing this cumulative noise impact. The following list contains those policies and action items that contain specific, enforceable requirements and/or restrictions and corresponding performance standards that assist in reducing (though not eliminating) this impact. Since some of these policies and action items have been described in detail in prior impact discussions for this section, the following is limited to listing these formerly described policies and actions, and describing fully only those policies and action items that are being incorporated newly into this discussion.

*Noise Element*

Policy NS-1.1, Policy NS-1.2, Action NS-1.2.2, Policy NS-1.5, Action NS-1.5.1,

Policy NS-2.2: Cooperate and consult with other local, regional, state and federal agencies and with rail carriers in an effort to secure the safety of all residents of the City of Ione.

Action NS-2.2.1: Participate in State mutual aid agreements with neighboring cities and counties; State and federal emergency relief agencies; and private enterprises such as Red Cross, Salvation Army and local medical institutions to assist in shelter, relief and first aid operations. Encourage cooperation among adjacent communities to provide backup fire suppression and law enforcement assistance in emergency situations.

Action NS-2.2.2: Collaborate with Amador County Unified School District and other public entities to offer public safety classes, including but not limited to personal safety, fire safety, and traffic and bicycle safety.

Implementation of recommended General Plan noise policies would reduce potential noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures sufficient to achieve applicable noise standards. Implementation of these policies and actions will help to reduce impacts associated with proposed development. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. Some measures, such as construction of sound barriers, may have secondary impacts related to

aesthetics and safety. Policy NS-2.2 would reduce this secondary impact by discouraging the construction of aesthetically intrusive sound barriers. The feasibility of these measures would be determined on a project-by-project basis. However, it may not be possible to fully mitigate in all areas, particularly existing development that may be constrained due to age, placement, or other factors which limit the feasibility of mitigation. As a result, the proposed project would have a **cumulatively considerable** contribution to this **significant and unavoidable** impact.

Mitigation Measures

None available.

## REFERENCES

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### PERSONAL COMMUNICATIONS

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