

2.13 Noise

This section describes existing conditions for noise within the unincorporated county. It includes definitions of common noise descriptors; summaries of applicable noise and vibration regulations, acoustic fundamentals, and existing ambient-noise conditions; and an analysis of potential short- and long-term noise and vibration impacts associated with the Cannabis Program. Potential noise and vibration impacts are analyzed, and mitigation measures are recommended for those impacts determined to be significant. Additional data are provided in Appendix D, “Noise Measurement Data and Noise Modeling Calculations.”

Comments received during the notice of preparation (NOP) identified concerns regarding the potential for the Cannabis Program to result in increased traffic noise and operational nighttime noise. These issues are addressed in this section, as appropriate. All comments received in response to the NOP are presented in Appendix A of this PEIR.

A summary of the impacts identified in this section is provided in Table 2.13.1.

Table 2.13.1 Noise Summary of Impacts

Issue Number	Issue Topic	Project Direct Impact	Project Cumulative Impact	Impact after Mitigation
1	Excessive Temporary (Construction-Related) Noise Levels	Alternative 1: Less than Significant Alternatives 2–5: Significant	Alternatives 1–5: Less than Significant	Alternative 1: Less than Significant Alternatives 2–5: Significant and Unavoidable
2	Excessive Long-Term Stationary Noise Levels	Alternative 1: Less than Significant Alternatives 2–5: Significant	Alternatives 1–5: Less than Significant	Alternatives 1–5: Less than Significant
3	Excessive Long-Term Traffic Noise Levels	Alternatives 1–5: Less than Significant	Alternatives 1–5: Less than Significant	Alternatives 1–5: Less than Significant
4	Excessive Groundborne Vibration	Alternatives 1–5: Less than Significant	Alternatives 1–5: Less than Significant	Alternatives 1–5: Less than Significant

2.13.1 Existing Conditions

2.13.1.1 *Characteristics of Noise and Vibration*

Fundamentals of Noise

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is typically defined as unwanted sound. Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). Sound pressures in the environment have a wide range of values, and the sound pressure level was developed as a convenience to describe this range as a logarithm of the sound pressure. To be consistent throughout the world, the sound pressure level is the logarithm of the ratio of the unknown sound pressure to an agreed-upon reference quantity of the same kind. To account for the pitch of sounds and the corresponding sensitivity of human

hearing, the raw sound pressure level is adjusted with an A-weighting scheme based on the frequency stated in units of decibels (dBA). Typical A-weighted noise levels are listed in Table 2.13.2, presented at the end of this section.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz or thousands of hertz. Humans generally have an audible frequency range between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.0000000001) of normal atmospheric pressure. Sound pressure amplitudes for different noise environments can range from less than 100 to 100,000,000 mPa. Because of this large range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in decibels (dB).

Addition of Decibels

Because decibels are logarithmic units, SPLs cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when 2 identical sources produce sound of the same loudness at the same time, the resulting sound level at a given distance would be 3 dB higher than if only one of the sound sources was producing sound under the same conditions. For example, if 1 idling truck generates an SPL of 70 dB, 2 trucks idling simultaneously would not produce 140 dB; instead, they would combine to produce 73 dB. Under the decibel scale, 3 sources of equal loudness together produce a sound level approximately 5 dB louder than 1 source.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound substantially affect the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies and the way it perceives the SPL in that range. People are generally most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within this range better than sounds of the same amplitude with frequencies outside this range. To approximate the response of the human ear, sound levels of individual frequency bands are weighted according to the human sensitivity to those frequencies. Then, an “A-weighted” sound level (expressed in units of A-weighted decibels) can be computed based on this information.

Human Response to Changes in Noise Levels

The doubling of sound energy results in a 3-dB increase in the sound level. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear can discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000–8,000 Hz) range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 Hz and perceives higher and lower frequency sounds of the same magnitude with less intensity (Caltrans 2013: 2-18). In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Furthermore, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013: 2-10). Therefore, a doubling of sound energy (e.g., doubling the traffic volume on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable.

Common Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise and vibration descriptors used throughout this section.

A-Weighted Decibels (dBA): Noise levels are commonly reported in decibels using the A-weighting decibel scale (dBA). The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds.

Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average sound energy occurring over a specified period. L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013: 2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq} , is the energy average of sound levels occurring during a 1-hour period and is the basis for noise abatement criteria used by the California Department of Transportation (Caltrans) and the Federal Transit Administration (FTA) (Caltrans 2013: 2-47; FTA 2018: 197).

Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013: 2-48; FTA 2018: 197).

Day-Night Level (L_{dn}): L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB “penalty” applied to sound levels occurring during nighttime hours between 10:00 p.m. and 7:00 a.m. (Caltrans 2013: 2-48; FTA 2018: 197).

Community Noise Equivalent Level (CNEL): CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring during the nighttime hours between 10:00 p.m. and 7:00 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m. (Caltrans 2013: 2-48).

Vibration Decibels (VdB): VdB is the vibration velocity level in the decibel scale (FTA 2018: Table 5-1).

Peak Particle Velocity (PPV): PPV is the peak signal value of an oscillating vibration waveform. Usually expressed in inches/second (FTA 2018: 197).

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. How a noise level decreases with distance depends on the following factors:

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path. They hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate than a point source. Noise from a line source propagates outward in a cylindrical pattern, often called cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Ground Absorption

The noise propagation path from a source to a receiver is usually close to the ground. Noise attenuation from ground absorption and reflective-wave canceling provide additional attenuation associated with geometric spreading. Traditionally, this additional attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. No excess ground attenuation is assumed for acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water). For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass or scattered bushes and trees), an additional ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the attenuation rate associated with cylindrical spreading, the additional ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dB per doubling of distance.

Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions. In contrast, locations upwind can have lowered noise levels because wind can carry sound. Sound levels can be increased over large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors, such as air temperature, humidity, and turbulence, can also affect sound attenuation.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver attenuates noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills

and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dBA of noise reduction (Caltrans 2013: 2-41; FTA 2018: 42). Barriers higher than the line of sight provide increased noise reduction (FTA 2018: 2-12). Vegetation between the source and receiver rarely reduces noise because it does not create a solid barrier unless there are multiple rows of vegetation (FTA 2018: 15, 104, 106).

Vibration

Vibration is the periodic oscillation of a medium or object for a given reference point. Vibration sources include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., operating factory machinery) or transient (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec) or millimeters per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in monitoring transient and impact vibration and has been found to correlate well with the stresses experienced by buildings (FTA 2018: 110; Caltrans 2013: 6).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2018: 185; Caltrans 2020: 7). This is based on a reference value of 1 micro inch per second.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2018: 120; Caltrans 2020: 27).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, the typical background vibration-velocity level, to 100 VdB, the general threshold where minor damage can occur to fragile buildings. Construction activities can generate sufficient ground vibrations to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2018).

Vibrations generated by construction activity can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Vibratory pile drivers, large pumps, and compressors generate continuous vibrations. Random vibration can result from jackhammers, pavement breakers, and heavy construction

equipment. Table 2.13.3, presented at the end of this section, summarizes the general human response to different ground vibration-velocity levels.

2.13.1.2 *Ambient Noise Setting*

Existing Noise- and Vibration-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those where noise exposure could result in health-related risks to individuals and places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels and because of the potential for nighttime noise to result in sleep disruption. The County of San Diego General Plan considers primary noise-sensitive land uses to include residential uses, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, and passive recreational parks (County of San Diego 2011: 8-4). These land use types are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance.

The unincorporated county is home to 28 community planning areas that vary in land use and density. These communities generally include a core of local-serving commercial uses, services, schools, and public facilities surrounded by residential neighborhoods.

Existing Noise Sources and Ambient Levels

The county is characterized as a primarily rural environment with low-density development. However, higher-density communities, including Valle de Oro Community Planning Area (CPA), Spring Valley CPA, and Sweetwater CPA, are also located in the unincorporated county and are characterized as having a louder ambient noise environment. Major sources of noise include transportation and non-transportation-related activities, as discussed below.

Transportation Noise Generators

The most common source of noise in rural and semirural environments is related to transportation. Transportation noise generators within the unincorporated county include roadways, airports, and railroads. A discussion of each of these noise sources is provided below.

Roadways

Traffic on roadways is the most substantial and common source of noise in the unincorporated county. There are several key factors associated with roadway or traffic noise, including traffic volumes, the speed of the traffic; the type or “mix” of vehicles using a particular roadway, and pavement conditions. Roadway noise also varies by time of day. Certain roadways are heavily traveled by commuters during the morning and late afternoon peak hours but are relatively vacant during nonpeak commuting hours. The roadway network in the unincorporated county consists of state highways, interstate highways, regional arterials, local public roads, and private roads. Highways and arterials generally accommodate high-speed, high-volume traffic and are designed to provide for the movement of people and goods between and within communities in the county. The interstate (I) highways in the unincorporated county include I-15, I-5, and I-8. I-15 and I-5 traverse the western portion of the county from north to south, and I-8 crosses the southern portion of the county from west to east. Major state highways include State Route (SR)

94, SR 78, SR 79, and SR 76. SR 94 is located in the southwestern area of the unincorporated county, and SR 78, SR 79, and SR 76 all serve the eastern portion of the unincorporated county. Major arterials in the county include Jamacha Road in the Valle de Oro CPA, Sweetwater Road in the Spring Valley CPA, and Tecate Road in the Mountain Empire subregion.

Local roads serve lower-speed and lower-volume traffic and provide access to local residential neighborhoods and commercial and industrial areas within each of the unincorporated county's communities. Local roads also feed traffic onto larger highways and arterials. Private roads, such as private driveways or maintenance roads, are generally unavailable to the public and serve a limited number of travelers.

The number and type of roads vary across the unincorporated county. In the eastern backcountry communities, the roadway network is generally characterized by local roads and state highways that connect widely spaced development. The northwestern and southwestern communities are characterized by a denser roadway network consisting of major arterials and local roads, as well as interstate and state highways, to support the higher-density residential, commercial, and industrial development in these communities.

Airports

Noise generated from aviation operations is concentrated around airport buildings, around runways, and along approach and departure routes. Six public airports are located in the unincorporated county: Agua Caliente Airstrip, Borrego Valley Airport, Fallbrook Community Airpark, Jacumba Airport, Ocotillo Airstrip, and Ramona Airport. The County also owns Gillespie Field Airport in the City of El Cajon, which is located near the Lakeside CPA. There are 29 smaller private-use airports throughout the unincorporated county, including US Forest Service airstrips in the Pendleton/De Luz CPA and Alpine CPA, private or personal use airstrips in Bonsall CPA and Mountain Empire Subregion, Lake Wohlford airstrip in North County Metro Subregion, Pauma Valley Airpark in Pala/Pauma Valley Subregion, a State Parks airstrip in North Mountain Subregion, and Special Use Bureau of Land Management airstrips in the Desert Subregion. The United States Marine Corps operates an airstrip at Marine Corps Base Camp Pendleton in the Pendleton/De Luz CPA.

Railroads

Five railroad providers operate on 2 railroad corridors within the San Diego region: North County Transit District (NCTD), San Diego Metropolitan Transit System (Trolley light rail system), Burlington Northern Santa Fe Railroad, Carrizo Gorge Railway, and San Diego and Imperial Valley Railroad. In addition, some passenger rail services extend into areas of the unincorporated county. NCTD operates the Sprinter, a light-rail transit line that extends from Oceanside to Escondido and serves an area in the North County Metro Subregion. The Amtrak and Coaster passenger lines run along the coast through Camp Pendleton. All freight operations occur on tracks shared with passenger rail services (SANDAG 2024). The extent of the noise generated by passenger and freight trains depends on many factors, including the frequency of train operations, the number of railway cars, the type of engine, and the number of grade crossings that require warning bells or horns. In addition, train pass-by events cause adjacent land uses to be affected by groundborne vibration.

Non-Transportation Noise Generators

Industrial, Commercial, Extractive, and Agricultural Sources

Non-transportation-related noise sources are often referred to as “stationary,” “fixed,” “area,” or “point” sources of noise. Industrial processing, mechanical equipment, pump stations, and heating, ventilating, and air conditioning (HVAC) equipment are examples of non-transportation noise generators within the unincorporated county. In addition, some non-transportation sources, such as agricultural field machinery and truck deliveries, are not stationary but are typically assessed as such due to the limited area in which they operate.

Noise generated by industrial and commercial operations, maintenance, manufacturing, truck traffic (loading docks), and warehousing noise can affect surrounding noise-sensitive land uses. Noise perceived as disruptive by residents in proximity to existing agricultural operations has the potential to result from the operation of agricultural machinery in the evening or early morning hours when many residents desire a quiet environment. In addition, the operation of exterior exhaust and cooling system equipment typically used in greenhouse operations can be a source of noise that can potentially affect surrounding land uses.

Temporary and Nuisance Noise

Intermittent or temporary neighborhood noise from amplified music, public address systems, barking dogs, landscape maintenance, stand-by power generators, motorized recreation, and construction activities disturb residents but are difficult to attenuate and control. As of 2011, 74 percent of the noise complaints to the County’s Office of Noise Control in the unincorporated county are associated with barking dogs. Roosters and machinery are also common sources of noise complaints, each accounting for approximately 7 percent of complaints. The least common source of noise complaints is birds, accounting for approximately 2 percent of noise complaints.

2.13.1.3 Existing Noise Survey

No new ambient noise measurements were obtained as part of this analysis. Measured ambient noise levels, as well as baseline traffic noise levels, in the unincorporated county provided in the 2011 General Plan Update Draft EIR (GPU Draft EIR) are used in this analysis. Specifically, the GPU Draft EIR provided the following summary of community noise levels (L_{eq}) measured for the various land uses within the unincorporated county:

- freeways and highways: 70 dBA
- major arterials: 66–71 dBA
- passenger rail: 70 dBA
- airports: 56 dBA
- commercial: 65–69 dBA
- industrial: 61–62 dBA
- agricultural: 44–68 dBA
- other uses: 59–74 dBA
- noise-sensitive uses: 43–65 dBA

2.13.2 Regulatory Framework

2.13.2.1 *Federal*

US Environmental Protection Agency Office of Noise Abatement and Control

The US Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. In 1981, EPA administrators determined that subjective issues, such as noise, would be better addressed at more local levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. However, documents and research completed by the EPA Office of Noise Abatement and Control continue to provide value in analyzing noise effects.

Federal Transit Administration

To address the human response to ground vibration, FTA has set guidelines for maximum-acceptable vibration criteria for different types of land uses and structural damage. These guidelines are provided in Table 2.13.4, presented at the end of this section.

In addition to vibration criteria, FTA has also established the following construction noise criteria based on the land use type affected by noise and depending on whether or not construction noise would occur during the daytime or nighttime (FTA 2018):

- residential: 90 dBA L_{eq} (day) and 80 dBA L_{eq} (night), and
- commercial/industrial: 100 dBA L_{eq} (day and night).

2.13.2.2 *State*

California Department of Transportation

In 2020, Caltrans published the *Transportation and Construction Vibration Manual* (Caltrans 2020). The manual provides general guidance on vibration issues associated with the construction and operation of projects in relation to human perception and structural damage. Table 2.13.5, presented at the end of this section, includes recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

2.13.2.3 *Local*

San Diego County Regional Airport Authority

The San Diego County Regional Airport Authority (SDCRAA) serves as the Airport Land Use Commission. It is responsible for developing Airport Land Use Compatibility Plans (ALUCPs) for airports in the unincorporated county. ALUCPs have been prepared for 16 airports in the county and include noise contours and policies focused on safety, noise, airspace, and overflight.

Airport Land Use Compatibility Plans

ALUCPs are used to guide local jurisdictions in determining what types of land uses and development are appropriate in the vicinity of airports to protect the safety of people, property,

and aircrafts on the ground and in the air. ALUCPs are based on a defined area around an airport known as the Airport Influence Area. ALUCPs include policies that address noise compatibility issues associated with airports and their respective Airport Influence Areas. In December 2006, SDCRAA adopted new ALUCPs for 6 rural airports operated by the County (Agua Caliente, Borrego Valley, Fallbrook, Jacumba, Ocotillo, and Ramona).

San Diego County General Plan

The Noise Element of the County's General Plan sets goals and establishes policies that are intended to protect communities from the obtrusive impacts of noise and noise-generating uses, including construction, traffic, and airport operations (County of San Diego 2011). The following General Plan policies related to noise and vibration apply to the Cannabis Program:

- **Policy N-1.1: Noise Compatibility Guidelines.** Use the Noise Compatibility Guidelines (Table N-1) [presented as Table 2.13.6 at the end of this section] and the Noise Standards (Table N-2) [presented as Table 2.13.7 presented at the end of this section] as a guide in determining the acceptability of exterior and interior noise for proposed land uses.
- **Policy N-1.2: Noise Management Strategies.** Require the following strategies as higher priorities than construction of conventional noise barriers where noise abatement is necessary:
 - Avoid placement of noise sensitive uses within noise areas.
 - Increase setbacks between noise generators and noise sensitive uses.
 - Orient buildings such that the noise sensitive portions of a project are shielded from noise sources.
 - Use sound-attenuating architectural design and building features.
 - Employ technologies when appropriate that reduce noise generation (i.e., alternative pavement materials on roadways).
- **Policy N-2.1: Development Impacts to Noise Sensitive Land Use.** Require an acoustical study to identify inappropriate noise level where development may directly result in any existing or future noise sensitive land uses being subject to noise levels equal to or greater than 60 CNEL and require mitigation for sensitive uses in compliance with the noise standards listed in Table N-2 [presented as Table 2.13.7 at the end of this section].
- **Policy N-3.1: Groundborne Vibration.** Use the FTA and Federal Railroad Administration guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains, construction equipment, and other sources.
- **Policy N-4.1: Traffic Noise.** Require that projects proposing General Plan amendments that increase the average daily traffic beyond what is anticipated in this General Plan do not increase cumulative traffic noise to off-site noise sensitive land uses beyond acceptable levels.

- **Policy N-5.1: Truck Access.** Design development so that automobile and truck access to industrial and commercial properties abutting residential properties is located at the maximum practical distance from residential zones.
- **Policy N-5.2: Noise-Generating Industrial Facilities.** Locate noise-generating industrial facilities at the maximum practical distance from residential zones. Use setbacks between noise generating equipment and noise sensitive uses and limit the operation of noise generating activities to daytime hours as appropriate where such activities may affect residential uses.
- **Policy N-6.2: Recurring Intermittent Noise.** Minimize impacts from noise in areas where recurring intermittent noise may not exceed the noise standards listed in Table N-2 [presented as Table 2.13.7, at the end of this section], but can have other adverse effects.
- **Policy N-6.3: High-Noise Equipment.** Require development to limit the frequency of use of motorized landscaping equipment, parking lot sweepers, and other high-noise equipment if their activity will result in noise that affects residential zones.
- **Policy N-6.4: Hours of Construction.** Require development to limit the hours of operation as appropriate for non-emergency construction and maintenance, trash collection, and parking lot sweeper activity near noise sensitive land uses.
- **Policy LU-2.8: Mitigation of Development Impacts.** Require measures that minimize significant impacts to surrounding areas from uses or operations that cause excessive noise, vibrations, dust, odor, aesthetic impairment and/or are detrimental to human health and safety.
- **Policy S-15.1: Land Use Compatibility.** Require land uses surrounding airports to be compatible with the operation of each airport.

San Diego County Code of Regulatory Ordinances

Section 36.401 et seq., Noise Abatement and Control Ordinance

Section 36.404(a) of the San Diego County Code of Regulatory Ordinances (Regulatory Code) establishes 1-hour average sound level limits for various land use zones. This section prohibits noise exceeding the applicable sound level limit when measured at the property line of the property on which the noise is produced or at any location on a property receiving the noise. The established sound level limits are listed in Table 2.13.8, presented at the end of this section.

Section 36.404(c) of the Regulatory Code establishes that the limits in Table 2.13.8, presented at the end of this section, apply in an S88 zone depending on the property land use. Specifically, the zone 1 limits apply to residential, agricultural, and civic property use. The limits in zone 3 apply to commercial property use, and the limits in zone 5 apply to industrial property use that would be allowed only in an M50, M52, or M54 zone.

The Noise Abatement and Control Ordinance establishes prohibitions for disturbing, excessive, or offensive noise, and provisions, such as sound level limits, to secure and promote the public health, comfort, safety, peace, and quiet for its citizens. Planned compliance with sound level limits and other specific parts of the ordinance allow the presumption that the noise is not disturbing, excessive, or offensive. Limits are specified depending on the zoning placed on a property (e.g., varying densities and intensities of residential, industrial, and commercial

zones). Where 2 adjacent properties have different zones, the sound level limit at a location on a boundary between 2 properties is the arithmetic mean of the respective limits for the 2 zones, except for extractive industries. The 1-hour average sound level limit applicable to extractive industries, including to borrow pits and mines, shall be 75 dB at the property line regardless of the zone in which the extractive industry is located.

It is unlawful for any person to cause or allow the creation of any noise that exceeds the applicable limits of the Noise Abatement and Control Ordinance at any point on or beyond the boundaries of the property on which the sound is produced. Table 2.13.8, presented at the end of this section, shows the allowable noise levels and corresponding times of day for each zoning designation. Furthermore, Section 36.423 of the ordinance allows the County to grant variances for specific situations involving temporary on-site noise sources, subject to terms and conditions intended, to achieve compliance or at least to reduce potential noise effects from the proposed activities.

Finally, Sections 36.408 through 36.411 of the Noise Abatement and Control Ordinance establish additional noise limitations for the operation of construction equipment. Section 36.408 prohibits the operation of construction equipment between the hours of 7:00 p.m. and 7:00 a.m. Monday through Saturday and any time on Sundays, except for emergency work. Section 36.409 establishes sound level limitations on construction equipment, detailing that operation of construction equipment that exceeds an average sound level of 75 dB for an 8-hour period between 7:00 a.m. and 7:00 p.m. when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received shall be prohibited.

Section 36.417 details the scenarios exempt from the standards included in the chapter. Section 36.417(b)(2) establishes that Section 36.404 shall not apply to equipment associated with agricultural operations provided that each piece of equipment and machinery powered by an internal combustion engine is equipped with an appropriate muffler and air intake silencer that is in good working order and that operations either do not take place between 7:00 p.m. and 7:00 a.m.; operations and equipment are utilized for the preparation, planting, harvesting, protection, or salvage of crops during periods of potential or actual frost damage or other adverse weather conditions; or that operations and equipment are used for agricultural pest control per regulations and procedures administered by the County Department of Agriculture.

Sections 63.401–63.402, Agricultural Enterprises and Notice to Prospective Homeowners Ordinance

The Agricultural Enterprises and Notice to Prospective Homeowners Ordinance is used to define and limit the circumstances under which an agricultural enterprise is considered a nuisance. The ordinance establishes a procedure whereby prospective purchasers of property are notified of the inherent potential conditions associated with agricultural operations found throughout the unincorporated area. These conditions include noise, odors, dust, insects, rodents, and chemicals. In 2003, the ordinance was amended to require that a property owner who is selling real property intended for residential use in the unincorporated area of the county provide a written disclosure to a prospective purchaser that the property is likely to be located near a commercial agricultural enterprise and that “[o]ccupants of the property offered for sale may experience inconvenience, irritation or discomfort arising from the agricultural enterprise, including but not limited to noise, odors, fumes, dust, smoke, insects, rodents, the operation of machinery of any kind, including aircraft, during any 24 hour period, the storage

and disposal of manure, and agricultural chemicals, such as pesticides and fertilizers, that may be applied by spraying or other means.”

2.13.3 Analysis of Project Impacts and Determination of Significance

2.13.3.1 *Thresholds of Significance*

According to guidance provided in Appendix G of the State CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance: Noise* (County of San Diego 2009) except as provided in Public Resources Code Section 21099, the Cannabis Program would result in a significant noise impact if it would:

- result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- result in generation of excessive groundborne vibration or groundborne noise levels; or
- for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

2.13.3.2 *Issues Not Discussed Further*

Operational Vibration

The Cannabis Program would not result in the operation of any type of development that would cause substantial ground vibration, such as commercial railways or passenger rail transit lines. Therefore, long-term operational activities associated with future development as part of the Cannabis Program would not be anticipated to result in permanent or substantial levels of ground vibration. This impact is not discussed further.

Airport Noise

Adoption and implementation of the Cannabis Program would not result in the development of new residential land uses or other types of noise-sensitive receptors. In addition, the Cannabis Program would not result in the development of new residential land uses near private air strips or public commercial airports in San Diego County. In addition, commercial cannabis facilities would be required by the County of San Diego to comply with ACLUP policies and criteria. Compliance with these regulations would ensure that people working within an ACLUP area would not be exposed to excessive airport noise. Thus, this impact is not discussed further.

2.13.3.3 *Approach to Analysis*

Impacts related to noise and vibration are analyzed based on a review of the Cannabis Program and its potential to result in physical changes to the environment if it is approved and implemented. Each issue area is analyzed in the context of existing laws and regulations, as well as policies adopted in the General Plan, and the extent to which these existing regulations and policies adequately address and minimize the potential for impacts associated with implementation of the Cannabis Program.

The environmental analysis in this PEIR is general in nature and does not evaluate noise impacts of specific commercial cannabis cultivation site construction and operation. Instead, the analysis focuses on the worst-case noise-related impacts that could occur from the implementation of the Cannabis Program, assuming 5 alternatives. Thus, attention is given to the limitations and restrictions imposed by the existing requirements outlined in local regulations regarding the types, locations, and intensity of noise-generating activity. The analysis considers the use of construction equipment; generators, air filtration, and ventilation equipment; transportation noise; temporary events; and loading activity.

While precise site impacts cannot be determined without specific project and property information, the analysis does assess the potential for impacts under various scenarios that are likely to represent actual conditions using the construction and operational assumptions for the 5 alternatives provided in Appendix D. Impacts were determined based on methods and reference noise levels from FTA's *Guide on Transit Noise and Vibration Impact Assessment* (FTA 2018) and FHWA's *Roadway Construction Noise Model User's Guide* (FHWA 2006).

Construction Noise

Construction source noise levels generated by the Cannabis Program were determined based on methodologies, reference emission levels, and usage factors from FTA's *Guide on Transit Noise and Vibration Impact Assessment* methodology (FTA 2018) and the FHWA's *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels for noise and vibration emissions for specific equipment and activity types are well documented, and the usage thereof is common practice in the field of acoustics.

Specific equipment, techniques, locations, timing, and other project-specific construction activity details associated with individual future commercial cannabis projects are unknown at this time. Construction equipment associated with cannabis cultivation facilities would typically include bulldozers, grading equipment, and hand tools used for fence installation. As detailed in Table 1.4, it is anticipated that the majority of noncultivation uses would locate into existing industrial and retail buildings in the unincorporated area and thus would not typically require the use of heavy construction equipment. Therefore, typical construction activities associated with noncultivation facilities are anticipated to be minor (e.g., remodeling) and would not require the use of heavy equipment. However, it remains reasonably foreseeable that a licensee could seek to develop new structures to support new commercial cannabis facilities; thus, this analysis assumes that the construction of new buildings would be required for new commercial cannabis facilities. To evaluate potential construction noise impacts, reference noise levels associated with common construction equipment are used to model the worst-case construction noise levels. Pursuant to Section 36.408 of the County Noise Abatement and Control Ordinance, except for emergency work, it is unlawful for any person to operate construction equipment between the hours of 7:00 p.m. and 7:00 a.m.; thus, only daytime construction is evaluated in this analysis. To remain conservative, construction noise was modeled for the construction phase that typically uses the loudest equipment (e.g., site preparation). The site preparation phase typically generates the most substantial noise levels because on-site equipment associated with grading, compacting, and excavation is the noisiest. Site preparation equipment and activities include backhoes, bulldozers, loaders, and excavation equipment (e.g., graders and scrapers). Modeling for on-site construction noise assumed the simultaneous operation of 3 pieces of heavy equipment (i.e., bulldozer, excavator, and grader) and does not account for any existing intervening topography; thus, it represents the worst-case noise level generation when all equipment at each location is in operation.

Noise levels for common construction equipment and activities at 50 feet are shown in Table 2.13.9, presented at the end of this section. Although a detailed construction equipment list for individual projects associated with the Cannabis Program is not currently available, according to the types of construction activities anticipated for the construction of new commercial cannabis facilities under the Cannabis Program (e.g., earthwork, grading), it is expected that the primary sources of noise would be a bulldozer, excavator, and grader. As detailed in Chapter 1, “Project Description, Location, and Environmental Setting,” the building area for commercial cannabis facilities is assumed to average between approximately 6,300 square feet per site for outdoor cultivation and 20,000 square feet per site for indoor cultivation. To provide a conservative estimate of construction noise, it is assumed that these 3 pieces of construction equipment would be used at one time.

Construction Vibration

Construction activities could potentially expose nearby buildings to ground vibration levels that result in structural damage or negative human response. Construction activities that may expose people to excessive vibration, resulting in sleep disturbance or prolonged disruption to daily activities/work, are more likely to involve impact equipment (e.g., pile drivers, blasting). Blasting equipment is typically required to remove rock, and pile drivers are typically required for building large structures, such as bridges and multistory buildings. Therefore, the use of blasting and pile driving equipment is not anticipated under the Cannabis Program. Typical construction activities associated with the Cannabis Program would include the use of bulldozers, graders, and loaded trucks, which do not generate excessive levels of groundborne vibration except at extremely close distances (i.e., within 10 feet). As discussed above under subheading “Construction Noise,” it is anticipated that the majority of noncultivation uses would be located in existing buildings and thus would not typically require the use of heavy construction equipment. However, for a conservative analysis, it is assumed that minor construction would be required for noncultivation facilities and that such construction could involve the use of a small bulldozer. Construction vibration levels were determined based on methodologies, reference emission levels, and usage factors from the methodology in FTA’s *Guide on Transit Noise and Vibration Impact Assessment* (FTA 2018). Construction vibration levels and contour distances were calculated based on reference vibration levels for construction equipment that could be used and would generate the greatest levels of ground vibration (i.e., small bulldozer). Vibration levels for common construction equipment at 25 feet are shown in Table 2.13.10, presented at the end of this section. Reference levels for vibration emissions for specific equipment types are well documented, and the usage thereof is common practice in the field of acoustics.

Operational Noise

Stationary Noise

Concerning non-transportation noise sources (e.g., stationary noise sources) associated with the operation of new cannabis facilities, the assessment of long-term (operational-related) impacts was based on reference noise emission levels, measured noise levels for activities and equipment typically associated with the operation of commercial cannabis facilities (e.g., HVAC units, delivery activities for supplies) and temporary cannabis events, and standard attenuation rates and modeling techniques. Temporary cannabis events would likely include amplified music and raised speech—noise sources typically associated with special events. To evaluate the potential effects of temporary cannabis events, reference noise levels are used

and are shown in Table 2.13.11, presented at the end of this section. Reference noise levels are based on information collected for a vineyard project that proposed events similar to those anticipated under the Cannabis Program.

Transportation Noise

Operational vehicle traffic would vary depending on the site, and the various daily trip rates for each commercial cannabis license type. Vehicular trips would be attributed to licensed commercial cannabis facilities and associated activities, including retail, cultivation, manufacturing, distribution, testing, and microbusinesses, and have the potential to introduce new vehicle (e.g., automobile and light/medium trucks) trips to roadways in the county, which may result in increased noise levels associated with additional vehicle trips but only for relatively short periods, particularly during the harvesting and transport of commercial cannabis. The exact locations of individual future licensed cannabis facilities within the unincorporated county are currently unknown. Thus, the roadways upon which individual project-generated trips would travel cannot be known. To provide an estimate of total average daily vehicle trips (ADT) that could be generated by the Cannabis Program, trip generation rates were used to calculate the project components' ADT. The trip generation rates are shown in Table 2.13.13, presented at the end of this section.

2.13.3.4 Issue 1: Excessive Temporary (Construction-Related) Noise Levels

This section describes the potential for implementation of the Cannabis Program to result in temporary (construction-related) excessive noise levels.

Guidelines for Determination of Significance

Appendix G of the State CEQA Guidelines establishes the following guideline for determining the significance of effects related to excessive noise levels:

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

The State CEQA thresholds provided by the *County of San Diego Guidelines for Determining Significance: Noise* (County of San Diego 2009) state that a significant impact would occur if implementation of the Cannabis Program would result in the exposure of any on- or off-site existing or reasonably foreseeable future noise-sensitive land use to exterior or interior noise in excess of any of the following levels:

- Construction (temporary or periodic) noise levels that exceed:
 - 75 dBA for an 8-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received;
 - 82 dBA L_{max} at an occupied residential, village zoning, or civic use;
 - 85 dBA L_{max} at an occupied agricultural, commercial, or industrial use; or
 - If construction-related noise is generated between the hours of 7 p.m. and 7 a.m. on weekdays or any time on Sundays or holidays.

Impact Analysis

Construction associated with new commercial cannabis facilities (e.g., buildings, infrastructure, land clearing) could require earthwork and heavy equipment use, which could potentially result in a temporary increase in noise levels in the vicinity of future sites. Specifically, the establishment of new commercial cannabis sites could involve the use of off-road construction equipment for vegetation removal, breaking ground, initial plowing, grading to establish a foundation, and lifting supplies and building materials. Generally, the intensity of construction activity for new commercial cannabis sites would be similar to that of agricultural development, residential renovation, or a building addition project, although the extent of construction activity would vary depending on the site location and existing site conditions (e.g., if there are existing buildings on the site that can be used to support the commercial cannabis facility). As detailed in Table 1.4, “Alternative Development Assumptions,” adequate building space is available for proposed commercial cannabis facilities, and it is anticipated that most commercial cannabis facilities would locate into existing industrial and retail buildings in the unincorporated area. However, for a conservative worst-case analysis, this analysis assumes that construction of new facilities would be required in agricultural, commercial, and industrial zones.

Construction of new commercial cannabis sites would be required to comply with the noise regulations outlined in the Zoning Ordinance and Regulatory Code, as discussed under Section 2.13.2, “Regulatory Framework,” of this section. Section 36.409 of the County Noise Abatement and Control Ordinance limits the time of day during which construction operations may occur and requires that the average sound level for an 8-hour period not exceed 75 dBA between 7:00 a.m. and 7:00 p.m. when measured at the boundary line where the noise source is located or on any occupied property where the noise is being received.

Alternative 1: No Project—Retention of Current Cannabis Regulations

Under Alternative 1, the Cannabis Program would not be adopted. The existing 5 commercial cannabis facilities in the unincorporated areas of El Cajon, Escondido, and Ramona would be allowed to continue to operate as well as expand their existing facilities and operations to a total of 10,000 square feet of building area for each site. However, no new cultivation or noncultivation activities would occur.

Modeling for on-site construction noise conservatively assumed the simultaneous operation of 3 pieces of heavy equipment (i.e., bulldozer, excavator, and grader) and does not account for any existing intervening topography; thus, it represents the worst-case noise level generation when all equipment at each location is in operation. Simultaneous operation of the 3 pieces of equipment (bulldozer, excavator, and grader) would generate a combined hourly average noise level of 83.8 dBA L_{eq} at 50 feet and a maximum noise level of 87.8 dBA L_{max} at 50 feet. See Appendix D for construction noise modeling. Construction noise levels would exceed the County’s construction average sound level standard of 75 dBA L_{eq} within 138 feet of construction activity and the County’s maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) within 97 feet and 69 feet, respectively. Of the 5 existing commercial cannabis sites, only 1 site (i.e., Releaf Meds in Ramona) is located within 138 feet of a sensitive receptor. Specifically, the facility is located approximately 100 feet east of an existing noise-sensitive residential receptor. At 100 feet, construction noise would attenuate to 77.8 dBA L_{eq} and 81.8 dBA L_{max} . However, there is an existing solid barrier that breaks the direct line of sight between the existing cannabis facility and residence. A noise barrier can offer between 3 dB and 15 dB of noise reduction (Caltrans 2013).

Conservatively assuming that the existing barrier would offer a 3 dB reduction, construction activity would attenuate to 74.8 dB at the nearby residence and thus would not exceed the County average sound level standard of 75 dBA L_{eq} at the nearest sensitive receptor.

In addition, existing facilities that would be expanded under Alternative 1 would be required to comply with existing noise policies and standards. In accordance with Section 36.408 of the Regulatory Code, construction activities would occur during daytime hours (i.e., between 7:00 a.m. and 7:00 p.m.) when receptors are less sensitive to increased noise levels. Therefore, construction would occur during the less-sensitive daytime hours and thus would not result in adverse health effects (i.e., sleep disruption) to nearby receptors.

This impact would be less than significant under Alternative 1.

Alternative 2: Proposed Project—Cannabis Program Consistent with State Requirements

The Cannabis Program under Alternative 2 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 2 would include 600-foot buffers from cannabis uses from certain state-defined sensitive uses, including schools, daycares, and youth centers. In addition, cannabis activities would be limited to agricultural, commercial, and industrial zones as detailed in Section 1.6.1.4.

Modeling for on-site construction noise conservatively assumed the simultaneous operation of 3 pieces of heavy equipment (i.e., bulldozer, excavator, and grader) and does not account for any existing intervening topography; thus, it represents the worst-case noise level generation when all equipment at each location is in operation. Simultaneous operation of the 3 pieces of equipment (bulldozer, excavator, and grader) would generate a combined hourly average noise level of 83.8 dBA L_{eq} at 50 feet and a maximum noise level of 87.8 dBA L_{max} at 50 feet. See Appendix D for construction noise modeling. Construction noise levels would exceed the County’s construction average sound level standard of 75 dBA L_{eq} within 138 feet of construction activity and the County’s maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) within 97 feet and 69 feet, respectively. Therefore, if construction activity were to take place within these distances, noise levels would exceed the applicable noise standards.

Proposed amendments to the Zoning Ordinance, as detailed in Section 1.6.1.4, require that outdoor and mixed-light cannabis cultivation facilities would be permitted only within agricultural zones and would be required to be setback a minimum of 100 feet from all lot lines and a minimum of 300 feet from all residences on adjoining parcels. At 300 feet, construction noise associated with outdoor and mixed-light cannabis cultivation facilities would attenuate to 68.2 dBA L_{eq} and 72.2 dBA L_{max} , and thus would not exceed the County’s exterior noise standard of 75 dBA L_{eq} or the residential maximum noise level of 82 dBA L_{max} . At 100 feet (i.e., the lot line setback), construction noise would attenuate to 77.8 dBA L_{eq} and 81.8 dBA L_{max} at the nearest lot line. Therefore, even with adherence to the required setbacks, construction activity associated with future outdoor or mixed-light commercial cannabis facilities could still exceed the County’s construction average sound level standard of 75 dBA L_{eq} at nonresidential uses.

The Cannabis Program does not require minimum setbacks for indoor cultivation or noncultivation facilities. As detailed above, if construction were to take place within 138 feet of a nearby structure, the County's construction average sound level standard of 75 dBA L_{eq} would be exceeded. In addition, the County's maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) would be exceeded if construction activity were to take place within 97 feet of a residence or within 69 feet of an agricultural, commercial, or industrial land use. Because of the programmatic nature of this analysis, it cannot be guaranteed that construction related to indoor cultivation and noncultivation facilities would not occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land uses. Therefore, construction activity associated with future indoor cultivation or noncultivation facilities could exceed applicable County noise standards.

The Cannabis Program would require a 600-foot buffer from K-12 schools, daycare facilities, and youth centers. At 600 feet, construction activity would attenuate to 62.2 dBA L_{eq} and 66.2 dBA L_{max} and thus would not exceed the County's 75 dBA L_{eq} standard or maximum noise level standard of 82 dBA L_{max} for these land uses. The General Plan considers primary noise-sensitive land uses to include residential uses, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, and passive recreational parks (County of San Diego 2011: 8-4). Because of the programmatic nature of this analysis and because the Cannabis Program does not require a buffer from all sensitive land uses as defined under the General Plan, it cannot be guaranteed that construction would not occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land use.

Depending on the existing ambient noise levels of the proposed cannabis site, construction noise could result in a substantial temporary noise increase (i.e., +10 dBA) in the project vicinity. In accordance with Section 36.408 of the Regulatory Code, construction activities would occur during daytime hours (i.e., between 7:00 a.m. and 7:00 p.m.) when receptors are less sensitive to increased noise levels; however, the County has not adopted daytime construction noise exemptions. Commercial cannabis sites constructed under the Cannabis Program would be required to comply with Sections 36.408 and 36.409 of the Regulatory Code, which regulates construction-related noise to ensure that the applicable sound level standards would not be exceeded. However, considering that specific details of individual future commercial cannabis sites associated with the Cannabis Program—such as locations of future sites and their distances to sensitive receptors—are currently unknown, it cannot be guaranteed that construction noise would not result in a substantial temporary increase in noise at existing sensitive receptors as defined by the county General Plan, which includes residential uses, either because the County's construction noise standard of 75 dBA L_{eq} would be exceeded or because construction activity would increase the ambient noise level at sensitive receptors beyond 10 dBA.

This impact would be significant for Alternative 2.

Alternative 3: Cannabis Program with Expanded County Regulations

The Cannabis Program under Alternative 3 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 3 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of "sensitive uses" would be expanded beyond

schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. In addition, cannabis activities would be limited to agricultural, commercial, and industrial zones as detailed in Section 1.6.1.4.

As discussed above under Alternative 2, the extent of construction activity for new cannabis sites would vary depending on the location and existing site conditions, such as the existence of on-site buildings that could be used to support the commercial cannabis facility. As detailed above, simultaneous operation of the 3 pieces of equipment (bulldozer, excavator, and grader) would generate a combined hourly average noise level of 83.8 dBA L_{eq} at 50 feet and a maximum noise level of 87.8 dBA L_{max} at 50 feet. Construction noise levels would exceed the County's construction average sound level standard of 75 dBA L_{eq} within 138 feet of construction activity and the County's maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) within 97 feet and 69 feet, respectively. The General Plan considers primary noise-sensitive land uses to include residential uses, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, and passive recreational parks (County of San Diego 2011: 8-4). Although specific details of individual future commercial cannabis sites associated with Alternative 3—such as locations of future sites and their distances to sensitive receptors—are currently unknown, new development would be restricted to agricultural, commercial, and industrial zones of the unincorporated county; no commercial cannabis facilities would be permitted in residential zones.

Proposed amendments to the Zoning Ordinance, as detailed in Section 1.6.1.4, require that outdoor and mixed-light cannabis cultivation facilities be setback a minimum of 100 feet from all lot lines and a minimum of 300 feet from all residences on adjoining parcels existing at the time of permit application submittal. The proposed 1,000-foot buffer under this alternative would not apply to all noise sensitive land uses (e.g., residential uses). At 300 feet, construction noise would attenuate to 68.2 dBA L_{eq} and 72.2 dBA L_{max} and thus would not exceed the County's exterior noise standard of 75 dBA L_{eq} or the residential maximum noise level of 82 dBA L_{max} . At 100 feet, construction noise would attenuate to 77.8 dBA L_{eq} and 81.8 dBA L_{max} at the nearest property. Therefore, even with adherence to the required setbacks, construction activity associated with future outdoor or mixed-light commercial cannabis facilities could exceed the County's construction average sound level standard of 75 dBA L_{eq} at nonresidential uses.

This alternative does not require minimum setbacks for indoor cultivation or noncultivation facilities. As detailed above, if construction were to take place within 138 feet of a nearby structure, the County's construction average sound level standard of 75 dBA L_{eq} would be exceeded. In addition, the County's maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) would be exceeded if construction activity were to take place within 97 feet of a residence or within 69 feet of an agricultural, commercial, or industrial land use. Because of the programmatic nature of this analysis, it cannot be determined whether construction of indoor cultivation and noncultivation facilities would occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land use. Therefore, construction activity associated with future indoor cultivation or noncultivation facilities could exceed applicable County construction noise standards.

As detailed above, Alternative 3 prohibits the development of cannabis facilities within 1,000 feet of sensitive uses and expands the definition of “sensitive uses.” At 1,000 feet, construction noise levels associated with construction of commercial cannabis facilities would attenuate to 57.8 dBA L_{eq} and 61.8 dBA L_{max} (see Appendix D for detailed modeling inputs). Therefore, construction activity associated with Alternative 3 would not exceed the County’s construction average sound level standard of 75 dBA L_{eq} or 82 dBA L_{max} at any nearby noise-sensitive land uses, as defined under Alternative 3. As noted above, the 1,000-foot setback would not apply to all noise sensitive land uses (e.g., residential uses) as defined under the General Plan. Because of the programmatic nature of this analysis and because this alternative does not require a buffer from all sensitive land uses as defined under the General Plan, it cannot be guaranteed that construction would not occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land use.

Depending on the existing ambient noise levels of the proposed cannabis site, construction noise could result in a substantial temporary noise increase (i.e., +10 dBA) in the site vicinity. In accordance with Section 36.408 of the Regulatory Code, construction activities would occur during daytime hours (i.e., between 7:00 a.m. and 7:00 p.m.) when receptors are less sensitive to increased noise levels; however, the County has not adopted daytime construction noise exemptions. Commercial cannabis sites constructed under the Cannabis Program would be required to comply with Sections 36.408 and 36.409 of the Regulatory Code, which regulates construction-related noise to ensure that the applicable sound level standards would not be exceeded. However, considering that specific details of individual future commercial cannabis sites associated with the Cannabis Program—such as locations of future sites and their distances to sensitive receptors—are currently unknown, construction noise could result in a substantial temporary increase in noise at existing sensitive receptors as defined by the County General Plan, which includes residential uses, either because the County’s construction noise standard of 75 dBA L_{eq} would be exceeded or because construction activity would increase the ambient noise level at sensitive receptors beyond 10 dBA.

This impact would be significant for Alternative 3.

Alternative 4: Cannabis Program with Outdoor Cannabis Cultivation Prohibition

The Cannabis Program under Alternative 4 is anticipated to accommodate up to 212 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 4 would allow mixed-light and indoor cannabis cultivation only when contained within a building. Alternative 4 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of “sensitive uses” would be expanded beyond schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. In addition, cannabis activities would be limited to agricultural, commercial, and industrial zones as detailed in Section 1.6.1.4.

As detailed above, simultaneous operation of the 3 pieces of equipment (bulldozer, excavator, and grader) would generate a combined hourly average noise level of 83.8 dBA L_{eq} at 50 feet and a maximum noise level of 87.8 dBA L_{max} at 50 feet. Construction noise levels would exceed the County’s construction average sound level standard of 75 dBA L_{eq} within 138 feet

of construction activity and the County's maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) within 97 feet and 69 feet, respectively.

Under Alternative 4, no outdoor cannabis cultivation facilities would be permitted. Mixed-light cannabis cultivation would still be permitted within agricultural zones and would be required to be setback a minimum of 100 feet from all lot lines and a minimum of 300 feet from all residences on adjoining parcels as detailed in Section 1.6.1.4. At 300 feet, construction noise would attenuate to 68.2 dBA L_{eq} and 72.2 dBA L_{max} and thus would not exceed the County's exterior noise standard of 75 dBA L_{eq} or the residential maximum noise level of 82 dBA L_{max} . At 100 feet, construction noise would attenuate to 77.8 dBA L_{eq} and 81.8 dBA L_{max} at the nearest property. Therefore, even with adherence to the required setbacks, construction activity associated with mixed-light commercial cannabis facilities could exceed the County's construction average sound level standard of 75 dBA L_{eq} at nonresidential land uses.

If construction of such facilities were to take place within 138 feet of a nearby structure, the County's construction average sound level standard of 75 dBA L_{eq} would be exceeded. In addition, the County's maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) would be exceeded if construction activity were to take place within 97 feet of a residence or within 69 feet of an agricultural, commercial, or industrial land use. Because of the programmatic nature of this analysis, it cannot be determined whether construction would occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land use. Therefore, construction activity associated with future indoor cultivation or noncultivation facilities could exceed applicable County construction noise standards.

As detailed above, Alternative 4 would require a 1,000-foot buffer from schools, daycares, youth centers, regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. At 1,000 feet, noise levels associated with construction of commercial cannabis facilities would attenuate to 57.8 dBA L_{eq} and 61.8 dBA L_{max} (see Appendix D for detailed modeling inputs). Therefore, construction activity associated with Alternative 4 would not exceed the County's construction average sound level standard of 75 dBA L_{eq} or maximum noise level of 82 dBA L_{max} at any nearby noise-sensitive land uses, as defined under Alternative 4. The General Plan considers primary noise-sensitive land uses to include residential uses, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, and passive recreational parks (County of San Diego 2011: 8-4). Because of the programmatic nature of this analysis and because this alternative does not require a buffer from all sensitive land uses as defined under the General Plan, it cannot be guaranteed that construction would not occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land use.

Depending on the existing ambient noise levels of the proposed cannabis site, construction noise could result in a substantial temporary noise increase (i.e., +10 dBA) in the site vicinity. In accordance with Section 36.408 of the Regulatory Code, construction activities would occur during daytime hours (i.e., between 7:00 a.m. and 7:00 p.m.) when receptors are less sensitive to increased noise levels; however, the County has not adopted daytime construction noise exemptions. Commercial cannabis sites constructed under Alternative 4 would be required to comply with Sections 36.408 and 36.409 of the Regulatory Code, which regulates construction-related noise to ensure that the applicable sound level standards would not be

exceeded. However, considering that specific details of individual future commercial cannabis sites associated with the Alternative 4, such as locations of future sites and their distances to sensitive receptors, are currently unknown, it is not possible to conclude that construction activity associated with Alternative 4 would not result in a substantial temporary noise increase at existing sensitive receptors as defined by the County General Plan, which includes residential uses, either because the County's construction noise standard of 75 dBA L_{eq} would be exceeded or because construction activity would increase the ambient noise level at sensitive receptors beyond 10 dBA.

This impact would be significant under Alternative 4.

Alternative 5: Cannabis Program with Maximum 1 Acre of Outdoor Cannabis Cultivation Canopy

The Cannabis Program under Alternative 5 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 5 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of "sensitive uses" would be expanded beyond schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. Alternative 5 also limits the size of outdoor cannabis cultivation canopy to 1 acre. In addition, cannabis activities would be limited to agricultural, commercial, and industrial zones as detailed in Section 1.6.1.4.

As described under Alternative 2, simultaneous operation of the 3 pieces of equipment (bulldozer, excavator, and grader) would generate a combined hourly average noise level of 83.8 dBA L_{eq} at 50 feet and a maximum noise level of 87.8 dBA L_{max} at 50 feet. Construction noise levels would exceed the County's construction average sound level standard of 75 dBA L_{eq} within 138 feet of construction activity and the County's maximum noise level standard for residential uses (i.e., 82 dBA L_{max}) and agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) within 97 feet and 69 feet, respectively. The proposed 1,000-foot buffer under this alternative would not apply to all noise sensitive land uses (e.g., residential uses) as defined under the General Plan. Therefore, if construction activity were to take place within these distances, noise levels could exceed the applicable noise standards.

Proposed amendments to the Zoning Ordinance, as detailed in Section 1.6.1.4, require outdoor and mixed-light commercial cannabis uses to be setback a minimum of 100 feet from all lot lines and a minimum of 300 feet from all residences on adjoining parcels. At 300 feet, construction noise would attenuate to 68.2 dBA L_{eq} and 72.2 dBA L_{max} and thus would not exceed the County's exterior noise standard of 75 dBA L_{eq} or the residential maximum noise level of 82 dBA L_{max} . At 100 feet, construction noise would attenuate to 77.8 dBA L_{eq} and 81.8 dBA L_{max} at the nearest property. Therefore, even with adherence to the required setbacks, construction activity associated with future outdoor or mixed-light commercial cannabis facilities could still exceed the County's construction average sound level standard of 75 dBA L_{eq} at nonresidential uses.

As detailed above, if construction were to take place within 138 feet of a nearby structure, the County's construction average sound level standard of 75 dBA L_{eq} would be exceeded. In addition, the County's maximum noise level standard for agricultural, commercial, and industrial uses (i.e., 85 dBA L_{max}) would be exceeded if construction activity were to take place within 69 feet of agricultural, commercial, or industrial land uses. Because of the programmatic nature of this analysis, it cannot be guaranteed that construction related to indoor cultivation and noncultivation facilities would not occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land use. Therefore, construction activity associated with future indoor cultivation or noncultivation facilities could exceed applicable County noise standards. As detailed above, Alternative 5 would require a 1,000-foot buffer from schools, daycares, youth centers, regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. At 1,000 feet, construction noise levels associated with construction of commercial cannabis facilities would attenuate to 57.8 dBA L_{eq} and 61.8 dBA L_{max} (see Appendix D for detailed modeling inputs). Therefore, construction activity associated with Alternative 5 would not exceed the County's construction average sound level standard of 75 dBA L_{eq} or 82 dBA L_{max} at any nearby noise-sensitive land uses as defined under Alternative 5. The General Plan considers primary noise-sensitive land uses to include residential uses, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, and passive recreational parks (County of San Diego 2011: 8-4). The proposed 1,000-foot buffer would not apply to all noise-sensitive land uses as defined under the General Plan (e.g., residential uses). Therefore, due to the programmatic nature of this analysis, it cannot be determined whether construction would occur within 97 feet of a residence or 69 feet of an agricultural, commercial, or industrial land use.

Depending on the existing ambient noise levels of the proposed cannabis site, construction noise could result in a substantial temporary noise increase (i.e., +10 dBA) in the site vicinity. In accordance with Section 36.408 of the Regulatory Code, construction activities would occur during daytime hours (i.e., between 7:00 a.m. and 7:00 p.m.) when receptors are less sensitive to increased noise levels; however, the County has not adopted daytime construction noise exemptions. Commercial cannabis sites constructed under Alternative 5 would be required to comply with Sections 36.408 and 36.409 of the Regulatory Code, which regulates construction-related noise to ensure that the applicable sound level standards would not be exceeded. However, considering that specific details of individual future commercial cannabis sites associated with Alternative 5—such as locations of future sites and their distances to sensitive receptors—are currently unknown, construction noise could result in a substantial temporary increase in noise at existing sensitive receptors as defined by the County General Plan, which includes residential uses, either because the County's construction noise standard of 75 dBA L_{eq} would be exceeded or because construction activity would increase the ambient noise level at sensitive receptors beyond 10 dBA.

This impact would be significant for Alternative 5.

2.13.3.5 Issue 2: Excessive Long-Term Stationary Noise Levels

This section describes the potential for implementation of the Cannabis Program to result in excessive long-term stationary noise levels.

Guidelines for Determination of Significance

Appendix G of the State CEQA Guidelines establishes the following guideline for determining the significance of effects related to excessive noise levels:

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

The State CEQA thresholds provided by the *County of San Diego Guidelines for Determining Significance: Noise* (County of San Diego 2009) state that a significant impact would occur if implementation of the Cannabis Program would result in the exposure of any on- or off-site existing or reasonably foreseeable future noise-sensitive land use to exterior or interior noise in excess of the following standard:

- Result in a substantial permanent or temporary increase in ambient noise which would exceed the sound level limits specified in San Diego County Code Section 36.404, Sound Level Limits, at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise. The sound level standards in Section 36.404 are listed in Table 2.13.8, presented at the end of this section.

Impact Analysis

The operation of commercial cannabis facilities could result in long-term increases in stationary noise from the use of mechanical trimmers, generators, refrigerated storage containers, greenhouse fans, and loading activities. The major stationary noise sources from cannabis uses consist of the maintenance and harvest of cannabis at outdoor or mixed-light cultivation sites. Indoor cultivation and noncultivation uses (e.g., nursery, processing, manufacturing) are operated within buildings that substantially attenuate noise levels. In addition, under all alternatives of the Cannabis Program, a generator would not be used as the sole source of power for a cannabis facility and would not be used for cultivation except for temporary use in case of emergency. Section 36.417 of the Noise Abatement and Control Ordinance exempts certain uses, including agricultural operations, emergency generators, and property maintenance from the ordinance. Thus, these types of noise sources are not discussed further.

In addition, the Cannabis Program proposes the following amendments to the San Diego County Zoning Ordinance and Regulatory Code:

- Zoning Ordinance Section 6995(f)(3): All facilities shall comply with the Section 36.401 et seq. of the San Diego County Code of Regulatory Ordinances relating to Noise Abatement and Control, and General Plan Noise Element Tables N-1 and N-2 [presented as Tables 2.13.6 and 2.13.7, respectively, at the end of this section].
- Regulatory Code Section 21.2510(5)(A): A plan describing how the business will take proactive steps to avoid becoming a nuisance or having negative impacts on its neighbors or surrounding community. The neighborhood compatibility plan should describe how the business will react and respond to complaints specifically related to noise, light, public consumption, loitering, littering, and vehicle and pedestrian traffic, and any other activities that could become a nuisance or have impacts on the surrounding community.

Alternative 1: No Project—Retention of Current Cannabis Regulations

Under Alternative 1, the Cannabis Program would not be adopted. The existing 5 commercial cannabis facilities in the unincorporated areas of El Cajon, Escondido, and Ramona would be allowed to continue to operate as well as expand their existing facilities and operations to a total of 10,000 square feet of building area for each site. However, no new cultivation or noncultivation activities would occur.

Expanded facilities under Alternative 1 would include stationary noise sources similar to those used under existing conditions (e.g., mechanical equipment). According to the conservative assumption that expanded facilities would double the amount of on-site operational equipment and applying the acoustical principle that a doubling of sound energy corresponds to a 3 dB increase, stationary noise levels could increase up to 3 dB. Generally, a 3 dB increase in sound is perceived as barely detectable (Caltrans 2013). In addition, existing facilities would be required to comply with applicable County guidelines, standards, and specifications related to operational noise, such as Section 36.404(a) of the Regulatory Code. Adherence to these standards and policies would ensure that noise impacts related to additional stationary noise sources would be reduced such that they would not exceed County standards.

This impact would be less than significant under Alternative 1.

Alternative 2: Proposed Project—Cannabis Program Consistent with State Requirements

The Cannabis Program under Alternative 2 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 2 would include 600-foot buffers from cannabis uses from certain state-defined sensitive uses, including schools, daycares, and youth centers.

Noise sources associated with the operation of commercial cannabis facilities could include mechanical equipment (e.g., mechanized trimmers), dehumidifiers and refrigerated storage, loading activities, and temporary cannabis events. While these noise sources are associated with commercial cannabis facilities, Section 21.2510(5)(A) of the proposed Regulatory Code would require individual commercial cannabis applicants to prepare a neighborhood compatibility plan that would include a description of how the business would take proactive steps to avoid becoming a nuisance or having negative impacts on its neighbors and surrounding community, including how the business will react and respond to complaints specifically related to noise.

An analysis of noise impacts related to these stationary noise sources is provided below.

Mechanical Equipment Noise

Although it is anticipated that most trimming would be conducted by hand, motorized trimmers for trimming commercial cannabis plants could be used. For a conservative analysis, a reference noise level for a hedge trimmer, which generates 81 dB at 3 feet (Berger et al 2015) is used in this analysis. This noise is similar to that of landscape maintenance equipment typically used at residential land uses, such as a lawn mower. As detailed in Section 1.6.1.4, with the implementation of the Cannabis Program, all processing activities at cannabis cultivation sites—including trimming of cannabis—would be required to occur within an enclosed, permanent structure. A standard enclosed building would be expected to achieve at least a 20-dBA reduction in noise (Caltrans 2013: 7-17). Assuming a 20-dBA reduction in

noise, noise associated with a motorized trimmer would exceed the applicable sound level limits for residential uses (i.e., 50 dBA L_{eq}) and commercial or industrial uses (i.e., 60 dBA L_{eq}) within 11 feet and 6 feet, respectively. Under the Cannabis Program, outdoor and mixed-light cultivation facilities would be setback 100 feet from surrounding property lines and thus would not exceed applicable sound level limits. In addition, pursuant to Section 36.417.B(2) of the Noise Abatement and Control Ordinance, equipment associated with agricultural operations is exempt from the ordinance if operations would not take place between 7:00 p.m. and 7:00 a.m. Therefore, mechanical equipment associated with cannabis cultivation uses would not exceed the County's applicable sound level limits for residential uses (i.e., 50 dBA L_{eq}) and commercial or industrial uses (i.e., 60 dBA L_{eq}).

Dehumidifiers and Refrigerated Storage

Noise sources associated with the operation of commercial cannabis cultivation sites could include the use of refrigerated storage units with externally mounted air conditioning units and dehumidifiers to store fresh frozen commercial cannabis after harvest. These noise sources would generate similar noise levels to HVAC equipment. Noise levels from HVAC equipment vary substantially depending on unit efficiency, size, and location but generally range from 60 to 70 dBA L_{eq} at 3 feet (Carrier 2022). Conservatively assuming HVAC units operate at a reference level of 70 dBA L_{eq} at 3 feet, noise from HVAC units would exceed the daytime sound level limits for residential uses (i.e., 50 dBA L_{eq}) and the nighttime sound level limits for residential uses (i.e., 45 dBA L_{eq}) within 30 feet and 54 feet, respectively. HVAC equipment would exceed the County's sound level limits for commercial and industrial uses (i.e., 60 dBA L_{eq}) within 10 feet. Proposed amendments to the Zoning Ordinance, as detailed in Section 1.6.1.4, require outdoor and mixed-light cannabis cultivation facilities to be setback a minimum of 100 feet from all lot lines and a minimum of 300 feet from all residences on adjoining parcels existing at the time of permit application submittal. Therefore, outdoor and mixed-light cannabis cultivation facility noise related to dehumidifiers and refrigerated storage would not result in an exceedance of residential, commercial, or industrial use noise limits.

Loading Activities

Delivery activities generate noise associated with truck arrivals and departures from unloading areas, truck backing, air brakes, and other truck loading-related noise. According to a noise measurement conducted by Ascent on April 20, 2023, at a loading and unloading dock at an Anheuser-Bush facility, noise from delivery truck activity can reach levels of 59 dB L_{eq} at 100 feet (Ascent 2023a). Commercial cannabis facilities requiring loading docks would generally be related to larger outdoor, mixed-light, and distribution facilities. Outdoor and mixed-light facilities would be located at least 300 feet from the nearest residence and 100 feet from all lot lines, in accordance with the performance standards proposed as part of the Cannabis Program. From distance alone, noise from loading dock activity would attenuate to 49.5 dBA L_{eq} and 59 dBA L_{eq} and thus would not exceed the applicable daytime sound level limits for residential uses (i.e., 50 dBA L_{eq}) and commercial or industrial uses (i.e., 60 dB L_{eq}). However, even with adherence to the required 300-foot setback, loading activities at outdoor and mixed-light facilities could exceed the nighttime sound level limits for residential uses (i.e., 45 dBA L_{eq}). Under the Cannabis Program, distribution facilities would be permitted in the M50, M52, M54, M56, and M58 zones. Applying the reference noise level of 59 dB L_{eq} at 100 feet, noise associated with loading activities would exceed the sound level limit for zones M50, M52, and M54 (i.e., 70 dB L_{eq}) within 30 feet and the sound level limit for zones M56 and M58 (i.e., 75 dB L_{eq}) within 16 feet. See Appendix D for noise modeling. Because of the programmatic

nature of this analysis, it cannot be determined whether distribution facilities would be located within 30 feet of adjacent land use. Therefore, loading dock activities at distribution facilities could result in an exceedance of applicable County noise standards at nearby land uses.

Temporary Cannabis Events

The Cannabis Program would allow for licensed temporary cannabis events to be held on private property in C35, C36, C37, C38, C40, M50, M52, M54, M56, and M58 zones. Temporary cannabis events are not allowed at cannabis facilities, except for storefront retail facilities. Noise associated with temporary cannabis events could include elevated voices, parking lot activity, and amplified music or sound. Potential noise levels associated with activities anticipated to occur at temporary cannabis events are provided in Table 2.13.11 and can range from 60–72 dB at 50 feet. Temporary cannabis events would be required to comply with Section 36.401 et seq. of the Regulatory Code, which establishes restrictions on devices used for the production or reproduction of sound, including that operation of such a device shall not be plainly audible at 50 feet or more from the building or structure in which it is located. Proposed amendments to the Zoning Ordinance under Section 6129, Temporary Cannabis Events, would require that temporary cannabis events be setback 600 feet from residential zones and other cannabis sensitive uses and that Temporary Cannabis Event licenses would only be issued for up to 4 consecutive days, consisting of no more than 2 days of operation and 2 days for setup and breakdown/cleanup, beginning no earlier than 10:00 a.m. and ending no later than 10:00 p.m. Temporary cannabis events would be required to adhere to these requirements and as a result, would not generate noise levels that would exceed County noise standards as specified in Section 36.401 et seq. of the Regulatory Code and General Plan Policy N-1.1 or result in a substantial noise increase during more sensitive times of day (i.e., between 10:00 p.m. and 7:00 a.m.). Furthermore, under the Cannabis Program, cannabis facilities would be required to establish a neighborhood compatibility plan that describes noise complaint response. Compliance with these policies and regulations would ensure that noise related to temporary cannabis events would not expose sensitive receptors to noise that would exceed County noise standards or result in public health effects (e.g., sleep disturbance).

Summary

As discussed above, the implementation of the Cannabis Program would result in the development of commercial cannabis facilities, which would include new noise-generating stationary equipment (e.g., mechanical trimmers, generators) and activity areas (e.g., loading docks). Specific building footprints, locations, and the locations of stationary equipment are currently unknown; thus, it is possible that stationary noise sources could be located within distances that expose existing sensitive receptors to noise levels that exceed County noise regulations. Specifically, loading dock activities associated with distribution facilities could exceed the applicable County thresholds at nearby land uses. As detailed above, Section 6995(f)(3) of the proposed Zoning Ordinance under the Cannabis Program would require all facilities to comply with Section 36.401 et seq. of the San Diego County Code of Regulatory Ordinances relating to Noise Abatement and Control and General Plan Noise Element Tables N-1 and N-2 (presented as Tables 2.13.6 and 2.13.7, respectively, at the end of this section). However, it cannot be guaranteed that noise associated with loading activity at cannabis distribution facilities would operate at noise levels below the listed thresholds and, and thus, the Cannabis program would not be consistent with the General Plan.

This impact would be significant under Alternative 2.

Alternative 3: Cannabis Program with Expanded County Regulations

The Cannabis Program under Alternative 3 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 3 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of “sensitive uses” would be expanded beyond schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

Noise sources associated with the operation of commercial cannabis facilities could include mechanical equipment (e.g., trimmers), dehumidifiers and refrigerated storage, loading activities, and temporary cannabis events. As discussed under Alternative 2, noise sources associated with operation of loading docks at cannabis distribution facilities could exceed applicable County noise standards. Section 6995(f)(3) of the proposed Zoning Ordinance under the Cannabis Program would require all facilities to comply with Section 36.401 et seq. of the San Diego County Code of Regulatory Ordinances relating to Noise Abatement and Control and General Plan Noise Element Tables N-1 and N-2 (presented as Tables 2.13.6 and 2.13.7, respectively, at the end of this section). However, it cannot be guaranteed that noise associated with loading activities at cannabis distribution facilities would operate at noise levels below the listed thresholds, and thus, the Cannabis program would not be consistent with the General Plan.

This impact would be significant under Alternative 3.

Alternative 4: Cannabis Program with Outdoor Cannabis Cultivation Prohibition

The Cannabis Program under Alternative 4 is anticipated to accommodate up to 212 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 4 would allow mixed-light and indoor cannabis cultivation only when contained within a building. Alternative 4 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of “sensitive uses” would be expanded beyond schools, daycares, and youth centers, to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

Noise sources associated with the operation of cannabis cultivation facilities could include mechanical equipment (e.g., trimmers), dehumidifiers and refrigerated storage, loading activities, and temporary events. As discussed under Alternative 2, noise sources associated with operation of loading docks at commercial cannabis distribution facilities could exceed County noise standards. Section 6995(f)(3) of the proposed Zoning Ordinance under the Cannabis Program would require all facilities to comply with Section 36.401 et seq. of the San Diego County Code of Regulatory Ordinances relating to Noise Abatement and Control and General Plan Noise Element Tables N-1 and N-2 (presented as Tables 2.13.6 and 2.13.7, respectively, at the end of this section). However, it cannot be guaranteed that noise

associated with loading activities at cannabis distribution facilities would operate at noise levels below the listed thresholds, and thus, the Cannabis program would not be consistent with the General Plan.

This impact would be significant under Alternative 4.

Alternative 5: Cannabis Program with Maximum 1 Acre of Outdoor Cannabis Cultivation Canopy

The Cannabis Program under Alternative 5 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 5 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of “sensitive uses” would be expanded beyond schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. Alternative 5 also limits the size of outdoor cannabis cultivation canopy to 1 acre.

Noise sources associated with the operation of commercial cannabis facilities could include mechanical equipment (e.g., trimmers), dehumidifiers and refrigerated storage, loading activities, and temporary events. As discussed under Alternative 2, noise sources associated with operation of loading docks at commercial cannabis distribution facilities could exceed County noise standards. Section 6995(f)(3) of the proposed Zoning Ordinance under the Cannabis Program would require all facilities to comply with Section 36.401 et seq. of the San Diego County Code of Regulatory Ordinances relating to Noise Abatement and Control and General Plan Noise Element Tables N-1 and N-2 (presented as Tables 2.13.6 and 2.13.7, respectively, at the end of this section). However, it cannot be guaranteed that noise associated with loading activities at cannabis distribution facilities would operate at noise levels below the listed thresholds, and thus, the Cannabis program would not be consistent with the General Plan.

This impact would be significant under Alternative 5.

2.13.3.6 Issue 3: Excessive Long-Term Traffic Noise Levels

Guidelines for Determination of Significance

Appendix G of the State CEQA Guidelines establishes the following guideline for determining significance of effects related to excessive noise levels:

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

The State CEQA thresholds provided by the *County of San Diego Guidelines for Determining Significance: Noise* (County of San Diego 2009) state that a significant impact would occur if implementation of the Cannabis Program would result in the exposure of any on- or off-site

existing or reasonably foreseeable future noise-sensitive land use to exterior or interior noise in excess of any of the following levels:

- Exterior locations:
 - Roadways and all other noise sources: 60 or 65 dBA CNEL in the Noise Compatibility Guidelines, as identified in Table 2.13.6, or an increase in 10 dBA CNEL over preexisting noise in areas where the ambient noise level is 49 dBA CNEL or less.
 - Railroads: 60 dBA CNEL or an increase of 10 dBA CNEL over preexisting noise in areas where the ambient noise level is 49 dBA CNEL or less.
- Interior locations:
 - 45 dBA CNEL

Impact Analysis

The Cannabis Program could result in long-term traffic noise increases. As detailed in Section 2.13.1.1, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noise environments corresponding to a doubling of sound energy. Thus, regarding traffic noise specifically, a noticeable increase in traffic noise could occur with a doubling in the volume of traffic on a roadway.

Alternative 1: No Project—Retention of Current Cannabis Regulations

Under Alternative 1, the Cannabis Program would not be adopted. The existing 5 commercial cannabis facilities in the unincorporated areas of El Cajon, Escondido, and Ramona would be allowed to continue to operate and expand their existing facilities and operations to a total of 10,000 square feet of building area at each site. However, no new commercial cannabis uses would be allowed.

The existing 5 commercial cannabis facilities are located within developed areas and are surrounded by existing commercial and industrial land uses. The expansion of existing facilities under Alternative 1 could result in an increased number of daily trips from new employees or increased operations. However, given that the roadways surrounding each existing cannabis facility are used by other nearby commercial and industrial land uses, it is unlikely that the expansion of existing cannabis facilities would double traffic volumes along the surrounding roadway network and thus would not result in a perceptible increase in traffic noise (i.e., 3+ dB). In addition, existing commercial cannabis facilities would be required to be consistent with County General Plan policies. General Plan Policy N-2.1 would require an acoustical study if the expansion of existing facilities could directly result in existing or future noise sensitive land uses being subject to noise levels equal or greater than 60 CNEL.

The impact would be less than significant under Alternative 1.

Alternative 2: Proposed Project—Cannabis Program Consistent with State Requirements

The Cannabis Program under Alternative 2 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development

assumptions). Alternative 2 would include 600-foot buffers from cannabis uses from certain state-defined sensitive uses including schools, day cares, and youth centers.

The Cannabis Program does not propose to change any land use designations or zoning districts in the county. Rather, it allows for cannabis facilities to operate on land zoned for agricultural, commercial, and industrial uses. As discussed above in Section 2.13.3.3, “Approach to Analysis,” under the subheading “Construction Noise,” while it remains reasonably foreseeable that a licensee could seek to develop new structures to support new commercial cannabis facilities, most noncultivation facilities would be located within existing developed uses. That is, future cannabis facilities, other than outdoor cultivation, would generally replace other industrial and commercial businesses. According to SANDAG’s (*Not So*) *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, standard commercial office buildings generate a rate of 20 ADT per 1,000 square feet (sf); industrial business parks, with commercial uses, generate 16 ADT per 1,000; and agricultural uses generate 2 ADT per acre. In contrast, as reported in Section 2.16, “Transportation,” cannabis businesses would by comparison generate a reduced trip generation rate, which would range from 0.69 ADT per 1,000 square feet for processing and cultivation operations to 7 ADT per 1,000 square feet for testing facilities. Thus, given the land use types where cannabis facilities would be allowed to operate (i.e., agricultural, industrial, and commercial), ADT is projected to be comparatively lower than projected within SANDAG’s regional planning assumptions for these land use types (SANDAG 2002).

As detailed in Table 1.4, under Alternative 2, cultivation activities could occur on up to 2,680,304 square feet of building area, nursery activities could occur on up to 1,680,000 sf of building area; processing activities could occur on up to 32,500 sf of building area; manufacturing could occur on up to 67,500 sf of building area; testing could occur on up to 5,600 sf of building area; and distribution activities could occur on up to 72,000 sf of building area. Applying the trip generation rates as shown in Table 2.13.13 (presented at the end of this section), Alternative 2 could result in 4,184 ADT. As shown in Figure 1.2, the areas where commercial cannabis uses would be permitted is extensive; thus, these daily trips are anticipated to be widely spread across the roadway network such that they are not anticipated to result in a doubling of traffic volumes that would create a significant traffic noise increase or impact. In addition, in accordance with County guidelines, in areas where existing noise levels are 49 dBA CNEL or less, an increase of 10 dBA CNEL or more over preexisting noise levels would be considered substantial (County of San Diego 2009). To result in a 10 dBA CNEL increase, traffic volumes along an individual roadway would need to more than double. Because facilities would be distributed across the unincorporated county, it is likely that subsequent cannabis sites licensed under the Cannabis Program would not double traffic volumes along the surrounding roadway network resulting in a perceptible (i.e., 3+ dB) increase in traffic noise.

As discussed in Section 2.14, “Population and Housing,” SANDAG produces employment forecasts for the San Diego region and its 18 cities. From 2023 to 2050, employment in the San Diego region is forecast to increase from 1,561,500 jobs to 2,086,318 jobs, an increase of 524,818 jobs or 33.6 percent (EDD 2024; SANDAG 2021). As discussed under Issue 1 in Section 2.14, “Population and Housing,” implementation of the Cannabis Program under Alternative 2 would not induce substantial unplanned population growth, in part because additional jobs would be filled by existing and future residents in the region and could readily be accommodated by the projected population growth. That is, employment opportunities are

projected to increase through 2050, and some of these employment opportunities would be within the cannabis industry.

While the Cannabis Program would allow for commercial cannabis facilities to operate in the County, the establishment of new commercial cannabis businesses would be related to economic conditions, as well as other local social conditions, such as product interest and worker availability. However, because cannabis facilities would generally be located within existing developed buildings and would produce a lower ADT rate than typical uses within commercial, industrial, and agricultural land use types, as discussed above, there would not be a substantial increase in traffic throughout the county. Traffic volumes from operational trips, including employee commutes, are not expected to result in excessive long-term increases in traffic noise along individual roadway segments throughout the unincorporated county. In addition, subsequent projects would be required to be consistent with County General Plan policies. General Plan Policy N-2.1 would require an acoustical study if subsequent projects could directly result in existing or future noise sensitive land uses being subject to noise levels equal or greater than 60 CNEL. Therefore, because the Cannabis Program would not induce a substantial increase in vehicular trips in the county, it would not result in increased transportation-related ambient noise levels.

This impact would be less than significant under Alternative 2.

Alternative 3: Cannabis Program with Expanded County Regulations

The Cannabis Program under Alternative 3 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 3 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

As discussed above under Alternative 2, while the Cannabis Program would allow for commercial cannabis facilities to operate in the county, the establishment of new commercial cannabis businesses would be related to economic conditions, as well as other local social conditions, such as product interest and worker availability. However, because cannabis facilities would generally be located within existing developed buildings and would produce a lower ADT rate than typical uses within commercial, industrial, and agricultural land use types, as discussed above, there would not be a substantial increase in traffic throughout the county. Similar to Alternative 2, applying the trip generation rates as shown in Table 2.13.13 (presented at the end of this section), Alternative 3 could result in 4,184 ADT. As shown in Figure 1.2, the program area is extensive; and thus, these daily trips are anticipated to be widely spread across the roadway network. Thus, traffic volumes from operational trips, including employee commutes, are not expected to result in excessive long-term increases in traffic noise along individual roadway segments throughout the unincorporated county. In addition, as identified under Alternative 2, subsequent projects would be required to comply with County General Plan policies as described above. Therefore, because the Cannabis Program would not induce a substantial increase in vehicular trips in the county, it would not result in increased transportation-related ambient noise levels.

This impact would be less than significant under Alternative 3.

Alternative 4: Cannabis Program with Outdoor Cannabis Cultivation Prohibition

The Cannabis Program under Alternative 4 is anticipated to accommodate up to 212 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 4 would allow mixed-light and indoor cannabis cultivation only when contained within a building. Alternative 4 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

As discussed above under Alternative 2, while the Cannabis Program would allow for commercial cannabis facilities to operate in the county, the establishment of new commercial cannabis businesses would be related to economic conditions, as well as other local social conditions, such as product interest and worker availability. However, because cannabis facilities would generally be located within existing developed buildings and would produce a lower ADT rate than typical uses within commercial, industrial, and agricultural land use types, as discussed above, there would not be a substantial increase in traffic throughout the county. Under Alternative 4, cultivation activities could occur on up to 2,002,524 square feet of building area. The building area for other cannabis facilities would be the same as described under Alternative 2. Applying the trip generation rates as shown in Table 2.13.13 (presented at the end of this section), Alternative 4 could result in 4,507 ADT. As shown in Figure 1.2, the program area is extensive, and thus traffic volumes from operational trips, including employee commutes, are not expected to result in excessive long-term increases in traffic noise along individual roadway segments throughout the unincorporated county. In addition, as identified under Alternative 2, subsequent projects would be required to comply with County General Plan policies as described above. Therefore, because the Cannabis Program would not induce a substantial increase in vehicular trips in the county, it would not result in increased transportation-related ambient noise levels.

This impact would be less than significant under Alternative 4.

Alternative 5: Cannabis Program with Maximum 1 Acre of Outdoor Cannabis Cultivation Canopy

The Cannabis Program under Alternative 5 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 5 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. Alternative 5 also limits the size of outdoor cannabis cultivation canopy to 1 acre.

As discussed above under Alternative 2, while the Cannabis Program would allow for commercial cannabis facilities to operate in the county, the establishment of new commercial cannabis businesses would be related to economic conditions, as well as other local social conditions, such as product interest and worker availability. However, because cannabis facilities would generally be located within existing developed buildings and would produce a lower ADT rate than typical uses within commercial, industrial, and agricultural land use types, as discussed above, there would not be a substantial increase in traffic throughout the county. Similar to Alternative 2, applying the trip generation rates as shown in Table 2.13.13 (presented at the end of this section), this alternative could result in approximately 4,184 ADT.

As shown in Figure 1.2, the program area is extensive; and thus, these daily trips are anticipated to be widely spread across the roadway network. Therefore, traffic volumes from operational trips, including employee commutes, are not expected to result in excessive long-term increases in traffic noise along individual roadway segments throughout the unincorporated county. In addition, as identified under Alternative 2, subsequent projects would be required to comply with County General Plan policies as described above. Therefore, because the Cannabis Program would not induce a substantial increase in vehicular trips in the county, it would not result in increased transportation-related ambient noise levels.

This impact would be less than significant under Alternative 5.

2.13.3.7 Issue 4: Excessive Groundborne Vibration

Guidelines for Determination of Significance

Appendix G of the State CEQA Guidelines establishes the following guideline for determining significance of effects related to excessive groundborne vibration:

- Result in generation of excessive groundborne vibration or groundborne noise levels.

The State CEQA thresholds provided by the *County of San Diego Guidelines for Determining Significance: Noise* (County of San Diego 2009) state that a significant impact would occur if the project would result in exposure of vibration sensitive uses to groundborne vibration and noise equal to or in excess of the levels shown in Table 4, Groundborne Vibration and Noise Standards of the guidelines (Table 2.13.10, presented at the end of this section), or if new sensitive land uses would be located in the vicinity of groundborne vibration inducing land uses, such as railroads or mining operations. The groundborne vibration and noise standards identify the following 3 land use categories with increasing sensitivity to groundborne vibration and noise impacts:

- a. Category 1: Buildings where low ambient vibration is essential for interior operations (research and manufacturing facilities with special vibration constraints)
- b. Category 2: Residences and buildings where people normally sleep (hotels, hospitals, residences, and other sleeping facilities)
- c. Category 3: Institutional land uses with primarily daytime use (schools, churches, libraries, other institutions, and quiet offices)

A project would result in a significant impact if frequent events would exceed 0.0018 in/sec RMS for Category 1 land uses, 0.004 in/sec RMS for Category 2, and 0.0056 in/sec RMS for Category 3. Occasional or infrequent events (fewer than 70 vibration events per day) would be considered a significant impact if they would exceed 0.0018 in/sec RMS for Category 1 land uses, 0.010 in/sec RMS for Category 2, and 0.014 in/sec RMS for Category 3. According to reference vibration levels for typical construction equipment that would be used shown in Table 2.13.10, a small bulldozer could generate ground vibration levels of 0.003 PPV in/sec and 58 VdB at 25 feet (FTA 2018). Because the use of a small bulldozer would likely not require frequent use, this analysis applies the County of San Diego criteria of 0.0018 in/sec RMS for Category 1 land uses, 0.010 in/sec RMS for Category 2, and 0.014 in/sec RMS for Category 3 for occasional or infrequent events (i.e., fewer than 70 vibrations per day).

The County of San Diego does not have established thresholds for structural damage due to vibration. Therefore, in the absence of local vibration standards, the FTA threshold for structural building damage of 0.20 PPV in/sec is used.

Impact Analysis

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increased distance. The effects of ground vibration from construction activity may be imperceptible at the lowest levels, result in a detectable low rumbling sound and detectable vibrations at moderate levels, and at the highest levels, can cause annoyance, sleep disturbance, or damage to nearby structures. Table 2.13.10, presented at the end of this section, provides a list of vibration levels for pieces of typical equipment that could be used during construction of commercial cannabis sites associated with the Cannabis Program.

According to reference vibration levels for typical construction equipment shown in Table 2.13.10, presented at the end of this section, a small bulldozer could generate the greatest level of ground vibration of 0.003 PPV in/sec and 58 VdB at 25 feet (FTA 2018). Because the use of a small bulldozer would likely not require frequent use, this analysis applies the County of San Diego criteria of 0.0018 in/sec RMS for Category 1 land uses, 0.010 in/sec RMS for Category 2, and 0.014 in/sec RMS for Category 3 for occasional or infrequent events (i.e., fewer than 70 vibrations per day). According to the FTA recommended procedure for applying a propagation adjustment to reference levels, vibration levels from the use of a small bulldozer could exceed the threshold of significance for Category 1 land uses (i.e., 0.0018 in/sec RMS) within 14 feet and the thresholds for Category 2 land uses (0.010 in/sec RMS) and Category 3 land uses (0.014 in/sec RMS) within 5 feet and 4 feet, respectively. The FTA threshold for structural damage to normal buildings (i.e., 0.20 in/sec PPV) would be exceeded within 2 feet of small bulldozer use. See Appendix D for modeling details.

Alternative 1: No Project—Retention of Current Cannabis Regulations

Under Alternative 1, the Cannabis Program would not be adopted. The existing 5 commercial cannabis facilities in the unincorporated areas of El Cajon, Escondido, and Ramona would be allowed to continue to operate and expand their existing facilities and operations to a total of 10,000 square feet of building area at each site. However, no new commercial cannabis uses would be allowed.

Construction activities associated with the expansion of existing cannabis facilities are anticipated to be minor and would typically include the use of bulldozers and hand tools. If the operation of a small bulldozer were to occur within 14 feet of a Category 1 building, 5 feet of a Category 2 building, or 4 feet of a Category 3 building, it would exceed the County of San Diego thresholds for human response to vibration events (i.e., 0.0018 in/sec RMS, 0.010 in/sec RMS, and 0.014 in/sec RMS, respectively). If the operation of a small bulldozer were to occur within 2 feet of an existing structure, it would exceed the FTA threshold for structural damage (i.e., 0.20 in/sec PPV). The existing 5 commercial cannabis facilities are located more than 125 feet from the nearest structures; thus, construction activity associated with facility expansion would not exceed the County standards for human response or the FTA threshold for structural damage. In addition, as required by Section 36.408 of the County Noise Abatement and Control Ordinance, construction activities would only occur Monday through Saturday between

the daytime hours of 7:00 a.m. and 7:00 p.m. and thus would be limited to less-sensitive hours of the day. The use of a small bulldozer and other construction equipment would not occur during evening or nighttime hours and therefore, would not result in adverse health effects (i.e., sleep disturbance) at nearby sensitive land uses.

The impact would be less than significant under Alternative 1.

Alternative 2: Proposed Project—Cannabis Program Consistent with State Requirements

The Cannabis Program under Alternative 2 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 2 would include 600-foot buffers from cannabis uses from certain state-defined sensitive uses, including schools, daycares, and youth centers.

Human Response

Under the Cannabis Program, outdoor or mixed-light cannabis cultivation sites would be located at least 100 feet from all lot lines and would be allowed only in agricultural zones. Therefore, vibration generated from the construction of an outdoor or mixed-light cannabis facility would not impact Category 1 buildings (i.e., research and manufacturing facilities with special vibration constraints) because these uses are not permitted within agricultural zones. At 100 feet, vibration from use of a small bulldozer would attenuate to below 0.001 in/sec RMS. Thus, vibration generated from the construction of an outdoor or mixed-light cannabis facility would not exceed the County of San Diego criteria of 0.010 in/sec RMS for Category 2 buildings (i.e., residential uses) or 0.014 in/sec RMS for Category 3 buildings (i.e., institutional uses). Other cannabis use types (e.g., storefront retail, manufacturing, microbusiness) would be allowed in agricultural, commercial, and industrial zones. The Cannabis Program would require all commercial cannabis facilities to maintain a 600-foot buffer from K-12 schools, daycares, and youth centers. At 600 feet, vibration levels from use of a small bulldozer would attenuate to below 0.00010 in/sec RMS and, thus, would not exceed the County of San Diego Category 2 or Category 3 vibration thresholds. In addition, as required by Section 36.408 of the County Noise Abatement and Control Ordinance, construction activities would only occur Monday through Saturday between the daytime hours of 7:00 a.m. and 7:00 p.m. and thus would be limited to the less sensitive hours of the day. The use of a small bulldozer and other construction equipment would not occur during evening or nighttime hours and therefore, would not result in adverse health effects (i.e., sleep disturbance) at nearby sensitive land uses.

Structural Damage

The FTA threshold for structural damage to normal buildings (i.e., 0.20 in/sec PPV) would be exceeded within 2 feet of use of a small bulldozer. As detailed above, in accordance with the Zoning Ordinance, all outdoor and mixed-light cannabis cultivation facilities under the Cannabis Program would be required to be located at least 100 feet from the nearest lot line and 300 feet from residences on adjoining parcels. Therefore, vibration generated from the construction of future outdoor or mixed-light commercial cannabis facilities would not exceed the FTA criteria of 0.20 in/sec PPV for structural damage. In addition, construction of future indoor cultivation and noncultivation cannabis uses would not be expected to take place within 2 feet of any existing structure. Therefore, construction would not exceed FTA’s threshold for structural damage of 0.20 in/sec PPV.

Vibration Summary

Typical construction activities associated with future cannabis facilities are anticipated to be minor (e.g., remodeling) and would not require the use of heavy equipment. Construction equipment associated with cannabis cultivation and noncultivation facilities would typically include bulldozers and hand tools. If the use of a small bulldozer were to occur within 14 feet of a Category 1 building, 5 feet of a Category 2 building, or 4 feet of a Category 3 building, it would exceed the County of San Diego thresholds for human response to vibration events (i.e., 0.0018 in/sec RMS, 0.010 in/sec RMS, and 0.014 in/sec RMS, respectively). Because of the required setback of 100-feet for outdoor and mixed-light cannabis cultivation facilities that would be implemented under the Cannabis Program, it is not anticipated that vibration levels associated with these facilities would exceed FTA standards for structural damage or human response. In addition, construction of cannabis facilities involving the use of a small bulldozer would not be expected to take place within 14 feet of any structure, and thus would not exceed County standards for adverse human response or FTA thresholds for structural damage. In addition, as required by Section 36.408 of the County Noise Abatement and Control Ordinance, construction activities would only occur Monday through Saturday between the daytime hours of 7:00 a.m. and 7:00 p.m. and thus would be limited to the less sensitive hours of the day. The use of a small bulldozer and other construction equipment would not occur during evening or nighttime hours and therefore would not result in adverse health effects (i.e., sleep disturbance).

This impact would be less than significant under Alternative 2.

Alternative 3: Cannabis Program with Expanded County Regulations

The Cannabis Program under Alternative 3 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 3 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of "sensitive uses" would be expanded beyond schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

As discussed above under Alternative 2, if construction activities that involve the use of a small bulldozer were to occur within 2 feet of a structure, they could exceed the FTA criteria of 0.20 in/sec PPV for damage to nonengineered timber and masonry buildings. In addition, if the use of a small bulldozer were to occur within 14 feet of a Category 1 building or within 5 feet of a Category 2 building, it would exceed the County of San Diego thresholds for human response to vibration events (i.e., 0.0018 in/sec RMS, 0.010 in/sec RMS, and 0.014 in/sec RMS, respectively). Because of the required setbacks of 100-feet for outdoor and mixed-light cannabis cultivation facilities and 1,000-feet from sensitive uses that would be implemented under this alternative, it is not anticipated that vibration levels associated with these facilities would exceed County standards for human response. In addition, in accordance with Section 36.408 of the County Noise Abatement and Control Ordinance, construction activities would take place only between 7:00 a.m. and 7:00 p.m. and thus would not result in adverse human response (i.e., sleep disruption). Furthermore, it is not expected that construction of other commercial cannabis facilities (e.g., manufacturing, storefront facilities) would be located within

2 feet of existing structures, and thus such construction activities would not exceed the FTA thresholds for structural damage.

This impact would be less than significant under Alternative 3.

Alternative 4: Cannabis Program with Outdoor Cannabis Cultivation Prohibition

The Cannabis Program under Alternative 4 is anticipated to accommodate up to 212 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 4 would allow mixed-light and indoor cannabis cultivation only when contained within a building. Alternative 4 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of “sensitive uses” would be expanded beyond schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

As discussed above under Alternative 2, if construction activities that involve the use of a small bulldozer were to occur within 2 feet of a structure, they could exceed the FTA criteria of 0.20 in/sec PPV for damage to nonengineered timber and masonry buildings. In addition, if the use of a small bulldozer were to occur within 14 feet of a Category 1 building, 5 feet of a Category 2 building, or 4 feet of a Category 3 building, it would exceed the County of San Diego thresholds for human response to vibration events (i.e., 0.0018 in/sec RMS; 0.010 in/sec RMS; 0.014 in/sec RMS, respectively). With adherence to the required setbacks, it is not anticipated that vibration levels associated with indoor cannabis facilities would exceed County standards for human response. In addition, in accordance with Section 36.408 of the County Noise Abatement and Control Ordinance, construction activities would take place only between 7:00 a.m. and 7:00 p.m. and thus would not result in adverse human response (i.e., sleep disruption). Furthermore, it is not expected that construction of other commercial cannabis facilities would be located within 2 feet of existing structures, and thus such construction activities would not exceed the FTA thresholds for structural damage.

This impact would be less than significant under Alternative 4.

Alternative 5: Cannabis Program with Maximum 1 Acre of Outdoor Cannabis Cultivation Canopy

The Cannabis Program under Alternative 5 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 5 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses. The definition of “sensitive uses” would be expanded beyond schools, daycares, and youth centers to also include regional parks, local parks, public trails, recreation facilities, preserves with visitor-serving amenities, religious assembly, childcare centers, public libraries operated by the County and/or other cities, residential care facilities, and other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. Alternative 5 also limits the size of outdoor cannabis cultivation canopy to 1 acre.

As discussed above under Alternative 2, if construction activities that involve the use of a small bulldozer were to occur within 2 feet of a structure, they could exceed the FTA criteria of 0.20 in/sec PPV for damage to nonengineered timber and masonry buildings. In addition, if the use of a small bulldozer were to occur within 14 feet of a Category 1 building or within 5 feet of a Category 2 building, it would exceed the County of San Diego thresholds for human response to vibration events (i.e., 0.0018 in/sec RMS, 0.010 in/sec RMS, and 0.014 in/sec RMS, respectively). Because of the required setbacks of 100-feet for outdoor and mixed-light cannabis cultivation facilities and 1,000-feet from sensitive uses that would be implemented under this alternative, it is not anticipated that vibration levels associated with these facilities would exceed County standards for human response. In addition, in accordance with Section 36.408 of the County Noise Abatement and Control Ordinance, construction activities would take place only between 7:00 a.m. and 7:00 p.m. and thus would not result in adverse human response (i.e., sleep disruption). Furthermore, it is not expected that construction of other commercial cannabis facilities (e.g., manufacturing, storefront facilities) would be located within 2 feet of existing structures, and thus such construction activities would not exceed the thresholds for structural damage.

This impact would be less than significant under Alternative 5.

2.13.4 Cumulative Impacts

The geographic scope of the cumulative impact analysis for noise is the San Diego region, including jurisdictions and special districts within and adjacent to the unincorporated county. Noise impacts are based on factors related to site-specific and project-specific characteristics and conditions, including distance to noise sources, barriers between land uses, noise sources, and other factors. Noise impacts are typically site-specific and only combine when cumulative development is near each other.

2.13.4.1 *Issue 1: Excessive Temporary (Construction-Related) Noise Levels*

Construction noise impacts are generally experienced locally and are not cumulative in nature.

Construction-related noise is typically considered a localized impact, affecting only receptors closest to construction activities. Therefore, unless construction of cumulative projects, including those proposed under Alternatives 1 through 5, occur in close proximity to each other (i.e., within 500 feet) and at the same time, noise from individual construction projects have little chance of combining to create cumulative impacts. For these reasons, cumulative noise impacts from construction are generally less than significant. As discussed under Section 2.13.3.5, “Issue 1: Excessive Temporary (Construction-Related) Noise Levels,” noise associated with the construction of new commercial cannabis facilities would be intermittent and temporary and would fluctuate over the years as new facilities are constructed across the unincorporated county. Mitigation Measure M-N.1-1, “Incorporate Noise Reduction Measures into Construction Specifications,” would require the implementation of construction noise-reducing measures that would minimize construction noise impacts. In addition, all cumulative projects would be subject to and required to comply with applicable County noise standards that would offset any contributions to construction noise impacts under cumulative conditions. For these reasons, the Cannabis Program under Alternatives 1 through 5, in combination with cumulative projects, would not be cumulatively considerable.

2.13.4.2 Issue 2: Long-Term Operational Stationary Noise

The San Diego County General Plan Update Draft EIR identified cumulatively considerable impacts associated with permanent increases in ambient noise levels from traffic and land use activities would occur from implementation of the General Plan (San Diego County 2009).

The expansion of existing commercial cannabis facilities under Alternative 1 would have similar operational noise sources to those under existing conditions and to other surrounding commercial and industrial development. The expansion of existing facilities would not result in excessive noise levels; therefore, the impact would be less than significant under Alternative 1. Implementation of the Cannabis Program under Alternatives 2 through 5 would provide a framework for the permitting and licensing of new commercial cannabis facilities in specific areas of the unincorporated county that would have the potential to introduce permanent noise associated with operation of each facility. The Cannabis Program proposes amendments to the Zoning Ordinance (Section 6995(f)(3)) and the Regulatory Code (Section 21.2510(5)(A)) that would include noise standards to reduce excessive noise levels associated with cannabis facilities consistent with County General Plan policy and noise regulations and offset contributions to cumulative noise impacts.

Therefore, the impact would not be cumulatively considerable for Alternatives 1 through 5.

2.13.4.3 Issue 3: Long-Term Operational Traffic Noise

The San Diego County General Plan Update Draft EIR identified cumulatively considerable impacts associated with permanent increases in ambient noise levels from traffic and land use activities would occur from implementation of the General Plan (San Diego County 2009).

Expanded commercial cannabis facilities under Alternative 1 could result in increased trips along surrounding roadways. However, expanded facilities would likely not result in a doubling of traffic volumes along the roadway network and thus would not result in excessive noise levels. Therefore, the impact would be less than significant under Alternative 1. The extent of potential expansion of existing commercial cannabis cultivation sites and exact location of individual new commercial cannabis cultivation sites under Alternatives 2 through 5 in the unincorporated county is unknown at this time; however, while the Cannabis Program would allow for commercial cannabis facilities to operate in the county, the establishment of new commercial cannabis businesses would be related to economic conditions, as well as other local social conditions, such as product interest and worker availability. However, because cannabis facilities would generally be located within existing developed buildings and would produce a lower ADT rate than typical uses within commercial, industrial, and agricultural land use types, as discussed above, there would not be a substantial increase in traffic throughout the county. Traffic volumes from operational trips, including employee commutes, are not expected to result in excessive long-term increases in traffic noise along individual roadway segments throughout the unincorporated county. Therefore, because the Cannabis Program would not induce a substantial increase in vehicular trips in the county, it would not result in increased transportation-related ambient noise levels. Therefore, the Cannabis Program's contribution to cumulative construction traffic noise impacts would not be cumulatively considerable under Alternatives 1, 2, 3, 4, and 5.

2.13.4.4 Issue 4: Excessive Groundborne Vibration

Construction groundborne vibration impacts are generally experienced locally and are not cumulative in nature.

Alternative 1 could result in the expansion of existing commercial cannabis facilities. . Construction-related vibration is typically considered a localized impact, affecting only receptors closest to construction activities. Therefore, unless construction of cumulative projects, including those proposed under Alternatives 1 through 5, occur in close proximity to each other (i.e., less than 500 feet) and at the same time, vibration from individual construction projects have little chance of combining to create cumulative impacts. For these reasons, cumulative vibration impacts from construction are generally less than significant. As discussed in Section 2.13.3.8, “Issue 4: Excessive Groundborne Vibration,” vibration associated with the expansion or construction of new commercial cannabis facilities under Alternatives 1 through 5 would be intermittent and temporary and would fluctuate over the years as new facilities are constructed. The extent of these construction vibration impacts would be limited to the individual commercial cannabis site and adjacent areas and would not create a regional or countywide cumulative vibration impact. Therefore, when combined with past, present, and reasonably foreseeable future projects, the Cannabis Program’s contribution to cumulative construction vibration impacts would not be cumulatively considerable under Alternatives 1, 2, 3, 4, and 5.

2.13.5 Significance of Impacts Prior to Mitigation

2.13.5.1 Issue 1: Excessive Temporary (Construction-Related) Noise Levels

The Cannabis Program would have less-than-significant impacts associated with temporary increases in ambient noise under Alternative 1. Alternatives 2 through 5 would result in potentially significant impacts associated with temporary increases in ambient noise. The Cannabis Program would not result in cumulatively considerable contributions to potentially significant cumulative impacts associated with permanent increases in ambient noise.

2.13.5.2 Issue 2: Excessive Long-Term Stationary Noise Levels

The Cannabis Program would have less-than-significant impacts associated with long-term increases in stationary noise under Alternative 1. Alternatives 2 through 5 would result in potentially significant impacts associated with direct long-term noise levels. The Cannabis Program would not result in cumulatively considerable contributions to impacts associated with long-term noise.

2.13.5.3 Issue 3: Excessive Long-Term Traffic Noise Levels

The proposed Cannabis Program would result in less-than-significant direct long-term traffic-related noise levels under Alternatives 1 through 5. It would not result in cumulatively considerable contributions to long-term traffic noise levels.

2.13.5.4 Issue 4: Excessive Groundborne Vibration

Alternatives 1 through 5 of the Cannabis Program would result in less-than-significant impacts associated with groundborne vibration. It would not result in cumulatively considerable contributions to potentially significant cumulative impacts associated with excessive groundborne vibration.

2.13.6 Mitigation

2.13.6.1 Issue 1: Excessive Temporary Construction-Related Noise Levels

No mitigation is required for Alternative 1.

The following mitigation is identified for Alternatives 2, 3, 4, and 5.

M-N.1-1: Incorporate Noise Reduction Measures into Construction Specifications

Applications for cannabis facilities shall include the following requirements into construction plan specifications/project plans:

- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds shall be closed during equipment operation.
- At no time shall noise levels exceed a community noise equivalent (CNEL) of 60 dBA or 10+ dBA above existing noise levels at any existing residence or other noise-sensitive land use. An existing residence shall be considered the property line of any residentially zoned area or, in the case of agricultural land, any occupied off-site residential structures. Achieving the noise standards could involve the use of the following noise reduction measures or other equally effective measures:
 - Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site, using electric powered equipment instead of pneumatic or internal combustion powered equipment) where feasible and consistent with building codes and other applicable laws and regulations.
 - Stationary noise sources, such as generators and pumps, shall be located as far away from noise-sensitive uses as feasible.
 - All construction equipment and equipment staging areas shall be located as far as possible from nearby structures and located to the extent feasible such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line of site between affected land uses and construction staging areas.
 - Noise monitoring during construction will be conducted, and records of monitoring results shall be maintained by the applicant and provided to the County upon request.
- No less than 1 week prior to the start of construction activities at a particular location, notification shall be provided to nearby land uses (e.g., businesses, residential uses) that are located within 150 feet of the construction site (i.e., based on the construction

noise modeling, which is distance at which nearby receptors would experience noise levels exceeding acceptable daytime construction-noise levels).

- For construction activity that would occur within a clear line of sight of off-site noise-sensitive receptors, temporary noise curtains shall be installed as close as possible to the noise-generating activity such that the curtains obstruct the direct line of sight between the noise-generating construction activity and the nearby sensitive receptors. Temporary noise curtains shall consist of durable, flexible, composite material featuring a noise barrier layer bound to sound-absorptive material on one side. The noise barrier layer shall consist of rugged impervious material with a surface weight of at least 1 pound per square foot and be designed to result in a 10-dB reduction at the sensitive receptor location. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8–10 dB (EPA 1971).

2.13.6.2 Issue 2: Excessive Long-Term Stationary Noise Levels

No mitigation is required for Alternative 1.

The following mitigation is identified for Alternatives 2, 3, 4, and 5.

M-N.2-1: Implement Noise Reduction Measures to Reduce Operational Noise Impacts at Distribution Facilities

Whenever a cannabis distribution facility is proposed on a parcel within 30 feet (i.e., the distance at which loading activities could exceed county noise standards) of a noise sensitive land use (residential uses, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, passive recreational parks, libraries, or other similar facilities where quiet is an important attribute of the environment, as defined by the *County of San Diego General Plan* and the *County of San Diego Guidelines for Determining Significance - Noise*), a noise analysis shall be prepared by a consultant listed on the County of San Diego's CEQA Consultants List for Privately Initiated Projects and submitted with the permit application. The noise analysis shall be prepared in accordance with *County of San Diego Guidelines for Determining Significance - Noise* and will evaluate the effect of project implementation on nearby land uses and shall identify appropriate measures (e.g., equipment enclosures, equipment location, noise barriers) that reduce noise to acceptable levels as presented in Section 36.401 et seq. of the San Diego County Code of Regulatory Ordinances relating to Noise Abatement and Control and General Plan Noise Element Tables N-1 and N-2. To meet these standards, noise levels will be modeled from the location of the loading activities to the parcel with the noise-sensitive land use.

2.13.6.3 Issue 3: Excessive Long-Term Traffic Noise Levels

No mitigation is required.

2.13.6.4 Issue 4: Excessive Groundborne Vibration

No mitigation is required.

2.13.7 Conclusion

The discussion below provides a synopsis of the conclusion reached in each of the above impact analyses and the level of impact that would occur after mitigation measures are implemented.

2.13.7.1 Issue 1: Excessive Temporary Construction-Related Noise Levels

Alternative 1 would have less-than-significant impacts related to construction noise.

Implementation of Mitigation Measure M-N.1-1 would provide substantial reductions in construction noise levels by including noise reduction measures, such as ensuring proper equipment use; locating equipment away from sensitive land uses; and requiring the use of enclosures, shields, and noise curtains. Although noise reduction would be achieved with implementation of these measures, reductions of the appropriate magnitude may not be achievable under all circumstances with implementation of Mitigation Measure M-N.1-1. Therefore, because it cannot be assured that the applicable noise standards can be met, this impact would remain significant and unavoidable for Alternatives 2 through 5. The proposed Cannabis Program would not contribute to a significant cumulative impact.

2.13.7.2 Issue 2: Excessive Long-Term Stationary Noise Levels

Alternative 1 would have less-than-significant stationary noise impacts.

Implementation of Mitigation Measure M-N.2-1 would provide substantial reductions in operational noise associated with loading activities at cannabis distribution facilities by requiring a noise analysis and implementation of noise reduction measures for proposed facilities located within 30 feet of an adjacent land use. In addition, the Cannabis Program proposes amendments to the Zoning Ordinance (Section 6995(f)(3)) and the Regulatory Code (Section 21.2510(5)(A)) that would include noise standards to reduce excessive noise levels associated with cannabis facilities consistent with County General Plan policy and noise regulations. Therefore, permanent operational stationary noise levels associated with operation of Alternatives 2 through 5 would be less than significant with mitigation. In addition, the proposed Cannabis Program would not contribute to a significant cumulative impact.

2.13.7.3 Issue 3: Excessive Long-Term Traffic Noise Levels

Alternative 1 would have less-than-significant traffic noise impacts.

Commercial cannabis facilities would generally be located within existing developed buildings and would produce a lower ADT rate than typical uses within commercial, industrial, and agricultural land use types; therefore, as discussed above, there would not be a substantial increase in traffic throughout the county. Traffic volumes from operational trips, including employee commutes, are not expected to result in excessive long-term increases in traffic noise along individual roadway segments throughout the unincorporated county. Therefore, because the Cannabis Program under Alternatives 2 through 5 would not induce a permanent increase in vehicular trips in the county, it would have a less-than-significant impact. In addition, the proposed Cannabis Program would not contribute to a significant cumulative impact.

2.13.7.4 Issue 4: Excessive Groundborne Vibration

Alternative 1 would have less-than-significant construction groundborne vibration impacts.

Construction activities associated with the implementation of the Cannabis Program under Alternatives 2 through 5 would not affect vibration-sensitive land uses or result in structural damage. Therefore, this impact would be less than significant. In addition, the proposed Cannabis Program would not contribute to a significant cumulative impact.

Table 2.13.2 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	— 110 —	Rock band
Jet flyover at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, daytime, Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office, Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library, Bedroom at night
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013: Table 2-5.

Table 2.13.3 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is annoying.
85 VdB	Vibration tolerable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 μ inch/second and based on the RMS velocity amplitude.

Source: FTA 2018: 120.

Table 2.13.4 FTA Construction Damage Vibration Criteria

Land Use Category	PPV (in/sec)
Reinforced-concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: FTA 2018.

Table 2.13.5 Caltrans Recommendations Regarding Levels of Exposure

PPV (in/sec)	Effect on Buildings
0.4-0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006-0.019	Vibration unlikely to cause damage of any type

Notes: PPV = peak particle velocity; in/sec = inches per second.

Source: Caltrans 2020: 24-25.

Table 2.13.6 County of San Diego Noise Compatibility Guidelines

Land Use Category	Exterior Noise Level (CNEL)
A Residential—single family residences, mobile homes, senior housing, convalescent homes	Acceptable ¹ : Less than 55 to 60 Conditionally Acceptable ² : 60 to 75 Unacceptable ³ : 75 to greater than 80
B Residential—multi-family residences, mixed-use (commercial/residential)	Acceptable: Less than 55 to 65 Conditionally Acceptable ² : 65 to 75 Unacceptable ³ : 75 to greater than 80
C Transient lodging—motels, hotels, resorts	Acceptable: Less than 55 to 65 Conditionally Acceptable ² : 65 to 75 Unacceptable ³ : 75 to greater than 80
D ⁴ Schools, churches, hospitals, nursing homes, childcare facilities	Acceptable: Less than 55 to 65 Conditionally Acceptable ² : 65 to 75 Unacceptable ³ : 75 to greater than 80
E ⁴ Passive recreational parks, nature preserves, contemplative spaces, cemeteries	Acceptable: Less than 55 to 65 Conditionally Acceptable ² : 65 to 75 Unacceptable ³ : 75 to greater than 80
F ⁴ Active parks, golf courses, athletic fields, outdoor spectator sports, water recreation	Acceptable: Less than 55 to 70 Conditionally Acceptable ² : 70 to 75 Unacceptable ³ : 75 to greater than 80
G ⁴ Office\professional, government, medical\dental, commercial, retail, laboratories	Acceptable: Less than 55 to 70 Conditionally Acceptable ² : 70 to 75 Unacceptable ³ : 75 to greater than 80
H ⁴ Industrial, manufacturing, utilities, agriculture, mining, stables, ranching, warehouse, maintenance/repair	Acceptable: Less than 55 to 70 Conditionally Acceptable ² : 70 to greater than 80

Notes: For projects located within an Airport Influence Area of an adopted Airport Land Use Compatibility Plan (ALUCP), additional Noise Compatibility Criteria restrictions may apply as specified in the ALUCP.

- ¹ Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.
- ² Conditionally Acceptable: New construction or development should be undertaken only after a detailed noise analysis is conducted to determine if noise reduction measures are necessary to achieve acceptable levels for land use. Criteria for determining exterior and interior noise levels are listed in Table 3, Noise Standards. If a project cannot mitigate noise to a level deemed Acceptable, the appropriate County decision-maker must determine that mitigation has been provided to the greatest extent practicable or that extraordinary circumstances exist.
- ³ Unacceptable: New construction or development shall not be undertaken.
- ⁴ Denotes facilities used for part of the day; therefore, an hourly standard would be used rather than CNEL.

Source: County of San Diego 2011: Table N-1.

Table 2.13.7 County of San Diego Noise Standards

1. The exterior noise level (as defined in Item 3) standard for Category A shall be 60 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.
2. The exterior noise level standard for Categories B and C shall be 65 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.
3. The exterior noise level standard for Categories D and G shall be 65 CNEL and the interior noise level standard shall be 50 dBA L_{eq} (one hour average).
4. For single-family detached dwelling units, "exterior noise level" is defined as the noise level measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum net lot area: (i) for lots less than 4,000 square feet in area, the exterior area shall include 400 square feet, (ii) for lots between 4,000 square feet to 10 acres in area, the exterior area shall include 10 percent of the lot area; (iii) for lots over 10 acres in area, the exterior area shall include 1 acre.
5. For all other residential land uses, "exterior noise level" is defined as noise measured at exterior areas which are provided for private or group usable open space purposes. "Private Usable Open Space" is defined as usable open space intended for use of occupants of one dwelling unit, normally including yards, decks, and balconies. When the noise limit for Private Usable Open Space cannot be met, then a Group Usable Open Space that meets the exterior noise level standard shall be provided. "Group Usable Open Space" is defined as usable open space intended for common use by occupants of a development, either privately owned and maintained or dedicated to a public agency, normally including swimming pools, recreation courts, patios, open landscaped areas, and greenbelts with pedestrian walkways and equestrian and bicycle trails, but not including off-street parking and loading areas or driveways.
6. For non-residential noise sensitive land uses, exterior noise level is defined as noise measured at the exterior area provided for public use.
7. For noise sensitive land uses where people normally do not sleep at night, the exterior and interior noise standard may be measured using either CNEL or the one-hour average noise level determined at the loudest hour during the period when the facility is normally occupied.
8. The exterior noise standard does not apply for land uses where no exterior use area is proposed or necessary, such as a library.
9. For Categories E and F the exterior noise level standard shall not exceed the limit defined as "Acceptable" in Table N-1 or an equivalent one-hour noise standard.

Notes: L_{eq} = Equivalent Continuous Sound Level; CNEL = community noise equivalent level.

Source: County of San Diego 2011: Table N-2.

**Table 2.13.8 San Diego County Noise Abatement and Control Ordinance
Exterior Noise Standards**

Zone¹	Limit One-Hour dBA²	Time Period
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S87, S90, S92 and RV and RU with a density of less than 11 dwelling units per acre.	50	7 a.m. to 10 p.m.
	45	10 p.m. to 7 a.m.
(2) RRO, RC, RM, S86, V5 and RV and RU with a density of 11 or more dwelling units per acre.	55	7 a.m. to 10 p.m.
	50	10 p.m. to 7 a.m.
(3) S-94, V4, and all commercial zones.	60	7 a.m. to 10 p.m.
	55	10 p.m. to 7 a.m.
(4) V1, V2	60	7 a.m. to 7 p.m.
	55	7 p.m. to 10 p.m.
V1	55	10 p.m. to 7 a.m.
V2	50	10 p.m. to 7 a.m.
V3	70	7 a.m. to 10 p.m.
	65	10 p.m. to 7 a.m.
(5) M-50, M-52, M-54	70	Anytime
(6) S-82, M-56, and M-58	75	Anytime
(7) S-88 ³	See below	

¹ Refer to the San Diego County Zoning Ordinance for a list of zones represented by the abbreviations in this table.

² If the measured ambient noise level exceeds the applicable limit, the allowable one-hour average sound level shall be the one-hour average ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.

³ S-88 zones are Specific Planning Areas which allow different uses. The sound level limits that apply in an S88 zone depend on the use being made of the property. The limits in subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.

The sound levels limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. The one-hour average sound level limit applicable to extractive industries, however, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone in which the extractive property is located.

A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section measured at or beyond six feet from the boundary of the easement upon which the facility is located.

Source: County of San Diego Ordinance No. 9962 Table 36.404.

Table 2.13.9 Noise Emission Levels from Construction Equipment

Equipment Type	Typical Noise Level (Leq dB) at 50 feet
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Bulldozer	85
Excavator	85
Generator	82
Grader	85
Loader	80
Paver	85
Pneumatic tool	85
Roller	85
Saw	76
Scraper	85
Truck	84

Notes: dB = A-weighted decibels; Leq = equivalent continuous sound level.

Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

Source: FTA 2018.

Table 2.13.10 Vibration Reference Levels for Construction Equipment

Equipment	PPV at 25 Feet (in/sec)	Approximate Lv ¹ at 25 Feet
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Notes: PPV = peak particle velocity; in/sec = inches per second.

¹ RMS velocity in decibels, referenced to 1 μ inch/second.

Source: FTA 2018: 184.

Table 2.13.11 Typical Noise Source Levels for Special Events (A-Weighted L₅₀ Levels)

Event of Activity	Typical Noise Level (dBA) @ 50 feet
Amplified Music	72 dBA
Amplified Speech	70 dBA
Non-amplified (acoustic) Music	67 dBA
300 Guests in Raised Conversation with Background Music	71 dBA
200 Guests in Raised Conversation with Background Music	68 dBA
100 Guests in Raised Conversation with Background Music	60 dBA
Films – Voices/Music	64 dBA

Source: Initial Study/Proposed Mitigated Negative Declaration JFI III Application: Nunes Farm and Winery at Saralee's Vineyard Project (Ascent 2023b).

Table 2.13.12 Groundborne Vibration and Noise Standards¹

Land Use Category ²	Definition	Ground-Borne Vibration Impact Levels: Frequent Events (inches per second RMS) ³	Ground-Borne Vibration Impact Levels: occasional or Infrequent Events (inches per second RMS) ⁴	Ground-Borne Noise Impact Levels: Frequent Events (dB re 20 micro Pascals) ³	Ground-Borne Noise Impact Levels: occasional or Infrequent Events (dB re 20 micro Pascals) ⁴
Category 1	Buildings where low ambient vibration is essential for interior operations (research & manufacturing facilities with special vibration constraints)	0.0018 ⁵	0.0018 ⁵	Not Applicable	Not Applicable
Category 2 ⁶	Residences and buildings where people normally sleep (hotels, hospitals, residences, & other sleeping facilities).	0.0040	0.010	35 dBA	43 dBA
Category 3 ⁶	Institutional land uses with primarily daytime use (schools, churches, libraries, other institutions, & quiet offices).	0.0056	0.014	40 dBA	48 dBA

Notes: RMS = root mean squared.

- ¹ Vibration-sensitive equipment is not sensitive to ground-borne noise.
- ² There are some buildings, such as concert halls, TV and recording studios, and theaters that can be very sensitive to vibration and noise but do not fit into any of the three categories. Refer to Table 3 in *the County of San Diego Guidelines for Determining Significance: Noise* for acceptable levels of ground-borne vibration and noise for these various types of special uses.
- ³ "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
- ⁴ "Occasional or Infrequent Events" are defined as fewer than 70 vibration events per day. This combined category includes most commuter rail systems.
- ⁵ This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research will require detailed evaluation to define acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
- ⁶ For Categories 2 and 3 with occupied facilities, isolated events such as blasting are significant when the PPV exceeds one inch per second. Non-transportation vibration sources such as impact pile drivers or hydraulic breakers are significant when their PPV exceeds 0.1 inch per second.

Source: County of San Diego 2009: Table 4.

Table 2.13.13 Modeled Average Daily Traffic

Cannabis Facility Type	Total Building Area (sf)	Trip Generation Rate (ADT per 1,000 sf)	Total ADT
Cultivation (Alternatives 2, 3, and 5)	3,021,104	0.69 ⁽¹⁾	2,085
Cultivation (Alternative 4)	3,490,924	0.69 ⁽¹⁾	2,408
Nursery	1,680,000	0.69 ⁽¹⁾	1,680
Processing	32,500	0.69 ⁽¹⁾	22
Manufacturing	67,500	3.8 ⁽²⁾	257
Testing	5,600	7 ⁽²⁾	39
Distribution	72,000	1.4 ⁽²⁾	101
<i>Total (Alternatives 2, 3, and 5)</i>			<i>4,184</i>
<i>Total (Alternative 4)</i>			<i>4,507</i>

Notes: sf = square feet; ADT = average daily vehicle trips

Sources: Institute of Transportation Engineers 2021, County of Santa Barbara, Modeled by Ascent 2024.

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