5.3 NOISE

This section of the Draft Supplemental Environmental Impact Report (DSEIR) evaluates the potential for implementation of the proposed project to result in noise and vibration impacts to off-campus and on-campus sensitive receptors. The proposed project would install 14 competitive sports lighting poles to the existing varsity baseball and softball fields (ballfields) at the Del Norte High School (proposed project).

The analysis in this section is based in part on the following technical report(s):

- *Lighting System Plan*, Musco Lighting, 2021, November 10

A complete copy of this study is included in Appendix D to this Draft SEIR.

5.3.1 Environmental Setting

5.3.1.1 NOISE AND VIBRATION FUNDAMENTALS

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." The following are brief definitions of terminology used in this section:

Technical Terminology

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the Leq metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L50 level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the

changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L10 level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L90 is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 pm to 10:00 pm and 10 dB from 10:00 pm to 7:00 am. For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive, that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).

Sound Fundamentals

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually indiscernible. A 3 dBA change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dBA is readily discernable to most people in an exterior environment, and a 10 dBA change is perceived as a doubling (or halving) of the sound.

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is usually used to relate noise to human sensitivity. The

A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Sound Measurement

Sound pressure is measured through the A-weighted measure to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies.

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. On a logarithmic scale, an increase of 10 dBA is 10 times more intense than 1 dBA, 20 dBA is 100 times more intense, and 30 dBA is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0 dBA. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single point source, sound levels decrease by approximately 6 dBA for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dBA for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases by 4.5 dBA for each doubling of distance.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L50 noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L2, L8, and L25 values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. These "L" values are typically used to demonstrate compliance for stationary noise sources with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 pm to 10:00 pm and 10 dBA for the hours from 10:00 pm to 7:00 am. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 pm and 10:00 pm. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher).

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA could result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by pain, and this is called the threshold of pain. Table 5.3-1, *Typical Noise Levels*, shows typical noise levels from familiar noise sources.

Table 5.3-1 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2013.

Vibration Fundamentals

Vibration is an oscillating motion in the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard. Vibration amplitudes can be described in terms of peak particle velocity (PPV), which is the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential building damage. The units for PPV are normally inches per second (in/sec). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration.

The way in which vibration is transmitted through the earth is called propagation. As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

5.3.1.2 REGULATORY BACKGROUND

California

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a general plan that includes a noise element which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research. The purpose of the noise element is to "limit the exposure of the community to excessive noise levels."

The State of California's General Plan Guidelines discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels expressed in CNEL. A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. Local municipalities adopt these compatibility standards as part of their general plans and modify them as appropriate for their local environmental setting.

County of San Diego

The County has adopted, as part of the Noise Element, noise and land use compatibility guidelines. The County's noise and land use compatibility guidelines for schools are "acceptable" in noise environments of 65 dBA CNEL or less, "conditionally acceptable" in noise environments of 65 to 75 dBA CNEL, and "unacceptable" in noise environments greater than 75 dBA CNEL.

The nearest receptors to the east of the project site are within 4S Ranch, an unincorporated neighborhood of San Diego County and are therefore subject to the San Diego County noise standards. Section 36.404 of the County Code provides exterior noise standards for low density residential land uses (less than 11 dwellings

units per acre) that apply to the residences to the east. Noise levels shall not exceed 45 dBA L_{eq} between the hours of 10:00 pm and 7:00 am and 50 dBA L_{eq} between the hours of 7:00 am and 10:00 pm.

School Activities

Under Section 36.417 (a)(2), Exemptions, of the San Diego County Code, the following activities on school grounds are exempt from the noise limits in this section: "those reasonable sounds emanating from authorized school bands, school athletic and school entertainment events."

Construction Noise

Section 36.408 of the County Code states that it is unlawful for any person to operate construction equipment between the hours of 7:00 pm and 7:00 am or any time on Sunday or a federal holiday. Furthermore, Section 36.409 of the County Code specifies it is unlawful to operate construction equipment so as to cause at or beyond the property line an average sound level greater than 75 dBA for an eight-hour period between the hours of 7:00 am and 7:00 pm.

City of San Diego Noise Standards

Residences to the southwest of the project site are within the City of San Diego and would be subject to applicable City noise standards. The City has adopted, as part of the Noise Element of the Draft General Plan Update, noise and land use compatibility guidelines. The City's noise and land use compatibility guidelines for educational institutions grades kindergarten through 12th grade are "compatible" in noise environments of 60 dBA CNEL or less, "conditionally compatible" in noise environments of 60 to 65 dBA CNEL, and "incompatible" in existing environments greater than 65 dBA CNEL.

Furthermore, the City of San Diego regulates noise through the City's Municipal Code, Chapter 5, Article 9.5, Noise Abatement and Control. The City's noise ordinance includes exterior noise standards for land uses. As shown in Table 5.3-2, *City of San Diego Exterior Noise Standards for Land Uses*, stationary noise generated off-site should not exceed a noise level of 50 dBA at low-density residences during the day, 45 dBA in the evening, and 40 dBA at night.

Table 5.3-2 City of San Diego Exterior Noise Standards for Land Uses

Land Use	Time of Day	One-Hour Average Sound Level (dBA)
Residential: All R-1 (Low Density Single-Family)	7 am to 7 pm	50
	7 pm to 10 pm	45
	10 pm to 7 am	40

Source: City of San Diego Municipal Code, Section 59.5.0401.
Note: The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two districts.

Construction

In addition, the City regulates construction noise in Article 9.5, Noise Abatement and Control, of the municipal code, which states that it is unlawful for any person, between the hours of 7:00 pm and 7:00 am, on legal holidays, or on Sundays, to erect, construct, demolish, excavate for, alter, or repair any building or structure in such a manner as to create disturbing, excessive, or offensive noise. In addition, it is unlawful for any person in the City of San Diego to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 am to 7:00 pm.

Vibration Standards

Neither the County nor the City of San Diego have adopted quantitative thresholds for vibration. Therefore, the FTA vibration annoyance and vibration damage criteria are used and summarized in Section 5.13.2, *Thresholds of Significance*.

5.3.1.3 EXISTING CONDITIONS

Ambient Noise Monitoring

To determine a baseline noise level at different environments in the project area, ambient noise monitoring was conducted by PlaceWorks on Wednesday, March 9, 2022. Two short-term (15-minute) measurements were made during a weekday in the evening hours between 8:00 pm and 8:30 pm in the vicinity of the proposed project.

The primary noise sources around the measurements were local traffic and outdoor school activities (distant PA system and baseball pitching practice). Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be typical for the season.

The sound level meter used (Larson Davis LxT) for noise monitoring satisfied the American National Standards Institute (ANSI) standard for Type 1 instrumentation. The sound level meter was set to "slow" response and "A" weighting (dBA). The meter was calibrated before and after the monitoring period. All measurements were at least five feet above the ground and away from reflective surfaces. The results of the short-term noise monitoring are summarized in Table 5.3-3, *Short-Term Noise Measurement Summary*. Noise measurement locations are shown on Figure 5.3-1, *Approximate Noise Monitoring Locations*, and are described below:

- **Short-Term Location 1 (ST-1)** was conducted next to 9929 Fieldthorn Street (residence), approximately 15 feet west from the nearest northbound Dear Ridge Road trave lane centerline. A 15-minute noise measurement took place beginning at 8:22 pm on Tuesday March 9, 2022. The noise environment is characterized primarily by local traffic, pedestrians, and overflights. Ambient noise levels measured as low as 33 dBA. Traffic noise from passing vehicles ranged from 66 to 72 dBA, and overflights ranged from 45 to 50 dBA. On occasion, cheering from the high school stadium could be heard but did not significantly contribute to the existing ambient, measuring up to 44 dBA.

- **Short-Term Location 2 (ST-2)** was conducted next to 9808 Fox Meadow Road (residence), approximately 15 feet west from the nearest northbound Dear Ridge Road trave lane centerline. A 15-minute noise measurement took place beginning at 8:01 pm on Tuesday March 9, 2022. The noise environment is characterized primarily by local traffic, pedestrians, and overflights. Ambient noise levels measured as low as 35 dBA. Traffic noise from passing vehicles ranged from 63 to 66 dBA, and overflights ranged from 45 to 47 dBA. Softball and baseball pitching practice could be heard but did not significantly contribute to the existing ambient.

Table 5.3-3 Short-Term Noise Measurement Summary

Monitoring Location	Description	15-Minute Noise Level, dBA						
		L_{eq}	L_{max}	L_{min}	L_2	L_8	L_{25}	L_{50}
ST-1	Next to 9929 Fieldthorn Street residence 03/9/2022, 8:22 pm	51.2	71.7	33.4	62.1	45.8	38.8	36.0
ST-2	Next to 9808 Fox Meadow Road residence 03/9/2022, 8:01 pm	50.1	66.9	34.7	60.7	53.4	46.6	42.3

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. Sensitive receptors include residences, senior housing, schools, hospitals, places of worship, and recreational areas. These uses are regarded as sensitive because they are where citizens most frequently engage in activities that are likely to be disturbed by noise, such as reading, studying, sleeping, resting, working from home, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not particularly sensitive to noise or vibration. The closest sensitive receptors to the project site are residences to the east across Deer Ridge Road.

5.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

N-1 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.

N-2 Generation of excessive groundborne vibration or groundborne noise levels.

N-3 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, if the project would expose people residing or working in the project area to excessive noise levels.

Figure 5.3-1 - Approximate Noise Monitoring Locations

School Boundary

ST-X Short-Term Noise Measurement Locations (2)

0 325
Scale (Feet)

Source: Nearmap, 2022

5. Environmental Analysis
NOISE

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The Certified EIR's thresholds of significance are used for determining impacts significance associated with the proposed project and are as follows:

- A construction noise impact would occur if project-related construction activities would take place outside of the hours specified in the City of San Diego Municipal Code (7:00 am to 7:00 pm on weekdays, excluding federal holidays) or would exceed an average sound level greater than 75 decibels during the 12-hour period from 7:00 am to 7:00 pm at existing residences in the city.

- An operational noise impact would occur if project-related operations would cause an audible change in noise levels in the vicinity of residential uses. An audible change would be if project-related on-site activities would increase the CNEL at any noise-sensitive receptor by 3 dBA or more when the CNEL is 65 dB or greater.

A vibration impact would occur if:

- Vibration annoyance levels would exceed 80 VdB at noise sensitive receptors.

- Vibration levels would exceed 0.20 in/sec PPV at the façade of a nonengineered structure (e.g., wood-frame residence).

5.3.3 Plans, Programs, and Policies

Plans, programs, and policies (PPP) include applicable regulatory requirements and project design features.

PPP N-1 The proposed project will comply with Section 36.408 of the County of San Diego Code and will not operate construction equipment between the hours of 7:00 pm and 7:00 am or any time on Sunday or a federal holiday. Furthermore, the proposed project will comply with Section 36.409 of the County Code and will not operate construction equipment to cause an average sound level greater than 75 dBA for an eight-hour period between the hours of 7:00 am and 7:00 pm. at or beyond the property line.

5.3.4 Environmental Impacts

Summary of Impacts Identified in the Certified EIR

The Certified EIR found construction noise impacts associated with the sports fields and the stadium construction and the project's contribution to cumulative traffic to be significant and unavoidable.

The Certified EIR found construction vibration impacts to be less than significant. School-related bells, HVAC systems, and parking lot noise were also found to be less than significant. The Certified EIR is incorporated by reference to this SEIR.

5.3.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.3-1: Construction activities would result in temporary noise increases in the vicinity of the proposed project. [Threshold N-1]

The proposed project would light the varsity baseball and softball fields at Del Norte High School with a total of eight galvanized steel poles (four 70 feet, two 80 feet, and two 90 feet tall) at the varsity baseball field and a total of six galvanized steel poles (two 60 feet and four 70 feet tall). These ballfields are in the southeast corner of the campus bounded by Deer Ridge Road and Camino San Bernardino. Existing uses surrounding the project site would be exposed to temporary construction noise. Construction equipment for the installation of light poles typically includes a crane, backhoe, concrete saw/jackhammer, and a drill rig. A concrete saw or jackhammer would not be used at every proposed pole location, but on an as-needed basis, such as where concrete would have to be removed to install a light pole. Neither blasting nor pile-driving techniques would be required. Construction associated with the installation of the permanent lights is anticipated to take less than one month and is scheduled to start in September of 2022.

Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Noise levels from construction activities are dominated by the loudest piece of construction equipment. The dominant noise source is typically the engine, although work piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each activity is dominated by the loudest piece of equipment needed for light pole installation. Construction noise quite often exhibits a high degree of variability because factors such as noise attenuation due to distance, type of equipment, and the load and power requirements to accomplish tasks result in different noise levels at a given sensitive receptor. Some heavy-duty equipment can have maximum, short-duration noise levels of 85 dBA at 50 feet. Construction noise impacts at sensitive receptors are determined based on loudness and noise exposure duration at a sensitive receptor.

Off-Site Receptors

Based on PlaceWorks experience with previous lighting projects, the installation of a single light pole takes approximately one week to complete. Initially, workers drill at the proposed light pole location and set the concrete pole bases on the first day. The cement base sits for approximately four days to cure, and workers return to install the light pole with the use of a crane. Most of the noise generated would occur during the first and last day of this process. It is assumed that workers will drill and set the base of other light pole locations while cement cures.

The anticipated construction equipment (auger drill rig, backhoe, concrete saw, and a crane) were modeled using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). RCNM modeling indicates that the loudest piece of equipment (concrete saw) would be up to 83 dBA L_{eq} at a

distance of 50 feet. The second loudest piece of equipment (drill rig) would be up to 77 dBA L_{eq} at a distance of 50 feet. The closest sensitive receptor property line to project construction activities (light pole installation) is approximately 95 feet east of the ball fields. At 95 feet, drill rig noise levels would attenuate to approximately 71 dBA L_{eq}. The nearest light pole location anticipated to require hardscape demotion and the use of a concrete saw is approximately 270 feet to the east. At 270 feet, noise levels associated with a concrete saw would attenuate to approximately 68 dBA L_{eq}.

The Certified EIR found that construction noise levels would be up to 79 dBA L_{eq} at the nearest residences. The proposed project would generate construction noise levels less than the project analyzed in the Certified EIR and would not exceed the City or County's 75 dBA L_{eq} construction noise threshold at the nearest receptors. Therefore, construction noise impacts would be less than significant.

On-Site Receptors

The Certified EIR did not evaluate noise to on-site school receptors because the school did not exist at the time, but the school is now built and operational. There are two proposed light poles within 50 feet of school classrooms. At times, construction could occur while school is in session. As mentioned above, the loudest pieces of equipment would be between 77 and 83 dBA L_{eq} at 50 feet. Though construction noise would temporarily elevate interior noise levels at the nearest classrooms, elevated noise levels would be limited to the first and last day of light pole installation. Therefore, temporary construction noise would not substantially interfere with the learning environment. On-site construction noise impacts would be less than significant.

Level of significance Before Mitigation: Less than significant impact.

Impact 5.3-2 Project implementation would result in long-term operation-related noise that would not exceed local standards. [Threshold N-1]

Mobile Noise

The proposed lighting project would result in a shift in schedule and could result in new trip generation in the evening hours, but mostly the project would be shifting existing trips later into the evening hours—no later than 9:00 pm. Site access and parking would be mainly along Deer Ridge Road. Garland Associates (traffic engineer) provided trip generation associated with existing practices, games, and community/Little League use. For a conservative analysis, these trips were analyzed as new trips that would occur in the later evening hours along Deer Ridge Road.

Under the Certified EIR, a significant traffic noise impact would occur if traffic noise increased by 3 dBA CNEL or more in an existing environment of 65 dBA CNEL or greater. The Certified EIR estimated that 100 new trips would be generated along Deer Ridge Road, resulting in a 0.1 dBA CNEL noise increase. The proposed project would shift up to 170 trips into the evening hours of 7:00 pm and 9:00 pm along Deer Ridge Road. When treated as new trips and compared to the Certified EIR's "no project" baseline, the proposed project would result in a traffic noise increase of up to 0.4 dBA CNEL. This would not exceed 3 dBA in an environment of 65 dBA CNEL or greater (see Appendix D for data and modeling). Therefore,

traffic noise impacts associated with the proposed project would be less than significant, and the proposed project would not result in new or substantially more severe significant impacts.

Recreational Noise

The proposed project would not install speakers for amplified or public address systems. It would also not introduce new noise sources, but due to the extended evening hours, recreational noise would be shifted into the evening hours. The Certified EIR analyzed noise levels associated with the operation of the ballfields. The Certified EIR found that baseball and softball fields would generate noise levels of up to 49 dBA L_{eq} at residences to the southeast. Because the proposed project is not adding new fields, the previously analyzed noise levels would not change. However, the proposed project would result in a shift of activities into the evening hours, potentially resulting in an ambient noise increase during the wintertime months when the light poles would be used after dark. All student and approved community use of the playfields would end no later than 9:00 pm.

Ambient noise monitoring conducted by PlaceWorks staff in the evening hours between 8:00 and 8:30 pm showed that the existing evening ambient at the nearest receptors to the ballfields is 51 dBA L_{eq} or less. The proposed use of the ballfield, though shifted into the evening hours, would not exceed the existing ambient. Therefore, impacts would be less than significant, and the proposed project would not result in new or substantially more severe significant impacts.

Noise Impacts to Sensitive Wildlife

The proposed project would light the existing varsity baseball and softball fields. The project site is bordered by Deer Ridge Road and Camino San Bernardo to the east and south, and other high school facilities to the north and east. There is no sensitive wildlife habitat adjacent to the project site. Extended use of the existing ballfields until 9:00 pm from August to November and until 8:00 pm from February to June would not have any significant impacts to sensitive wildlife.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.3-3: The project would not generate excessive temporary or long-term groundborne vibration and groundborne noise. [Threshold N-2]

Potential vibration impacts associated with development projects are usually related to the use of heavy construction equipment during the demolition and grading phases of construction. Construction can generate varying degrees of ground vibration depending on the construction procedures and equipment. Construction equipment generates vibration that spreads through the ground and diminishes with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and the receptor building's construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

Vibration Annoyance

The Certified EIR found that vibration annoyance levels could be up to 76 VdB at the nearest receptors. Under the proposed project, the nearest residence is approximately 95 feet to the east, and at that distance, the vibration levels would attenuate to 70 VdB (see Appendix D for calculations). This would be less than the impacts identified in the Certified EIR and below the threshold of 80 VdB. Therefore, impacts would be less than significant.

Vibration Damage

The Certified EIR found that vibration damage levels could be up to 0.0127 in/sec PPV at the nearest residential structures. Under the proposed project, the nearest residential structure is approximately 95 feet to the east, and at that distance, levels would attenuate to approximately 0.0120 in/sec PPV (see Appendix D for calculations). This would be slightly less than analyzed in the Certified EIR and below the threshold of 0.2 in/sec PPV. Therefore, impacts would be less than significant.

Operational Vibration

The operation of the proposed project would not include any substantial long-term vibration sources. Thus, no significant vibration effects from operations sources would occur.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.3-4: The proximity of the project site to an airport or airstrip would not result in exposure of future resident and/or workers to airport-related noise. [Threshold N-3]

The nearest airport to the proposed project is the Marine Corps Air Station approximately 6.4 miles to the south. The project would not expose people working in the project area to excessive noise levels. There would be no impact.

Level of Significance Before Mitigation: No impact.

5.3.5 Cumulative Impacts

The proposed project is in a built-out residential area, and the proposed project would require limited construction in equipment and duration. Traffic trip generation due to the proposed project would also be limited. Though the project would shift activities into the evening hours, no new ballfields are proposed. Therefore, construction and operational (stationary and mobile) noise would be less than significant.

5.3.6 Level of Significance Before Mitigation

Upon implementation of plans, programs, and policies, the following impacts would be less than significant: 5.13-1, 5.13-2, 5.13-4, and 5.13-4.

5.3.7 Mitigation Measures

No mitigation measures are required.

5.3.8 Level of Significance After Mitigation

Not applicable.

5.3.9 References

California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement (TeNS).

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