PUBLIC REVIEW DRAFT

NEGATIVE DECLARATION AND INITIAL STUDY/ ENVIRONMENTAL CHECKLIST FOR CANYON CREST ACADEMY STADIUM LIGHTING PROJECT

Prepared for:

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SECTION 1: INTRODUCTION

1.1 PROJECT BACKGROUND

Canyon Crest Academy (CCA) is a public school within the San Dieguito Union High School District (District) that serves roughly 2,575 high school students in grades 9 through12. CCA was founded in 2004 and originally occupied temporary portable buildings. The existing school site was fully constructed in 2006. CCA is a "school of choice" where any student in the District can choose to attend the academy. Students who attend CCA can pursue specialized education in the arts, sciences, and technology. School is generally in session from 8:30 a.m. to 3:30 p.m.

CCA offers 21 varsity sports programs including tennis, volleyball, field hockey, soccer, lacrosse, baseball, and softball. Outdoor courts and fields for these sports are located at the south and southeast portions of the CCA campus, immediately north of the State Route 56 (SR 56) right-of-way. Currently, the tennis courts are lit, but the field used for field hockey, soccer, and lacrosse (hereafter referred to as the "multi-sport field"), as well as the baseball and softball fields, do not contain lighting fixtures. Because of this, games must start early in the evening so that the students are able to complete the entire game. This results in students leaving their last class early to prepare for their sporting event. In response to concerns raised by parents of the students involved in these athletic programs, the District has decided to construct lighting at the multi-sport field. The installation of this lighting will allow games to start between 15 to 30 minutes after school is released.

1.2 PROJECT LOCATION AND DESCRIPTION

Regional Location

CCA occupies roughly 51 acres in the Carmel Valley residential suburb of San Diego (Figure 1). CCA is located directly north of SR 56, roughly 3.2 miles east of Interstate 5, and roughly 5.2 miles west of Interstate 15. The school site is located east of Carmel Valley Road and directly south of Village Center Loop Road. There are three entrances to the school site, one off of Edgewood Bend Court and two off of Village Center Loop Road (Figure 2).

The area in the vicinity of the project site is largely developed, consisting mostly of residential and commercial uses. The project site is bordered by single-family residential land use to the east, commercial land use to the north, a City of San Diego park to the west, and SR 56 to the south. The project site is generally flat with a gradual downhill slope toward the athletic fields. Elevation on-site ranges from approximately 225 feet above mean sea level (AMSL) to 260 AMSL.

The existing CCA campus features ornamental landscaping. The landscaping generally occurs along the street-facing boundaries of the school, as well as on small lawns throughout the campus. The campus consists of various indoor classroom, athletic, and administration facilities, as well as outdoor athletic facilities, including tennis and basketball courts, open fields, a softball field, a baseball field, and the multi-sport field, which is surrounded by a track. As mentioned previously, the only athletic facilities with lighting currently are the tennis courts. There is a sound system already installed at the multi-sport field. A set of bleachers is installed on the slope leading up to the parking lot along the west side of the multi-sport field. Benches for the players are set up on the east and west edges of the field, inside of the track. Parking for students, staff, and visitors is provided along the west and north edges of the site. The parking lots along the western edge and in the northwestern corner are mostly covered with solar panels with lighting beneath them (Figure 3).

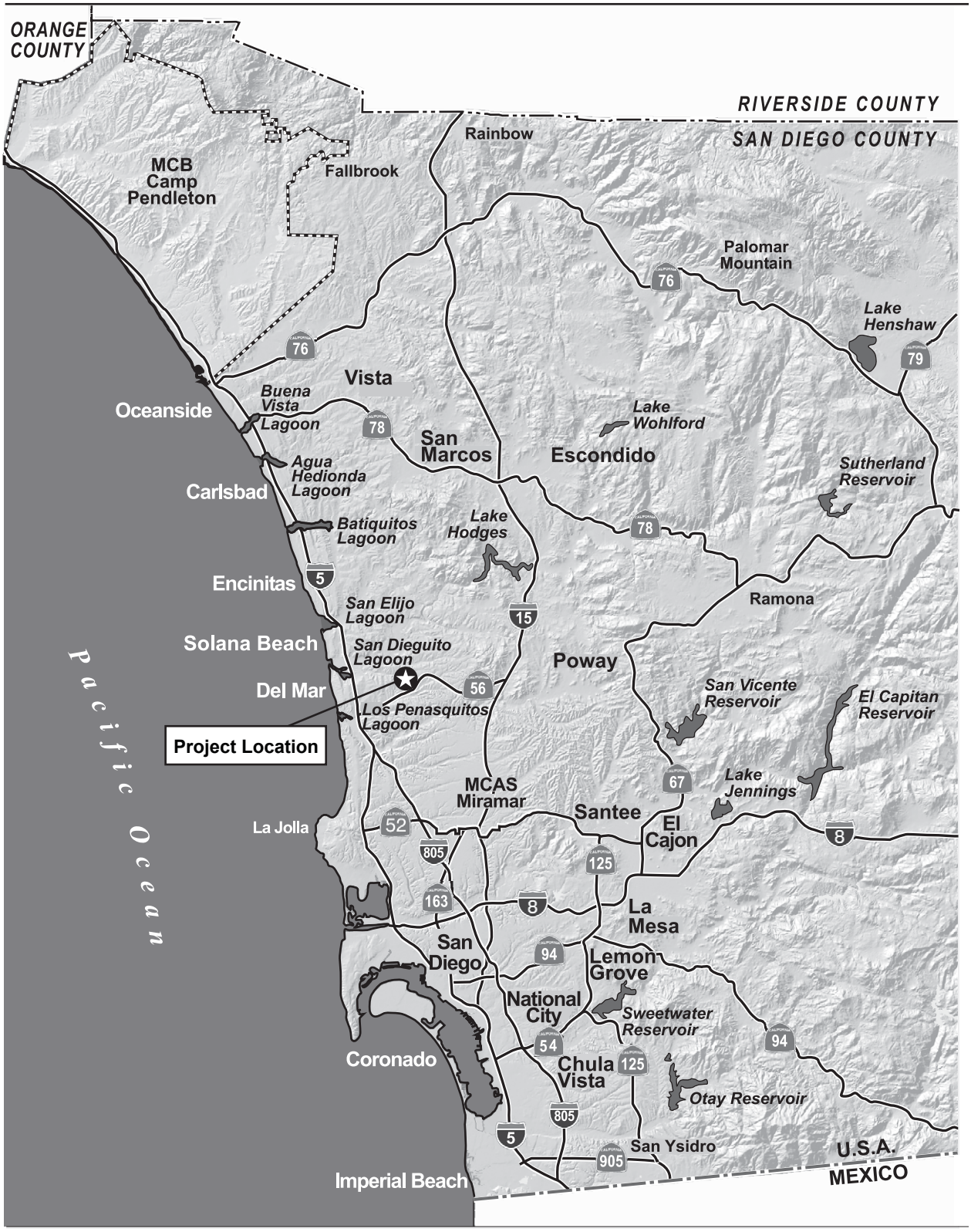
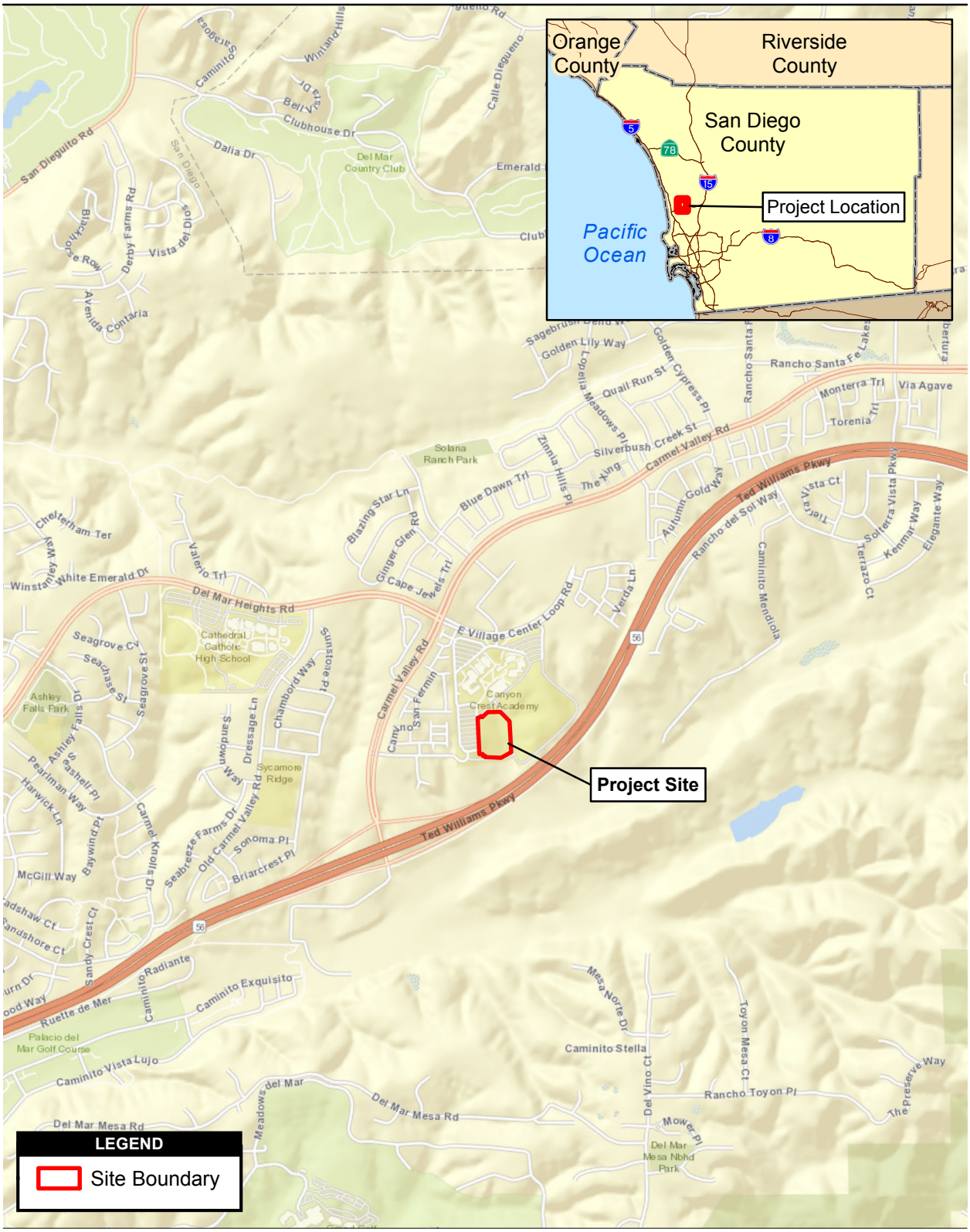


Figure 1
Regional Map



Source: SanGIS 2017; Esri 2018

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 2
Vicinity Map

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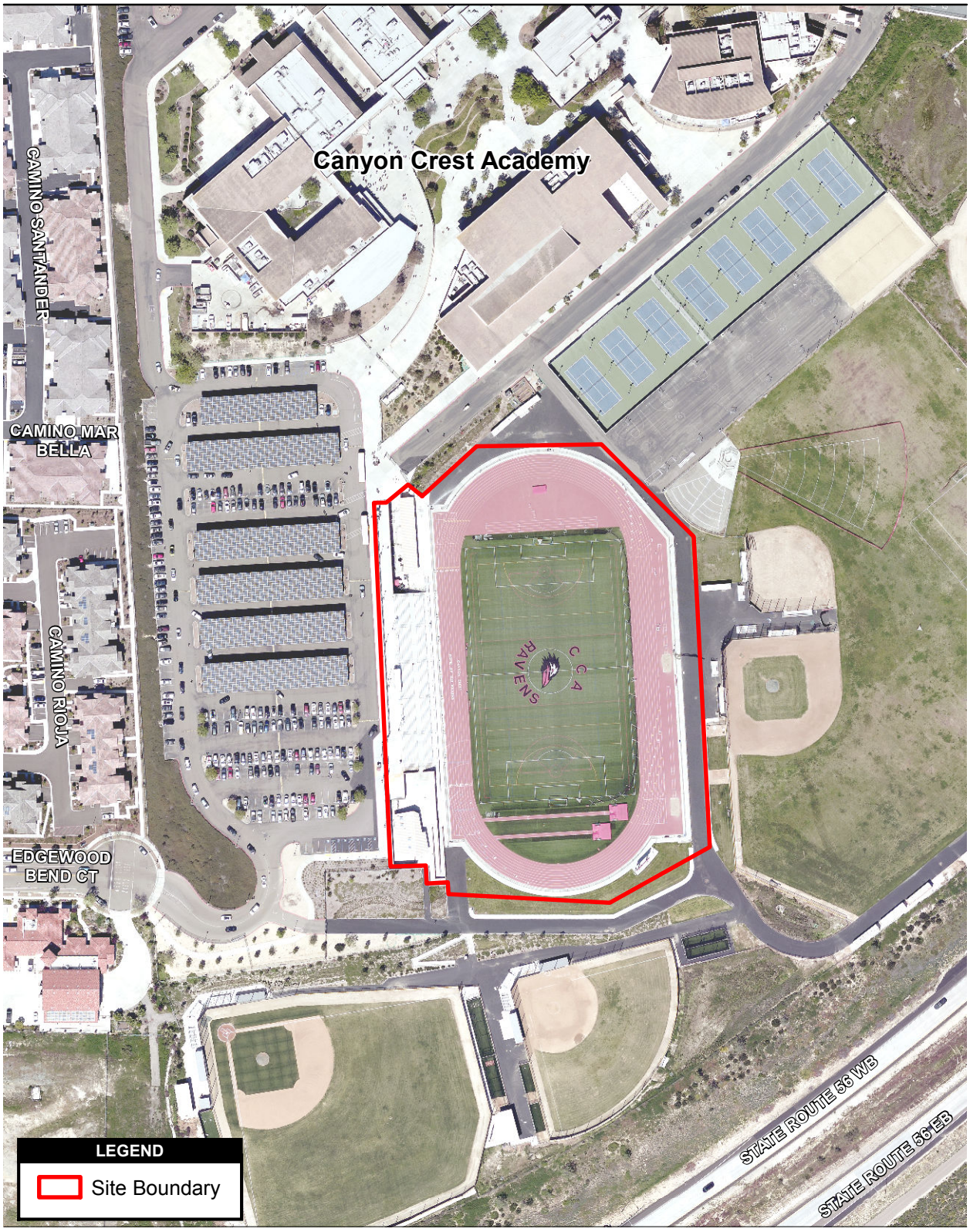

Source: SANDAG 2017

200 100 0 200 Feet

Scale: 1:2,400; 1 inch = 200 feet

Figure 3
Project Site Aerial Photograph

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Project Description

The CCA Stadium Lighting Project (proposed project) includes the construction of four stadium lighting poles around the multi-sport field at CCA. The poles would be placed outside of the track at the four corners of the field. The maximum height of the pole and light fixture at the southwest corner of the field would be 80 feet above the ground, while the other three poles and light fixtures would reach 90 feet above ground level. All project features would occur within the existing footprint of the multi-sport field.

The light fixtures would be equipped with LED (light emitting diode) lights. On the southwest pole, two fixtures would be placed at 10 feet above ground level for uplighting purposes to ensure there are no gaps in the lighting on the field. Two fixtures at 50 feet and two at 55 feet above ground level would be placed on the southwest for egress illumination, to ensure a safe exit from the bleachers. This lighting does not extend into the parking lot, as there is already lighting beneath the solar panels installed in the parking lots. Fifteen light fixtures would be placed at 80 feet above ground level on the southwest pole directed at the field and track to light the field. On the northwest pole, two uplighting fixtures would be placed at 15 feet above ground level. Two egress lighting fixtures would be placed at 60 feet and two at 65 feet above ground level. Fifteen light fixtures would be placed at 90 feet above ground level for field lighting. For the two poles on the east side of the field, two uplighting fixtures would be placed at 15 feet above ground level, two egress lighting fixtures would be placed at 60 feet above ground level, and 14 lighting fixtures would be placed at 90 feet above ground level.

It is anticipated that construction of the proposed project would take roughly 6 to 8 weeks and would occur during the summer when school is not in session. It is not anticipated that implementation of the proposed project would increase visitor attendance at the games. All light fixtures would be turned off by 9:30 p.m. Lights would generally be turned on at sunset and thus the illumination start and duration would vary slightly throughout the year. The following provides a schedule of the typical field use and when lighting would be used to facilitate activities. Generally, lights would not be used during summer months when school is not in session; however, summer events may occur that would require lighting. The policy of lights off at 9:30 p.m. included in the project design features would still apply.

Typical Week

Monday, Tuesday, Thursday:
Freshman practice on grass fields at 3:30 p.m.
Junior Varsity (JV) practice on multi-sport field at 3:30 p.m.
Varsity practice on multi-sport field at 5:00 p.m. (lights off by 7:30 p.m.)

Wednesday, Friday:
Freshman game on grass fields at 4:30 p.m.
JV game on multi-sport field at 4:30 p.m.
Varsity game to follow JV game at 6:00 p.m. (lights off by 8:30 p.m.)

Saturday: Lights off (other than potential playoff or tournament scenarios)
Sunday: Lights off

Typical Week with Season Transition and Playoffs

Playoffs are anticipated for two to three weekends per sport at varying times throughout the year.

Monday, Tuesday, Thursday:
Freshman practice on grass fields at 3:30 p.m.
JV practice on multi-sport field at 3:30 p.m.
Varsity practice on multi-sport field at 5:00 p.m. (lights off by 7:30 p.m.)
Note: If Boys or Girls Varsity Soccer playoffs then 7:00 p.m. game time (lights off by 9:30 p.m.)

Wednesday, Friday:
Freshman game on grass fields at 4:30 p.m.
JV game on multi-sport field at 4:30 p.m.
Varsity game to follow JV game at 6:00 p.m. (lights off by 8:30 p.m.)
(Note: If Boys or Girls Varsity Soccer playoffs then 7:00 p.m. game time (lights off 9:30 p.m.)

Saturday: Lights off (other than potential playoff or tournament scenarios)
Sunday: Lights off

Project Design Features

The District has incorporated various project design features as conditions of the project that will avoid potential impacts or reduce them to a less than significant level.

Aesthetics

To reduce impacts related to aesthetics, the District, or the District through its contractor, would:

- Design light fixtures to reduce light and glare impacts. Angle light fixtures and include shielding so that minimal light spillover beyond the track and field to adjacent portions of the school and surrounding properties would occur.
- Use LED lights in all light fixtures.
- Enforce "lights off" at the multi-sport field by 9:30 p.m.; however, in many cases, the lights will be turned off earlier as the lights will be turned off 2.5 hours after the sporting event start time.

Air Quality

To reduce impacts related to air quality, the District, through its contractor, would:

- Use adequate water and/or other dust palliatives on all disturbed areas.
- Wash down or sweep streets from which construction access is taken to remove dirt carried from the new alignment to the existing roadway to keep vehicles from pulverizing the dirt into fine particles.
- Terminate soil excavation, clearing, or grading when wind speeds exceed 25 miles per hour for an hourly average.
- Prohibit engine idling while waiting to load or unload if the expected wait exceeds 10 minutes.

Geology and Soils

To reduce impacts related to soil erosion, the following project design features will be employed prior to and during construction of the revised project by the District or the District's contractor:

- A fiber roll or other drainage/erosion control device will be placed around construction areas to protect natural drainage channels from sedimentation.
- Construction during periods of inclement weather will be avoided. Ensure that structural erosion and sediment transport control measures are ready for implementation prior to the onset of each storm event.

Hydrology and Water Quality

To reduce impacts related to water quality, the following project design features will be employed during construction of the revised project by the District or the District's contractor:

- Compliance with the
    - National Pollutant Discharge Elimination System (NPDES) San Diego Regional Municipal Separate Storm Sewer System (MS4) Permit;
- Implementation of best management practices (BMPs) including, but not limited to:
    - Placement of storm drain inlet/outlet protection for siltation control.
    - Use of fiber rolls or other drainage/erosion control device placed around construction areas to protect natural drainage channels from sedimentation.

Transportation and Traffic

To reduce impacts related to traffic, construction workers would enter the site from Edgewood Bend Court off of Carmel Valley Road. The construction workers would access the multi-sport filed from the fire access road. Construction associated with the project is anticipated to occur during the summer and would not conflict with student traffic to and from the site.

1.3 PURPOSE OF THIS NEGATIVE DECLARATION

This Negative Declaration has been prepared in accordance with California Environmental Quality Act (CEQA) Guidelines Sections 15070 to 15075. The purpose of this Negative Declaration is to evaluate the potential impacts that could occur as a result of the proposed project. Based on the scope and size of the proposed project, the District determined that a Negative Declaration was the appropriate environmental documentation to be prepared in compliance with CEQA.

SECTION 2: INITIAL STUDY/ENVIRONMENTAL CHECKLIST AND ASSESSMENT

1.	Project Title:	Canyon Crest Academy Stadium Lighting Project
2.	Lead Agency Name and Address:	San Dieguito Union School District 710 Encinitas Boulevard Encinitas, CA 92024
3.	Contact Person and Phone Number:	John Addleman (760) 753-6491
4.	Project Location:	5951 Village Center Loop Road San Diego, CA 92024
5.	Project Sponsor's Name and Address:	San Dieguito Union School District 710 Encinitas Boulevard Encinitas, CA 92130
6.	General Plan Land Use Designation:	Institutional & Public and Semi-Public Facilities
7.	Zoning:	Agricultural – Residential and Residential – Multiple Unit

8. Description of Project:
   As stated above, the proposed project would involve the construction of four light posts at the existing multi-sport field on the CCA campus.

9. Surrounding Land Uses and Setting:
   As stated previously, the land surrounding the project site and CCA campus is largely developed, consisting mostly of residential and commercial uses. The CCA campus is bordered by single-family residential land use to the east, commercial land use to the north, a City of San Diego park to the west, and SR 56 to the south.

ENVIRONMETAL FACTORS EVALUATED:

□ Aesthetics
□ Agriculture and Forestry Resources
□ Air Quality
□ Biological Resources
□ Cultural and Paleontological Resources
□ Energy
□ Geology and Soils
□ Greenhouse Gas Emissions
□ Hazards and Hazardous Materials
□ Hydrology and Water Quality
□ Land Use and Planning
□ Mineral Resources
□ Noise
□ Population and Housing
□ Public Services
□ Recreation
□ Transportation/Traffic
□ Tribal Cultural Resources
□ Utilities and Service Systems
□ Wildfire
□ Mandatory Findings of Significance

EVALUATION OF ENVIRONMENTAL IMPACTS:

This section presents a discussion of potential impacts that could result from implementation of the proposed project.

2.1 AESTHETICS

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				X

CCA is located within an existing urbanized area. Immediately north of the CCA campus is Village Center Loop Road, a four-lane road with divided medians, parallel parking lanes, and street lighting. On the north side of the roadway is a large commercial development with buildings, parking lots, and two-story residential condominiums and townhomes. Northeast of the CCA campus is a newly developed City of San Diego park and Pacific Trails Middle School. The city park has a wide variety of recreational facilities including a recreation center, dog parks, skate plaza, outdoor play areas, picnic areas, and outdoor multi-use fields with nighttime lighting. Beyond the park to the northeast are single-family and townhome residential land uses. SR 56 curves around the CCA campus from the northeast to the west, and runs along the entire southern border of the campus at a slightly lower elevation than the multi-sport field. In the proposed project vicinity, SR 56 is a four-lane state highway with a divided median. The City of San Diego Fire Station 47 is located southwest of the CAA parking lots and includes standard parking and landscaping. The entire western boundary of the CCA campus is developed with multi-family residential developments with mostly two-story homes.

The project site does not fall within a scenic view corridor, view point, scenic highway, or vista point. Additionally, the proposed project includes the construction of four stadium lighting poles at the multi-sport field on the CCA campus. The design of the stadium lighting would be consistent with the aesthetics of the surrounding urban areas and would not create an unexpected or out-of-context appearance. See Appendix A for further discussion. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X

See response 2.1 (a). There are no remarkable or unique scenic resources, such as visually important trees, rock outcroppings, or historic buildings in the vicinity of the project site. All project features would be placed along the perimeter of the existing footprint of the multi-sport field. Further, SR 56 is not designated as a state scenic highway. See Appendix A for further discussion. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publically accessible vantage point). If the project is in an urbanized are, would the project conflict with applicable zoning or other regulations governing scenic quality?			X	

See response 2.1 (a). Public views were analyzed in detail in Appendix A. Most public view points in the vicinity of the project site have an obstructed view of project site as a result of the topography of the area and existing development and vegetation. While the new lighting poles and pole-top luminaire assemblies would be larger and visually more substantial, there are already existing tall pole structures associated with street and parking lot lighting in the immediate vicinity. The addition of the new poles would not substantially alter the viewscape or create a stark visual change. Where the proposed project would be visible from public view points, it would be consistent with existing visual character and quality of the CCA campus and athletic facilities and would not create an unexpected or out-of-context appearance. Thus, the modification to the aesthetic environment would not substantially degrade the visual character or quality and would be less than significant.

The City of San Diego General Plan includes policy UD-a.13.e: Focus lighting to eliminate spillover so that lighting is directed, and only the intended use is illuminated (City of San Diego 2008a).

The City of San Diego Municipal Code has general regulations related to the installation and use of outdoor lighting (Chapter 14, Article 2, Division 7, Section 142.0740;). The general purpose and intent of the regulations are to:

1. Minimize negative impacts from light pollution including light trespass, glare, and urban sky glow in order to preserve enjoyment of the night sky and minimize conflict caused by unnecessary illumination.
2. Promote lighting design that provides for public safety and conserves electrical energy.
3. Outline compliance regulations for outdoor lighting fixtures.

The City of San Diego considers Palomar Observatory and Mount Laguna Observatory important dark night sky resources. Palomar Observatory is located at the top of Palomar Mountain (5,500 feet in elevation) in northern San Diego County approximately 30 miles from CCA, and Mount Laguna Observatory is located at an altitude of 6,100 feet on the eastern edge of the Cleveland National Forest approximately 45 miles from CCA. The City Municipal Code states:

> Within 30 miles of the Palomar and Mount Laguna observatories, outdoor lighting after 11:00 pm shall be limited to a maximum of 4,050 lumens per fixture or a maximum of 2500 Kelvin CCT.

The City regulations pertaining to maintaining dark skies for the observatories are generally not applicable to the proposed project as the site is located 30 miles or more from either observatory, and lighting is scheduled to be turned off by 9:30 p.m.

The proposed lighting system is designed to control and direct light precisely toward the desired location, minimizing any light spillover or other lighting impacts on surrounding areas (Musco 2018). The height of the light fixtures would allow the luminaire assemblies to be aimed downward at an acute angle to focus the shaft of light at the areas of desired illumination; thus, the light would be focused down toward the multi-sport field, not outward or toward off-site areas., The use of LED lights would allow for focused and energy-efficient light without a broad floodlight effect. The lighting technology would also include the use of shielding on all light fixtures that further direct the light downward and block upward light or off-site light.

The lighting design analysis (Musco 2018; provided in Appendix A) provides quantification of the illumination produced by the proposed project lighting design. The lighting analysis indicated that areas beyond the CCA campus, including residential areas, SR 56, and other local roadways, would not be exposed to horizontal or vertical light over 0.0 foot-candles, or essentially any light spill or trespass with a perceptible contribution to the ambient night lighting of the area. Thus, the proposed project would be compliant with the policies listed above, applicable zoning, or other regulations governing scenic quality of the project area. The proposed project is also compliant with policies in the Pacific Highlands Ranch Community Plan (1999) requiring that lighting be shielded from open space and directed away from habitat. With these project design features in place, there would be a less than significant impact related to regulatory compliance.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

See response 2.1 (c). The proposed project involves the addition of four stadium lighting fixtures at the existing multi-sport field on the CCA campus. As stated in Section 1.2, lights would generally be turned on at sunset each day during the school year, Monday through Friday. The lights would generally be turned off by 7:30 p.m. or 8:30 p.m. on a normal weekday, or 9:30 p.m. during playoffs. Playoffs would occur roughly 6- to 8 weeks spread throughout the school year. Lights may be used as needed on Saturdays during playoffs or tournaments, but would not be on past 9:30 p.m. Generally, lights would not be used during summer months when school is not in session; however, summer events may occur that would be require lighting and the 9:30 p.m. lights off policy included in the project design features would still apply.

The project design features identified in Section 1.2 include the design light fixtures to reduce light and glare impacts. Light fixtures would be angled and include shielding so that minimal light spillover beyond the track and field to adjacent portions of the school and surrounding properties would occur. LED lights would be used in all light fixtures, which allows for more directed use of the lighting. As detailed in Appendix A, the lighting design analysis indicates that areas beyond the CCA campus would not be exposed to illumination over 0.0 foot-candles, or essentially any light spill or trespass, and there would be an imperceptible contribution to the ambient night lighting of the area.

As stated previously, the area surrounding the project site is previously developed and urbanized. Existing light fixtures exist in the residential areas, parking lots, commercial spaces, and the new Pacific Highlands Ranch Community Park to the northeast of the project site. Some lighting exists on campus at the tennis and basketball courts as well.

As shown in Appendix A, all light and glare produced by the proposed project would be contained within the CCA campus. Further, as stated in response 2.1 (a), the project site is blocked from many of the surrounding public view points and residential areas as a result of the site's topography and existing development. As stated in response 2.1 (c), the proposed project would comply with the City of San Diego's lighting regulations and would not impact dark skies in the area. Implementation of the proposed project would not impact motorists on SR 56 due to the containment of the light within the CCA campus and the berm that exists along the north side of the roadway (see Appendix A for further detail).

While the proposed project would introduce a new source of light in the project area, project design features would minimize light trespass and glare. Additionally, this light would be consistent with the existing use of the project site and the urban setting of the surrounding area. Therefore, impacts would be less than significant.

2.2 AGRICULTURE AND FORESTRY RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X

The proposed project involves the addition of light fixtures at the multi-sport field on the CCA campus. The "San Diego County Important Farmland 2016" map generated by the California Department of Conservation through the Farmland Mapping and Monitoring Program (California Department of Conservation 2014) shows that the proposed project is located on, and is surrounded by, urban and built-up land. The proposed project is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and would not convert farmland to no-agricultural use. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X

The proposed project site is zoned by the City of San Diego as Agricultural Residential and Multiuse Residential. However, the proposed project site has been previously developed for educational and athletic use. The property does not lie within a Williamson Act contract area. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section (4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X

As stated in 2.2 (b) the proposed project site is zoned by the City of San Diego as Agricultural Residential and Multiuse Residential (City of San Diego 2018). The project site lies within an urban area and is currently built out as an athletic field for an existing school. There is no forest land or timberland at the proposed project site. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

As stated in response 2.2 (c) there is no forest land located on the proposed project site. The proposed project is located on the CCA campus at the previously developed multi-sport field. No forest land would be lost with the construction of the proposed project. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

As stated in responses 2.2 (b), 2.2 (c), and 2.2 (d), there is no forest land or farmland located at the proposed project site. The proposed project would be located on the multi-sport field at CCA, which is currently developed as a school facility. The proposed project would not result in conversion of farmland or forest land. The area surrounding the proposed project site is built out as residential or commercial properties, so no other changes to the existing environment would convert farmland or forest land. Therefore, no impact would occur.

2.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	

The proposed project is located within the San Diego Air Basin (SDAB) under the jurisdiction of the San Diego Air Pollution Control District (SDAPCD). The SDAB currently meets the National Ambient Air Quality Standards (NAAQS) for all criteria air pollutants except ozone (8-hour). The SDAB is classified as an attainment/maintenance area for carbon monoxide (CO) and is unclassifiable for particulate matter less than 10 microns in diameter (PM_{10}). The SDAB is currently classified as a nonattainment area under the California Ambient Air Quality Standards (CAAQS) for ozone, particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) (ARB 2015). All areas designated as being in nonattainment are required to prepare air quality plans. Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain NAAQS and CAAQS into compliance with those standards pursuant to the requirements of the Clean Air Act and California Clean Air Act.

Nonattainment areas must submit a State Implementation Plan (SIP) outlining the combination of local, state, and federal strategies aimed at bringing the area into attainment. To address this requirement, the SDAPCD updated its Attainment Plan for the 2008 Eight-Hour Ozone Standard (Attainment Plan) and Regional Air Quality Strategy (RAQS) in 2016 (SDAPCD 2016). A project's consistency with the RAQS and Attainment Plan is based on whether the project would exceed the estimated air basin emissions, which are based in part on equipment use assumptions, projections of population, and vehicle miles traveled (VMT). For instance, an increase in VMT beyond projections in such plans could result in a significant adverse incremental effect on a region's ability to attain or maintain ambient air quality standards.

The proposed project would involve minimal construction activities that would be short term and temporary. The use of construction equipment in the RAQS is estimated for the region on an annual basis, and due to the minor construction activities and short duration of construction, the proposed project would not increase the assumptions for off-road equipment use. The proposed project would construct lighting at the multi-sport field of the existing school and would not increase visitor attendance at the sports games. Thus, the proposed project would not increase population, employment, or vehicle trips over the current assumptions used to develop the RAQS and SIP. Therefore, implementation of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan and this impact would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SDAB, and this regional impact is cumulative rather than attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

Construction activities for the proposed project would generate temporary emissions of volatile organic compounds (VOC), nitrogen oxides (NO_x), CO, sulfur oxides (SO_x), PM_{10}, and $PM_{2.5}$. VOC, NO_x, and CO emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive dust emissions (PM_{10} and $PM_{2.5}$) are associated primarily with ground disturbance and fill removal and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles.

Construction-related emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. CalEEMod allows the user to enter project-specific construction information, such as the construction schedule, the types and number of construction equipment, and the number of off-site motor vehicle trips. Construction of the proposed project is anticipated to begin in June 2019 and last approximately 6 to 8 weeks. Construction activities for installation of the lighting would include site preparation, minor excavation for the drill footing and underground trenching, and pole setting. The estimated construction workforce is a maximum of eight workers per day. The analysis also assumed minimal grading would be needed and a maximum of 50 cubic yards of earth would be transported. Additional details are available in Appendix B.

As shown in Table 1, construction activities for the proposed project would generate maximum daily emissions of approximately 1 pound of VOC, 8 pounds of NO_x, 7 pounds of CO, less than 1 pound of SO_x, 0.5 pound of PM_{10}, and 0.4 pound of $PM_{2.5}$. Additional modeling assumptions and details are provided in Appendix B.

Table 1
Unmitigated Daily Construction Emissions

	VOC (lbs/day)	**NO_X (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)** [1]	**$PM_{2.5}$ (lbs/day)**
Maximum Daily Emissions	0.87	8.01	6.65	0.02	0.53	0.43
Threshold of Significance	137	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

Notes: VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter; lbs/day = pounds per day
Source: Estimated by AECOM in 2019

As shown in Table 1, maximum daily construction emissions of VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ would not exceed the recommended thresholds of significance. These thresholds are designed to identify

those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards. Projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria air pollutant emissions to the region's emissions profile, and would not impede attainment and maintenance of ambient air quality standards. Therefore, construction activities associated with the revised project would not be cumulatively considerable. Maintenance-related and operational activities of the multi-sport field are not anticipated to increase above existing conditions with implementation of the proposed project. Therefore, this impact would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?			X	

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when air quality impacts from a project are evaluated. These groups include children, older adults, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Since installation of the lighting at the multi-sport field on the school campus would occur during the summer when school is not in session, the nearest sensitive receptors would be the multi-family residential units located approximately 440 feet west of the multi-sport field.

As shown in Table 1, construction and installation of the lighting poles would result in emissions of criteria air pollutants, but at levels that would not exceed the City of San Diego thresholds of significance. The thresholds of significance were designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards, which were established using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. As such, the construction-related criteria air pollutant emissions associated with the proposed project would not expose sensitive receptors to substantial pollutant concentrations.

In addition to criteria air pollutants, construction of the proposed project would also generate toxic air contaminant (TAC) emissions, specifically diesel particulate matter (diesel PM), associated with heavy-duty construction equipment operations. The Office of Environmental Health Hazard Assessment (OEHHA) developed a Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015). Due to uncertainty in assessing cancer risk from very short-term exposures, OEHHA does not recommend assessing cancer risk for construction of projects lasting less than 2 months for the nearest residential receptor. Since the duration of construction activities for the proposed project is anticipated to last approximately 6 to 8 weeks and would cease following completion of the project, the overall exposure period would not meet the requirements for assessing cancer risk (OEHHA 2015). In addition, construction emissions would occur intermittently throughout the day and would not occur as a constant plume of emissions from the project site.

Based on the anticipated construction schedule and the highly dispersive nature of diesel PM emissions, construction of the proposed project would not expose sensitive receptors to substantial TAC concentrations. Further, maintenance-related and operational activities of the multi-sport field are not anticipated to increase above existing conditions with implementation of the proposed project. In addition, educational land uses are not typically substantial sources of TACs. Therefore, the proposed

project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) Result in other emissions (such as those leading to odors affecting a substantial number of people?			X	

The occurrence and severity of odor impacts depend on numerous factors: the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, and they can generate citizen complaints to local governments and regulatory agencies.

Potential construction-related sources of odors include diesel construction equipment types that emit exhaust. However, because of the amount and types of equipment, the temporary nature of these emissions, and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by diesel exhaust odors associated with construction of the proposed project. Construction activities associated with the proposed project would be minimal and the odors would be typical of most construction sites and temporary in nature. Operation of the proposed project would remain similar to existing conditions and would not add any new odor sources. As a result, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Therefore, this impact would be less than significant.

2.4 BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X

The proposed project would occur on a previously developed school campus in an urban residential and commercial area. Open space canyons near the proposed project site are separated from the proposed project by a residential development and SR 56. The proposed project would not alter habitat, and implementation of the proposed project would not result in a substantial adverse effect on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X

There are no riparian habitats or other sensitive habitats within the proposed project site. Open space canyons near the proposed project site are separated from the proposed project by a residential development and SR 56. BMPs of the proposed project would include the use of fiber rolls to reduce runoff from construction activities. Operation of the proposed project would not generate runoff. As the proposed project site is previously developed, separated by development and infrastructure from any open space land, and would not generate runoff, the proposed project would have no impact on riparian habitat or other sensitive natural communities.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X

The proposed project site is a previously developed multi-sport field on an existing school campus within a developed urban area. Further, it was determined in the 2003 Mitigated Negative Declaration prepared for the construction of the CCA campus that no wetland vegetation is present on the site (RBRiggan & Associates 2003). Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X

As stated previously, no habitat occurs on the proposed project site. It is unlikely that wildlife uses the multi-sport field as a movement corridor; however, implementation of the proposed project would not block any wildlife corridors as the proposed project only involves the addition of four light posts. The proposed project would not interfere with fish or wildlife movement. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X

The proposed project site does not contain any vegetation or biological resources. No biological resources would be removed or harmed through the construction of the proposed project, nor would any be impacted by the operation of the proposed project. Therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources, and no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

The proposed project site is located outside of areas proposed for conservation in the Multiple Species Conservation Plan Subarea Plan for the City of San Diego (City of San Diego 1997). The proposed project site is previously developed and would not conflict with any adopted local, regional, or state habitat conservation plans. Therefore, no impact would occur.

2.5 CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as pursuant to §15064.5?				X

The CCA campus was fully constructed in 2006, prior to which, a cultural resources study was conducted during the associated CEQA review. No historical resources are present on the campus or within the proposed project site (RBRiggan & Associates 2003). The proposed project involves the construction of four light poles at the existing multi-sport field on the CCA campus. The implementation of the proposed project would not cause an adverse change to a historical resource; therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?				X

The Pacific Highlands Ranch Master Environmental Impact Report included comprehensive surveys and testing programs, which included the project site, and determined that no significant prehistoric resources are located at the project site (City of San Diego 1998). Further, the project site was graded in the early 2000s during the construction of CCA. The proposed project is to be constructed on previously disturbed and developed land and would not adversely affect archaeological resources. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of formal cemeteries?				X

See response 2.5 (b). Prior to the construction of the CCA campus, a cultural resources investigation was conducted, and no human remains were identified on the project site (RBRiggan & Associates 2003). Construction associated with the proposed project would be minimal and concentrated in specific areas that are known to contain cut and fill soils associated with previous construction activities. See Section 3.18, Tribal Cultural Resources, for further discussion on construction monitoring activities. Therefore, no impacts are anticipated to occur.

2.6 ENERGY

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				X

Construction activities would be short in duration and would require minimal construction equipment. Further, Air Quality Project Design Features described in Section 1.2 would limit wasteful energy use during construction. Lighting for the proposed project has been designed with LED energy-efficient lighting and would only be turned on for a few hours per day at a maximum. Neither construction nor operation of the proposed project would result in wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

See response 2.6 (a). The proposed project would be constructed on a previously developed school site and would not conflict with any plans for renewable energy. Solar panels were previously constructed over some of the parking areas on the CCA campus. The lighting associated with the proposed project has been designed to be energy efficient and would not require significant amounts of energy. Further, usage

of the lights would be confined to only a few hours a day, which would reduce the potential for energy waste. Therefore, no impact would occur.

2.7 GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	

i. The proposed project is located within seismically active southern California, an area where several faults and fault zones are considered active by the California Division of Mines and Geology. The project site is not listed in an Alquist-Priolo Earthquake Fault Zone (California Geological Survey 2015). The closest faults to the proposed project are the Rose Canyon Fault, which is located roughly 7 miles west of the project site offshore and the Coronado Bank Fault, which is an active zone of deformation located offshore approximately 18 miles from the project site (California Department of Conservation 2010). The proposed project would only involve the construction of light poles at an existing multi-sport field. It is not anticipated that visitation to the field would increase with implementation of the proposed project. While the proximity of the active faults suggests the potential for moderate to severe ground shaking to exist during a major earthquake, the proposed project would adhere to the latest seismic standards in building construction and impacts to people and/or structures would be less than significant.

ii. See response 2.7 (a). The proximity of active faults suggests the potential for moderate to severe ground shaking to exist during a major earthquake. However, according to the San Diego Seismic Safety Study (City of San Diego 1974), the proposed project is in a low to moderate risk area. As a result, less than significant impacts to people and structures would occur.

iii. CCA campus is underlain by the Friars Formation, Stadium Conglomerate, and Mission Valley formation (Kennedy 1975). Seismic ground failure and liquefaction are not considered issues on the CCA campus as it is located in a low to moderate risk area according to the City of San Diego Geotechnical and Relative Risk Areas (City of San Diego 2008b). As stated previously, the proposed project would adhere to the latest seismic standards in building construction. Therefore, impacts would be less than significant.

iv. Based on a review of the Seismic Safety Study prepared by the City of San Diego (1974), the project site does not fall within an area susceptible to landslides. As a result, less than significant impacts would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or loss of topsoil?			X	

The proposed project includes the construction of four light fixtures at an existing multi-sport field. An element of soil erosion is possible during the construction of the proposed project. To reduce possible soil erosion, the following project design features will be emplaced:

- A fiber roll or other drainage/erosion control device will be placed around construction areas to protect natural drainage channels from sedimentation.
- Construction during periods of inclement weather will be avoided. Ensure that structural erosion and sediment transport control measures are ready for implementation prior to the onset of each storm event.

With the implementation of these project design features, impacts related to soil erosion or the loss of topsoil would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	

See response 2.7 (a). The project site has been evaluated for geologic instability as part of the City of San Diego General Plan Program Environmental Impact Report (2008) and the Seismic Safety Study prepared by the City of San Diego (1974). Both studies determined that the CCA campus is in a low to moderate risk geologic hazard area and that landslides, lateral spreading, subsidence, liquefaction or collapse do not typically occur at the project site. The proposed project would be built in accordance with latest seismic standards in building construction. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	

As stated in response 2.7 (iii), Friars formation is present at the proposed project site. The Friars formation contains clays that are potentially highly expansive (Converse Consultants 1993). However, during the construction of the CCA campus, mitigation measures were implemented to mitigate the effects of expansive soils. Mitigation included burial of expansive soils, overexcavation and recompaction of poorly consolidated soils, or buttressing of unstable claystone beds (RBRiggan & Associates 2003). As

a result, expansive soils are unlikely to be encountered by the proposed project and would not create a substantial direct or indirect risk to life or property. Therefore, the impact would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

The proposed project does not include construction of a septic tank or alternative waste water disposal system. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

Paleontological resources or features are unlikely to be encountered at the proposed site as the multi-sport field is underlain by cut and fill soils associated with previous grading and constriction of the school (RBRiggan & Associates 2003). As a result, it is unlikely that paleontological resources or unique geologic feature are present at or near the multi-sport field. Therefore, construction of the proposed project is not likely to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature and the impact would be less than significant.

2.8 GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	

Global climate change refers to changes in average climatic conditions on the earth as a whole, including temperature, wind patterns, precipitation, and storms. Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. GHGs are present in the atmosphere naturally, are released by natural sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels, waste treatment, and agricultural processes.

The District has not adopted a specific GHG threshold to analyze projects under CEQA. Therefore, to establish additional context in which to consider the proposed project's GHG emissions, this analysis reviewed guidelines used by other public agencies. Other districts, including the South Coast Air Quality

Management District (SCAQMD), have recommended that GHG emissions from construction and short-term sources be amortized over the lifetime of the project (typically assumed 30 years) for comparison with significance thresholds (SCAQMD 2008). The draft thresholds released by the SCAQMD include possible thresholds of 3,000 metric tons (MT) carbon dioxide equivalents (CO_2e) per year for all non-industrial projects (residential, commercial, and mixed-use projects). The most conservative threshold was included in the California Air Pollution Control Officers Association (CAPCOA) report, CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, which recommends a threshold of 900 MT CO_2e per year for any residential, commercial, or industrial project (CAPCOA 2008). These significance thresholds were developed to assess consistency of a project's emissions with the statewide framework for reducing GHG emissions. However, it is not the intent of the District to adopt this threshold as a mass emissions limit for this or other projects, but rather to provide this additional information to put the project-generated GHG emissions in the appropriate statewide context.

Heavy-duty off-road equipment, materials transport, and worker commutes during construction of the proposed project would result in exhaust-related GHG emissions. Construction-related GHG emissions were estimated using the same methodology discussed earlier in Section 3.3, Air Quality. The total CO_2e emissions associated with construction of the proposed project would be approximately 14 (MT) CO_2e. Since the proposed project is not anticipated to increase visitor attendance and maintenance-related activities would remain similar to existing conditions, operational emissions associated with the proposed project would be limited to indirect GHG emissions associated with energy consumption of the light fixtures. Based on information provided by Musco Sports Lighting, LLC (Musco), it is anticipated that the total load of the lighting system would be 79.10 kilowatts (Musco 2018). Given the anticipated duration that the lights would be on, annual electricity consumption would equate to approximately 61,382 kilowatt-hours per year. Table 2 summarizes the operational emissions and amortized construction GHG emissions associated with the proposed project. Additional details are available in Appendix B.

Table 2
Annual GHG Emissions

Source	GHG Emissions (MT CO_2e)
Total Construction Emissions	14.29
Amortized Construction Emissions[1]	0.48
Operational Emissions	16.43
Total Annual GHG Emissions[2]	**16.91**

MT CO_2e = metric tons carbon dioxide equivalents
Notes:
[1]Amortized emissions estimated assuming a 30-year lifetime of the project (14 MT CO_2e divided by 30 years).
[2] Total may not add due to rounding.
Source: Estimated by AECOM in 2019

As shown in Table 2, the total construction-related and operational CO_2e emissions of 17 MT CO_2e associated with the proposed project would be substantially less than any of the proposed or adopted GHG thresholds (CAPCOA annual threshold of 900 MT CO_2e and SCAQMD annual threshold of 3,000 MT CO_2e). Since these thresholds were developed to allow projects to demonstrate consistency with the statewide framework for reducing GHG emissions, the proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, impacts related to GHG emissions would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases?			X	

There are several statewide plans, policies, and regulations related to climate change and GHG reduction. These include the 2008 ARB Climate Change Scoping Plan (updated in 2014) (ARB 2014), Senate Bill 32, and the Final Proposed 2017 Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target. Successful implementation of these measures predominantly depends on the development of laws and policies at the state level. As such, none of these statewide plans or policies constitute a regulation to adopt or implement a regional or local plan for reduction or mitigation of GHG emissions. Thus, it is assumed that any requirements or policies formulated under the mandate of AB 32 and SB 32 that would be applicable to the project, either directly or indirectly, would be implemented consistent with statewide policies and laws.

The District has not adopted a plan, policy, or regulation for the purpose of reducing GHG emissions. As such, the proposed project would not conflict with the AB 32 Scoping Plan and Scoping Plan update; or any other plans, policies, or regulations for the purpose of reducing GHG emissions. As discussed in response 2.8 (a), the proposed project would also not generate GHG emissions that would have a significant impact on the environment. Further, as an effort to meet the goals of AB 32 to reduce statewide GHG emissions, the California Building Standards Code established the California Green Building Standards Code (*CALGreen*). *CALGreen* encourages sustainable construction practices and building design in the categories of planning and design, including energy efficiency. The proposed project would install light fixtures equipped with LED lights. LED is a highly energy-efficient lighting technology that consumes less electricity, and indirectly emits less GHG emissions, than incandescent lighting (DOE 2019). Therefore, based on the quantitative emission estimates and because the proposed project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions, this impact would be less than significant.

2.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	

The proposed project includes the construction of four light fixtures. Operational use of the proposed project will not result in the routine transport or disposal of hazardous materials. Construction of the proposed project would involve the transportation of gasoline and other fuels to the project site for the purpose of equipment fueling and maintenance. The construction of the proposed project would be short in duration and would take place during the summer months when school is not in session at CCA. All hazardous waste would be disposed off-site and away from CCA campus. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	

See response 2.9 (a). Construction of the proposed project would occur over a 6- to 8-week period over the summer when school is not in session and students are not on campus. Hazardous materials would be limited to standard oil and gas associated with construction equipment. Standard BMPs would be implemented to ensure that no spills or leaks occur during the construction of the proposed project. In the event that an accidental release occurs, proper authorities would be contacted and the contaminants would be contained and cleaned up. Operational activities associated with the proposed project would not release hazardous materials to the environment. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	

See response 2.9 (a). While the proposed project is located on a school campus, operational activities associated with the proposed project would not emit hazardous emissions, involve the use of hazardous materials or substances, or create hazardous waste. The construction of the proposed project would be short term and would only involve the routine use of gasoline and fuel for construction equipment. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X

A Phase I Site Assessment and subsequent Preliminary Endangerment Assessment were prepared for the construction of CCA's campus in. The assessments found that there were no adverse health risks to students attending school on the CCA campus 2001 (RBRiggan & Associates 2003). Since these studies were conducted, the multi-sport field has only been used for athletic purposes. Therefore, no new hazardous materials would have been introduced to the project site. The proposed project would not be located on a site that would create any significant hazard to the public or environment. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X

The proposed project would not subject users to safety hazards associated with public or private airports. The Marine Corps Air Station (MCAS) Miramar is the closest airport to the project, located roughly 6.5 miles southeast of the proposed project site. The proposed project is roughly 10.3 miles from the Montgomery Field Airport, roughly 13 miles from the McClean-Palomar Airport, and roughly 15.3 miles from San Diego International Airport. The proposed project site falls within the Federal Aviation Regulation (FAR) Part 77 Outer Boundary for MCAS Miramar. The proposed light fixtures would not exceed 90 feet above ground surface. The proposed project would not cross the height limits established by the FAR Part 77 standards and is therefore excluded from the MCAS Miramar airspace protection compatibility area (San Diego County Airport Land Use Commission 2011). The project site does not fall within any safety, notification, noise, or airport influence areas for Montgomery Field, McClean-Palomar, or San Diego International Airport, as identified by the San Diego County Airport Land Use Commission. Therefore, the project would not result in a safety hazard or excessive noise for people residing and working in the area. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	

Construction of the proposed project would occur during the summer months while the students are not present on the CCA campus. It is anticipated that no more than eight construction workers would be on the construction site and that no more than five truck trips would occur over the duration of construction activities. This would not create substantial traffic during construction or interfere with an adopted emergency response plan or emergency evacuation plan. The construction workers would enter the proposed project site from Edgewood Bend Court off of Carmel Valley Road, and the trucks would access the proposed project from the fire access road. Trucks and construction worker vehicles would not park along or block the fire access road. It is not anticipated that attendance at sporting games would increase as a result of the proposed project, therefore construction and operations of the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

The proposed project is located on the existing developed multi-sport field and is not located within or adjacent to any wildlands areas. Surrounding land uses include commercial and residential properties, as well as a city park and SR 56. There would be no impact.

2.10 HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?			X	

As stated in response 2.7 (b), project design features would be implemented to minimize the potential impacts to water quality or waste discharge requirements that could result from erosion associated with the proposed project construction. The following project design features will be employed during construction of the revised project by the District or the District's contractor:

- Compliance with the NPDES San Diego Regional MS4 Permit;
- Implementation of BMPs including, but not limited to:
    - Placement of storm drain inlet/outlet protection for siltation control.
    - Use of fiber rolls or other drainage/erosion control device placed around construction areas to protect natural drainage channels from sedimentation.

Construction of the proposed project would not increase the amount of impervious surfaces at the project site. Operation of the proposed project would not discharge waste or pollutants in to surrounding surface or groundwater resources. The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Therefore impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X

Construction and operational activities associated with the proposed project would not require dewatering of the site; therefore, groundwater supplies would not be affected. Construction of the proposed project would not create substantial new impervious surfaces at the project site and therefore would not interfere with groundwater recharge. There would be no net deficit in aquifer volume or a lowering of the local groundwater table level. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site?			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?			X	
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	

i) The proposed project would not result in substantial alteration of the existing drainage pattern of the multi-sport field. Drainage from the minor new and existing structures and impervious surfaces would continue to flow into existing storm drain systems. Additionally, project design features identified in response 2.7 (b) would further minimize erosion or sedimentation impacts. The proposed project would have a less than significant effect on the existing drainage patterns and substantial erosion or siltation on- or off-site is not anticipated to occur.

ii) See response 2.10 (c) i). The proposed project is on the previously developed multi-sport field and would not alter the existing drainage pattern or alter a stream or river that would increase runoff in a manner that would result in flooding. Drainage would continue to flow into existing storm drain systems. The construction of the proposed project would occur over the summer months when rainfall is minimal in San Diego. Further, new impervious surfaces that would result from the proposed project would be minimal. Therefore, this would not increase amount of surface runoff and there would be a less than significant impact.

iii) See responses 2.10 (c) i) and ii). Surface runoff would not increase due to the proposed project. The proposed project would not exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. There would be a less than significant impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X

The project site is not located in the immediate vicinity of a beach or an area of steep slopes and would not be susceptible to seiche, tsunami, or mudflow. The proposed project site is not within a 100-year flood hazard area, delineated on a Federal Flood Hazard Boundary of Flood Insurance Rate Map (SanGIS 2018) or other flood hazard delineation map. Therefore, project inundation would not risk release of pollutants in these zones and no impacts are expected to occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

See responses 2.10 (a) and (b). Construction of the proposed project would adhere to the project design features outlined above so that the proposed project would not conflict with or obstruct implementation of a water quality control plan. Operation of the proposed project would not impact existing drainage patterns and would not contribute pollutants or sediments into existing waterways. The proposed project would not drain groundwater resources nor would it prohibit groundwater recharge. Therefore, impacts would be less than significant.

2.11 LAND USE

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Physically divide an established community?				X

The proposed project is located at the multi-sport field on the CCA campus. The proposed project would be contained at the multi-sport field and would not physically divide an established community. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Cause significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

The proposed project is located within the City of San Diego, and CCA's campus is operated under a Conditional Use Permit. The City's General Plan designates the CCA property as Institutional & Public and Semi-Public Facilities (City of San Diego 2008a). The project site is zoned by the City of San Diego as agricultural residential and multi-use residential (City of San Diego 2014). The proposed project would not change the zoning or land use of the CCA campus. The City of San Diego General Plan includes policy UD-a.13.e: Focus Lighting to eliminate spillover so that lighting is directed, and only the intended use is illuminated (City of San Diego 2008a). The proposed project is consistent with this policy through design of the lighting structures. Compliance with the City of San Diego Municipal Code is discussed under response 2.1 (c) above. The CCA campus is not located within the coastal zone. The proposed project falls within the Pacific Highlands Ranch Community Plan area and is in accordance with this plan as the project site is designated as a Senior/ Junior High School. The proposed project is compliant with policies in the Pacific Highlands Ranch Community Plan that require that lighting be shielded from open space and directed away from habitat. The proposed project does not conflict with any applicable land use plan, policy, or regulation and therefore would have no impact.

2.12 MINERAL RESOURCES

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the state?				X

The proposed project is located on developed land at an existing school site. As noted on the Mineral Land Classification map published by the California Department of Conservation (1996), the project site is designated as Mineral Resource Zone-3 (MRZ-3): areas containing mineral deposits, the significance of which cannot be determined by available data. Since the proposed project is on existing developed land, the proposed project would not affect the availability of known mineral resources that would be of value to the region and/or residents of the state. Therefore, the proposed project would have no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

As shown on the City of San Diego Generalized Mineral Land Classification map in the City of San Diego General Plan (2008a), the proposed project site is designated MRZ-3: areas containing mineral deposits, the significance of which cannot be determined by available data. The project site is currently developed and would occur within the boundaries of the existing CCA campus. The proposed project would not result in the loss of availability of a locally important mineral resource recovery site. Therefore, the proposed project would have no impact.

2.13 NOISE AND VIBRATION

Would the project result in:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) 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?			X	

Construction of the proposed project would last 6 to 8 weeks. Construction would occur during the summer months when school is not in session and students are not anticipated to be on campus. Although CCA and Pacific Trails Middle School would each be generally considered a noise-sensitive land use, because proposed project construction and operation will occur outside of the school year and outside of school educational hours, respectively, the closest sensitive receptor was determined to be the residential area immediately west of the CCA western parking lot. As shown in Appendix C, no studied noise-

sensitive land uses are predicted to experience a 12-hour average noise level exceeding the City of San Diego ordinance 12-hour construction noise level limit. As stated previously, implementation of the proposed project is not anticipated to increase visitor attendance. Therefore, noise associated with the proposed project would not increase, but would occur in the evening rather than the late afternoon. Sources of noise associated with the proposed project would include noise from vehicle traffic and from the public address system or crowd cheering. As shown in Appendix C, this change in timing of the noise generation would not be perceptible above existing conditions. Further, lighting fixtures at the multi-sport field would be turned off by 9:30 p.m. at the latest on game days, so noise associated with the proposed project would not persist late into the night. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	

Construction of the proposed project would be temporary, as stated in response 2.13 (a). The amount of construction equipment would be minimal, and the nearest sensitive structure is roughly 400 feet away from the project site. As stated in Appendix C, the predicted vibration level from the drilling activity is well below the applicable vibration damage threshold and annoyance criteria. Additionally, groundborne noise would be significantly lower than the noise generated by above-ground construction noise sources. Operation of the lighting fixtures would not generate excessive groundborne vibration or noise levels. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) 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, would the project expose people residing or working in the project area to excessive noise levels?				X

See response 2.9 (e) for a discussion of airport locations relative to the proposed project site. The proposed project site is located within MCAS Miramar Air Installations Compatible Use Zones (AICUZ) (San Diego County Airport Land Use Commission 2011). However, MCAS is located approximately 6 miles south-southeast of the proposed project, and the proposed project does not land within the boundary of any predicted Community Noise Equivalent Level noise contours presented in the MCAS AICUZ. Therefore, no impact would occur.

2.14 POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X

The proposed project involves the construction of four light fixtures on the multi-sport field located on the CCA campus and is not considered growth inducing. The addition of the light fixtures is not anticipated to increase visitation at sporting events and would not influence the local population in the surrounding community. The proposed project does not include the construction of new homes or businesses, the extension of roads, or infrastructure. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

The proposed project involves the construction of four light fixtures on the multi-sport field located on the CCA campus. The proposed project would occur at the CCA multi-sport field and no housing would be displaced as a result of the proposed project. No replacement housing would be required. Therefore, no impact would occur.

2.15 PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Fire protection?				X

The proposed project would involve the construction of four light fixtures at the multi-sport field on the CCA campus. The proposed project would not result in increased attendance at the sporting events held at the multi-sport field. CCA is adjacent to and serviced by San Diego Fire Station 47. No additional fire protection would be required with the implementation of the proposed project, and service ratios and response times would not be affected. Therefore, no additional fire protection facilities or expansion of existing facilities would need to be constructed and there would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Police protection?				X

No additional police protection is required for the proposed project. Therefore, no impact would occur. The proposed project would involve the construction of four light fixtures at the multi-sport field on the CCA campus. The proposed project would not result in increased attendance at the sporting events held at the multi-sport field. No additional police protection would be required with the implementation of the proposed project, and service ratios and response times would not be affected. Therefore, no additional police protection facilities or expansion of existing facilities would need to be constructed and there would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Schools?				X

CCA is a public school of choice where any student in the District can choose to attend the academy. CCA serves roughly 2,575 high school students in grades 9 through 12. Construction of four light fixtures at the multi-sport field on the CCA campus is not considered growth inducing and would not cause an increase in student enrollment. Therefore, no school facilities would need to be constructed as a result of the proposed project. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Parks?				X

The proposed project is not considered growth inducing and would not affect the use of parks in the area. Therefore, the proposed project would not result in the need for new park facilities. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) Other public services?				X

All construction, maintenance, management, and liability of the proposed project would be the responsibility of the District. Therefore, no additional demands on outside public services and facilities would occur and there would be no impact.

2.16 RECREATION

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X

As stated in 2.15 (d), the proposed project is not growth inducing and would not result in the increased use of existing recreational facilities, nor would it result in an increased population that would use local recreation facilities. Physical deterioration of the facility would not occur as a result of the proposed project and there would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

The proposed project would involve the construction of four light fixtures at the existing recreational multi-sport field, which serves various sports such as soccer, lacrosse, and field hockey on the CCA campus. No expansion of the existing multi-sport field and no construction of a new recreational facility are proposed. There would be no impact.

2.17 TRAFFIC AND CIRCULATION

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?				X

The proposed project involves the construction of lighting at the existing multi-sport filed on the CCA campus. The proposed project is not anticipated to increase attendance at the sporting event. Therefore, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?				X

A trip generation study was completed for the proposed project (Appendix D). The study concluded, based on the requirements of the City of San Diego Traffic Impact Study Manual (City of San Diego 1998), that a traffic impact study would not be required for the proposed project. It is not anticipated that the proposed project would increase the number of trips to the project site. Further, the project would not create an increase in vehicle miles traveled, as trips to the project site would not change as a result of the proposed project. Therefore, the project would be consistent with CEQA Guidelines Section 15064.3, subdivision (b). There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X

The proposed project does not involve changes to roadways or introduce incompatible uses to the area surrounding the project site. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Result in inadequate emergency access?				X

See response 2.9 (f). The proposed project would not impede emergency access to the project site. There would be no impact.

2.18 TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register for Historical resources, or in a local register of historical resource as defined in Public Resources Code section 5020.1 (k), or				X

The project site is at a recently constructed high school campus and does not contain any resources that are listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			X	

A records search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed in January 2019. In a letter dated January 2, 2019, the NAHC stated that results of the records search were negative. At the request of the NAHC, the District contacted the list of Native American tribes provided by the NAHC in their response letter for additional review and input. The Campo Band of Mission Indians provided a response to the District on January 18, 2019. In their letter, they requested that a qualified Kumeyaay monitor be present on-site for all future surveys and ground-disturbing activities. The Viejas Band of Kumeyaay Indians provided a response to the District on January 28, 2019. In their response, they noted that the project site may contain many sacred sites to the Kumeyaay people and requested that these sacred sites be avoided with adequate buffer zones. They also requested that applicable National Environmental Policy Act/CEQA/Native American Graves Protection and Repatriation Act laws be followed and that the Viejas Band of Kumeyaay Indians be contacted immediately upon any changes or inadvertent discoveries.

The proposed project site is previously developed, and the area disturbed by construction would be minimal. The District will comply with the requests from the Native American tribes listed above to ensure that potential impacts to tribal cultural resources would be less than significant.

2.19 UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				X

The proposed project simply involves the addition of four light posts at the existing multi-sport field on the CCA campus. Construction activities would be short term and use minimal water. During construction of the proposed project, fiber rolls or other drainage control devices would be placed around construction areas to protect drainage areas. Inlet/outlet protection would be placed over existing storm drains. Operational water use at CCA would not change due to the implantation of the proposed project. Further, the proposed project would not increase storm water runoff and therefore no new construction or relocation of storm water drainage facilities or expansion of existing facilities would be required. The

proposed project would not require the construction of new, or relocation of existing, water or wastewater treatment facilities. Additionally, construction and operation of the proposed project would not require the construction or relocation of electric power, natural gas, or telecommunications facilities. Operation of the proposed project would require minimal energy, as described under Section 2.6. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?				X

As stated in response 2.19 (a), construction activities will be short term and use minimal water. Operational water use at CCA would not change due to the implementation of the proposed project. The construction and operation of the proposed project does not require additional water supplies. Therefore, existing entitlements and resources are sufficient to meet water requirements at CCA and would not limit water supply for foreseeable future development. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X

As stated in responses 2.19 (a) and 2.19 (b), construction activities will be short term and use minimal water. Operational water use at CCA would not change due to the implementation of the proposed project; therefore, no change would occur in wastewater generation. There would be no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X

CCA is serviced by the Miramar Landfill, which is operated by the City of San Diego. Waste generated by the construction of the proposed project would be minimal. Waste from operational activities associated with the proposed project would be minimal as well and would only involve replacement of parts periodically over several years. The current landfill would be able to accommodate waste generated by the construction and operation of the proposed project and no impacts would occur.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

The proposed project would comply with all federal, state, and local statutes and regulations related to solid waste. There would be no impact.

2.20 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	

The proposed project is located within a local responsibility area classified as a very high fire hazard severity zone (CAL FIRE 2009). As stated in response 2.9 (f), the proposed project would not impair an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	

While the proposed project is located within a very high fire hazard severity zone, the surrounding area is urbanized. Installation of light fixtures at the multi-sport field would not exacerbate wildfire risk at the project site. Therefore, the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X

The proposed project would consist of installing four stadium lighting fixtures at the existing multi-sport field on the CCA campus. The proposed project would not require the installation or maintenance of roads, fuel breaks, emergency water sources, power lines, or other utilities that may exacerbate fire risk or impact the environment. There would be no impact.

2.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?			X	

As demonstrated in Sections 2.1 through 2.20 above, the proposed project does not have the potential to substantially degrade the quality of the environment. The proposed project would not reduce the habitat of a fish or wildlife population, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal as the proposed project is located on a previously developed site within an urbanized area. The CCA campus was constructed in the early 2000s and does not contain important examples of the major periods of California history or prehistory; therefore, the proposed project would not impact these resources. With the implementation of the project design features stated in Section 1.2, all impacts associated with the proposed project would be less than significant or cause no impact.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).			X	

As stated previously, the proposed project site lies within the CCA campus in a previously developed urban area. SR 56 lies immediately south and southeast of the proposed project site, while a small residential development is located to the west. To the north of the CCA campus is the Village at Pacific Highlands Ranch. This shopping center contains a variety of commercial uses and parking lots. The urbanized area has various recently constructed or proposed developments that have been considered in the cumulative analysis as listed below:

- The newly constructed Pacific Highlands Ranch Community Park and Recreation Center is located to the northeast of the CCA campus. The 13-acre community park includes a small and large dog park, traditional children's playground, skate park and bike pump track. The recreation center is situated on the southwestern edge of the community park and is a 17,000 square-foot building that has a central gymnasium, multipurpose room, and outdoor courtyard. The Pacific Highlands Ranch Community Park and Recreation Center are scheduled to open in the winter of 2019.

- A project has been proposed for the construction of an 18,000-square-foot City of San Diego public branch library on a 3-acre site in the Pacific Highlands Ranch community. The proposed project site is across the street from CCA on East Village Center Loop Road. The design of the Pacific Highlands Ranch Library includes children and teen areas, two to four study rooms, a computer area, a community meeting room with a catering kitchen, Friends of the Library room and patios off of the library. The project is estimated to open in 2021. According to the City of San Diego website, no start date for construction has been proposed at this time (Billing 2018).

- A project has been proposed for the installation of a Wireless Communication Facility by Verizon Blazing Star, which would be the construction of 12 panel antennas oriented in two sectors of four antennas/sectors. The project would be located at 13385 Highlands Place, which is across the street from the main entrance of CCA. The antennas would be architecturally integrated and concealed behind painted and textured screening to match the existing exterior of the building. Other associated equipment would be located behind the rooftop walls (Carmel Valley Community Planning Board 2018).

- A 630,000-square-foot property on Edgewood Bend Court directly southwest of the project site has been obtained by Lincoln Property Company. The project identified for the site is referred to as Apenture Del Mar, and would include large office buildings, a parking structure, restaurants, a coffee shop, an event lawn, walking paths, an amphitheater, and indoor and outdoor fitness. The developer is waiting to construct the project until tenants are identified; therefore, no anticipated construction date has been announced (Lincoln Property Company 2017).

- SRM Development has proposed a project to redevelop the existing Seabreeze Farms Equestrian Center into a fully licensed residential care facility for the elderly with adjacent independent senior cottages. The existing equestrian center is 33 acres and is roughly one-half mile from the CCA multi-sport field. This project was proposed as a consideration to the Carmel Valley Community Planning Board in September 2018, so no specific details on design or construction are known at this time (Carmel Valley Community Planning Board 2018).

- A neighborhood park and elementary school are included in Pacific Highlands Ranch Subarea Plan off of Solterra Vista Parkway to the east of the CCA campus, south of SR 56. The park would be roughly 5 acres, but no further details or designs are available at this time (Pacific Highlands Ranch 2019).

As stated previously, construction of the proposed project is estimated to last 6 to 8 weeks in the summer of 2019 and would involve minimal construction equipment and workers. All construction equipment and worker vehicles would be contained within the CCA campus and parking lot during the construction period, and would only use public roadways during transit. Installation of the four light poles would not require substantial ground disturbance or cause other typical construction-related impacts such as substantial noise, traffic, dust, or GHG emissions. Based on the information obtained about the nearby projects, it is unlikely that construction of the proposed Project would occur concurrently with any of the listed projects. Further, the construction BMPs outlined in the analysis above would be implemented during the construction of the proposed project to reduce potential impacts. Therefore, construction of the proposed project would not result in cumulatively considerable impacts.

Operation of the proposed project would result in the same traffic volumes as existing conditions, just at a later time in the day. Additionally, noise levels associated with the sporting events are anticipated to remain the same as existing conditions, but would also occur later in the day as a result of the proposed project. These shifts in timing would not contribute to a cumulatively considerable impact for these issue areas. Implementation of the proposed project would add a new light source to the project area. This has the potential to contribute cumulatively to the light and glare in this area. The proposed project is located in a previously developed area with existing light sources. The newly constructed Pacific Highlands Ranch Community Park and Recreation Center contains street and sidewalk lighting, as well as field lighting. However, as shown in Figures 10 through 12 in Appendix A, the technology and design implemented by the lighting manufacturer would contain light and glare from the lighting fixtures within the project site, essentially eliminating any light spill or trespass on off-site properties with an imperceptible contribution to the ambient night lighting of the area. The topography also helps to keep light and glare contained within the project site. Further, the limited hours of operation enforced by the District would reduce the potential of the proposed project to impact surrounding properties. Cumulative impacts are those that contribute to impacts occurring in the area surrounding the project site in combination with other cumulative projects. While other cumulative projects that involve night lighting may create conditions of light trespass or glare, the proposed project has been specifically designed to minimize light impacts outside of the desired area of illumination and contained within the immediate CCA campus. . As such, the proposed project would not significantly contribute to cumulative light and glare in the area surrounding the project site.

Operation of the proposed project would not cumulatively impact other issue areas discussed above, due to the limited size and scope of the project and as indicated by the findings of no impact or less than significant Impact throughout the MND analysis of various topic areas. Therefore, the proposed project would not have impacts that are cumulatively considerable.

	Potentially Significant Impact	Less than Significant Impact with Mitigation	Less than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

As demonstrated in Sections 2.1 through 2.20, the proposed project would not have environmental effects that would have a substantial adverse effect on human beings. All impacts would be less than significant or no impact would occur.

SECTION 3: DETERMINATION

As provided in the CEQA Guidelines Section 15070 (Title 14 - California Code of Regulations), a Negative Declaration may be prepared for a project subject to CEQA when an Initial Study (IS) has identified no substantial evidence that the project may have a significant effect on the environment. The District is the lead agency for preparation of this Negative Declaration. Based on the findings of the IS/Environmental Checklist Form prepared for this project (Section 3.0 of this document), the District has determined that preparation of a Negative Declaration is the appropriate method to present environmental review of the proposed project in compliance with CEQA.

Based on the environmental review provided in Sections 2.1 through 2.20, and the attached additional analysis, the District has concluded that the proposed project would not result in any significant environmental impacts.

3.1 RESULTS OF PUBLIC REVIEW (TO BE COMPLETED WITH FINAL NEGATIVE DECLARATION)

( ) No comments were received during the public input period.

( ) Comments were received during the public input period, but they did not address the Draft Mitigated Negative Declaration findings or the accuracy or completeness of the Initial Study. No response is necessary. The letters are attached.

( ) Comments addressing the findings of the Draft Mitigated Negative Declaration and/or accuracy or completeness of the Initial Study were received during the public input period.

3.2 ADOPTION STATEMENT

This Negative Declaration was adopted and the above CEQA findings made by the District on [insert date upon adoption].

_____ _____, 2019

John Addleman Date
Executive Director of Planning Services
San Dieguito Union High School District

SECTION 4: LIST OF PREPARERS

This Negative Declaration was prepared by AECOM, 401 West A Street, Suite 1200, San Diego, CA 92101. The following AECOM professionals contributed to its preparation:

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SECTION 5: REFERENCES

Billing, Karen

2018 "Pacific Highlands Ranch Library design a mix of modern hacienda styles." Del Mar Times. Available at https://www.delmartimes.net/news/sd-cm-nc-phrlibrary-design-20180326-story.html. Accessed January 30, 2019.

California Air Pollution Control Officers Association (CAPCOA).

2008 CEQA & Climate Change. Available at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf. Accessed February 2019.

California Air Resources Board (ARB)

2014 First Update to the Climate Change Scoping Plan: Building on the Framework. Pursuant to AB 32, the California Global Warming Solutions Act of 2006. Available at https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed January 2019.

2015 Ambient Air Quality Standards. Available at https://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed January 2019.

California Department of Conservation

1996 Update of Mineral Land Classification: Aggregate Materials in the Western San Diego County Production-consumption Region.

2010 Fault Activity Map of California. Available at http://maps.conservation.ca.gov/cgs/fam/. Accessed December 2018.

2014 Farmland and Mapping and Monitoring Program. "San Diego County Important Farmland 2014: Sheet 1 of 2." Available at http://www.conservation.ca.gov/dlrp/fmmp/Pages/SanDiego.aspx. Accessed December 27, 2018.

California Geological Survey

2015 CGS Information Warehouse: Regulatory Maps. Alquist-Priolo Fault Zone and Seismic Hazard Zone Maps. 2015. Available at http://maps.conservation.ca.gov/cgs/informationwarehouse/. Accessed December 27, 2018.

California Department of Forestry and Fire Protection (CAL FIRE)

2009 Very High Fire Hazard Severity Zones in LRA as Recommended by Cal Fire, San Diego County. Available at http://frap.fire.ca.gov/webdata/maps/san_diego/fhszl_map.37.pdf. Accessed January 30, 2019.

Carmel Valley Community Planning Board

2018 September 27, 2018 Meeting Agenda. Available at https://www.sandiego.gov/sites/default/files/181025agendacv.pdf. Accessed January 30, 2019.

City of San Diego
1974 San Diego Seismic Study. Geologic Hazards and Faults Maps. Available at https://www.sandiego.gov/development-services/zoning-maps/seismic-safety-study. Accessed December 2018

1997 Community and Economic Development Department. *Multiple Species Conservation Program Subarea Plan*. March.

1998 Pacific Highlands Ranch (Subarea III) Subarea Plan Master Environmental Impact Report.

1998 City of San Diego Traffic Impact Study Manual. July.

2008a *City of San Diego General Plan*, as amended.

2008b Seismic Safety Study, "Geologic Hazards and Faults Grid 38" Available at http://apps.sandiego.gov/directories/development-services/industry/hazards/pdf/geo38.pdf. Accessed December 27, 2018.

2014 Development Services Department, "Official Zoning Map Grid 35", San GIS June 19, 2014. Available at https://www.sandiego.gov/development-services/zoning/zoninggridmap. Accessed November 15, 2018.

2018 Official Zoning Map. City of San Diego Development Services Department. Available at https://www.sandiego.gov/development-services/zoning-maps. Accessed December 2018.

Converse Consultants
1993 Revised Preliminary Geologic and Geotechnical Report, North City Future Urbanizing Area – Subarea III Plan. August 11.

Department of Energy (DOE)
2019 LED Lighting. Available at https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting. Accessed February 2019.

Kennedy
1975 Geology of the San Diego metropolitan area, California. Available at https://archive.org/details/geologyofsandieg00kennrich/page/n21. Accessed December 2018.

Latitude 33
1999 Pacific Highlands Ranch Community Plan. City of San Diego.

Lincoln Property Company
2017 Aperture Del Mar Project Set to Start Soon. Available at http://lpcwest.com/news/aperture-del-mar-project-set-to-start-soon/. Accessed January 30, 2019.

Musco Sports Lighting, LLC (Musco)
2018 Canyon Crest Academy Illumination Summary. November 13.

Office of Environmental Health Hazard Assessment (OEHHA)
2015 Hot Spots Guidance Manual. Available at http://www.oehha.org/air/hot_spots/hotspots2015.html. Accessed February 2019.

Pacific Highlands Ranch
2019 Parks and Recreation. Available at http://www.phrliving.com/parks-recreation/. Accessed January 30, 2019.

RBRiggan & Associates
2003 *Final Mitigated Negative Declaration for the Proposed High School at Pacific Highland Ranch City of San Diego*. February 6.

San Diego County Air Pollution Control District (SDAPCD)
2016 2016 Revision of the Regional Air Quality Strategy for San Diego County. Available at https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2016%20RAQS.pdf. Accessed January 2019.

San Diego County Airport Land Use Commission
2011 *MCAS Miramar Airport Land Use Compatibility Plan, Airport Land Use Commission, San Diego County*. Adopted October 2008; amended December 2010 and November 2011.

San Diego Geographical Information System (SanGIS)
2018 Flood Insurance Rate Maps, Interactive Map SanGIS, Available at http://www.sangis.org/. Accessed on December 27, 2018.

South Coast Air Quality Management District (SCAQMD)
2008 Interim CEQA GHG Significance Threshold. Available at http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed February 2019.

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APPENDIX A

VISUAL IMPACT ASSESSMENT REPORT

VISUAL IMPACT ANALYSIS
CANYON CREST ACADEMY STADIUM LIGHTING PROJECT

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March 2019

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1.0 INTRODUCTION

The purpose of this Visual Impact Analysis (VIA) is to consider the potential visual quality impacts and lighting intrusions that may result from the Canyon Crest Academy Stadium Lighting Project (proposed project). The proposed project would install lighting at the multi-sport field on the school campus. The VIA will discuss the potential aesthetic impacts of the new lighting sources to result in changes to visual quality of the area or cause areas of high glare and/or disrupt the dark sky. The VIA will identify project features and mitigation requirements necessary to reduce visual and lighting impacts generated by the proposed project.

1.1 PROJECT BACKGROUND

Canyon Crest Academy (CCA) offers 21 varsity sports programs including tennis, basketball, volleyball, field hockey, soccer, lacrosse, baseball, and softball. Outdoor courts and fields for these sports are located at the south and southeast portions of the CCA campus. Currently, the tennis courts are lit, but the field used for field hockey, soccer, and lacrosse (referred to as the "multi-sport field"), as well as the baseball and softball fields, does not contain lighting fixtures. Because of this, current use of the multi-sport field must start early enough in the afternoon to complete an entire game or finish practice by sunset. This results in students leaving their last class early to prepare for their sporting event. In response to concerns raised by parents of the students involved in these athletic programs, the San Dieguito Union High School District (District) has decided to construct lighting at the multi-sport field. The installation of this lighting will allow games to start between 15 to 30 minutes after school is released.

1.1.1 Definition of Terms

The following section provides a brief overview of terms and concepts commonly used in the analysis of aesthetics and lighting.

Brightness: The magnitude of sensation that results from viewing surfaces from which light comes to the eye. This sensation is determined partly by the measurable luminance of the source and partly by the conditions of observation, such as the state of adaptation of the eye. For example, very bright lamps at night appear dim during the day because our eyes have adapted to the higher brightness of daylight.

Candela: Measure of light energy from a source at a specific standard angle and distance. A convenient measure to evaluate output of light from a lamp or light fixture in terms of both the intensity of light and the direction of travel of the light energy away from the source. The output of a 60-watt household incandescent lamp is approximately 150 candelas.

Foot-candle (fc): A foot-candle is the unit for measuring the light present on a surface or workplane. One fc is roughly equal to the uniform distribution of light from an ordinary wax candle on a 1-square-foot surface, located 1 foot away from the flame. Lux is the metric equivalent to a foot-candle (1 lumen spread over 1 square meter).

Glare: Visual discomfort experienced from high contrast. Describes visual evaluation of each visible source or surface relative to the surrounding background (sky, hills, foreground). There are two types of glare: (1) *Disability Glare*, which reduces the ability to see or identify objects, and (2) *Discomfort Glare*, which produces ocular discomfort and/or annoyance, but does not reduce the ability to see.

Illuminance: Measure of light energy (luminous flux) incident at a specific point on a surface over a standard area (foot-candles), or lumens per square foot). This term is commonly used to measure and describe light intensity on a surface. Generally, illuminance will decrease by approximately 75 percent when the distance from the light source is doubled.

Light Pollution: Any adverse effect of man-made light including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste.

Shielded: Outdoor light fixtures shielded or constructed so that light rays emitted by the fixture are projected below the horizontal plane passing through the lowest point on the fixture from which light is emitted.

Sky Glow: Destructive light in the night sky that results from light reflected upward.

Light Trespass: Light from subject property incident onto adjacent properties, measured in foot-candles, usually analyzed by measurement at or near the property line. Light trespass commonly occurs in urbanized areas when streetlights, floodlights, building signs, etc., illuminate private residential property so as to reduce privacy, disrupt rest, or disrupt nighttime views.

Line of Sight: An imaginary straight line from the eye to a perceived object.

Lumen: Mean value of total candelas produced by a light source. Lumen does not define direction.

Luminaire: A device to produce, control, and distribute light.

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2.0 EXISTING CONDITIONS

2.1 PROJECT LOCATION

CCA occupies roughly 51 acres in the Carmel Valley residential suburb of San Diego (Figure 1). CCA is located directly north of State Route 56 (SR-56), roughly 3.2 miles east of Interstate 5, and roughly 5.2 miles west of Interstate 15. The school site is located east of Carmel Valley Road and directly south of Village Center Loop Road. Three entrances to the school site are available, one off of Edgewood Bend Court and two off of Village Center Loop Road (Figure 2).

2.2 DESCRIPTION OF SITE

The CCA campus consists of various indoor classroom, athletic, and administration facilities, as well as outdoor athletic facilities, including tennis and basketball courts, open fields, a softball field, a baseball field, and the multi-sport field, which is surrounded by a track. The proposed project includes lighting at the multi-sport field. The multi-sport field is located generally within the southwestern interior of the CCA campus.

North of the multi-sport field are the main CCA campus buildings in a layout including structures and outdoor walkways and gathering locations. Parking lots, some covered with solar panels, are located north beyond the campus buildings. Security and safety lighting is provided throughout the CCA campus along walkways and around structures. The parking lots have tall lighting poles as well as lighting under the solar panels.

Immediately northeast of the multi-sport field are the school tennis courts and basketball courts. The only athletic facilities with lighting are the tennis courts. An internal campus roadway passes just to the north of the tennis courts and multi-sport field and also includes roadway lighting.

Additional grass fields for softball, baseball, and other sports are located to the east and south of the multi-sport field along with internal access roads. These sports facilities are not lit.

West of the multi-sport field, a set of bleachers is installed on the hill leading up to the parking lot along the west side of the multi-sport field for spectators. Benches for the players are set up on the east and west edges of the field, inside of the track. Parking for students, staff, and visitors is provided along the west and northwest edges of the site. The proposed project site is generally

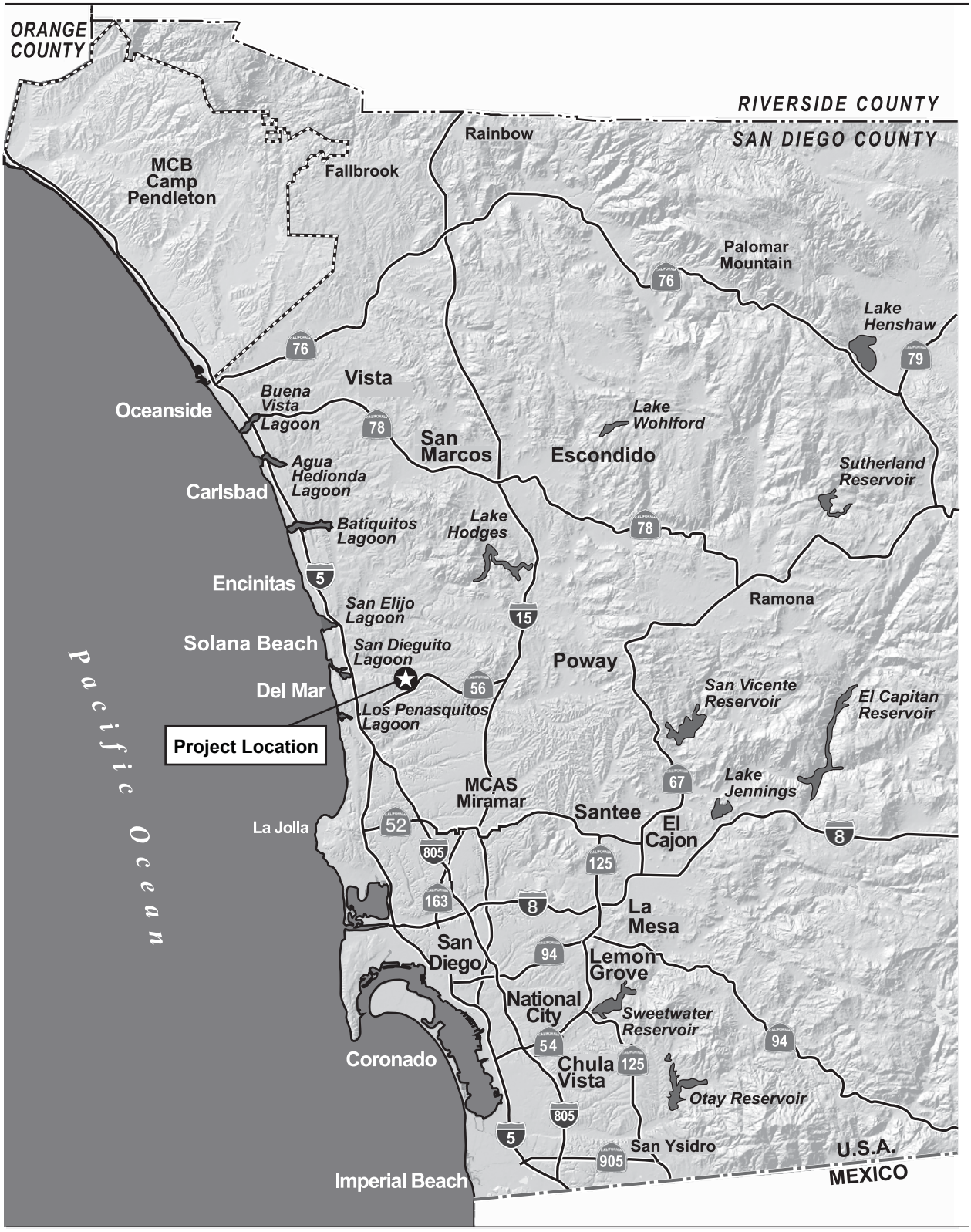
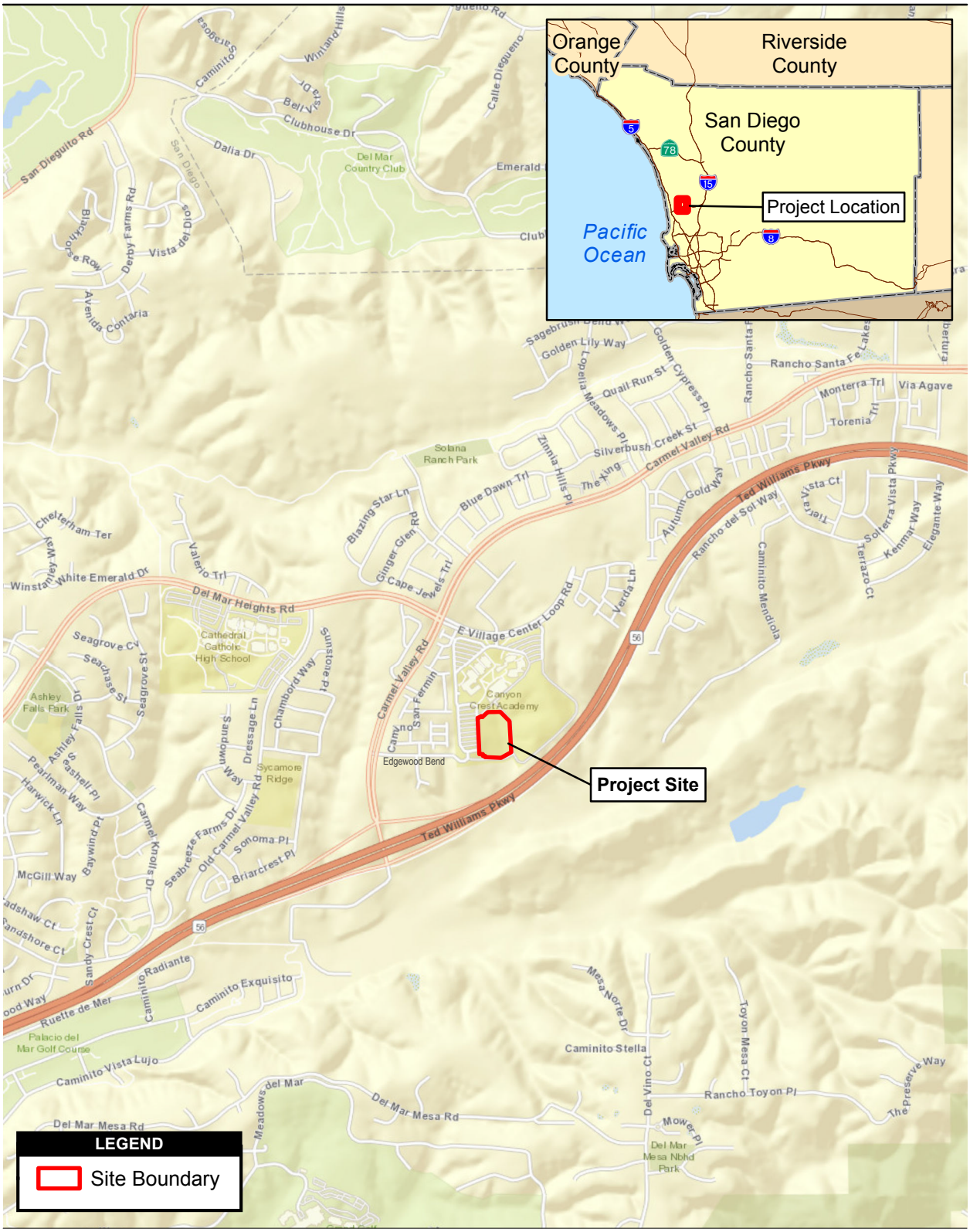


Figure 1
Regional Map



Source: SanGIS 2017; Esri 2018

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 2
Vicinity Map

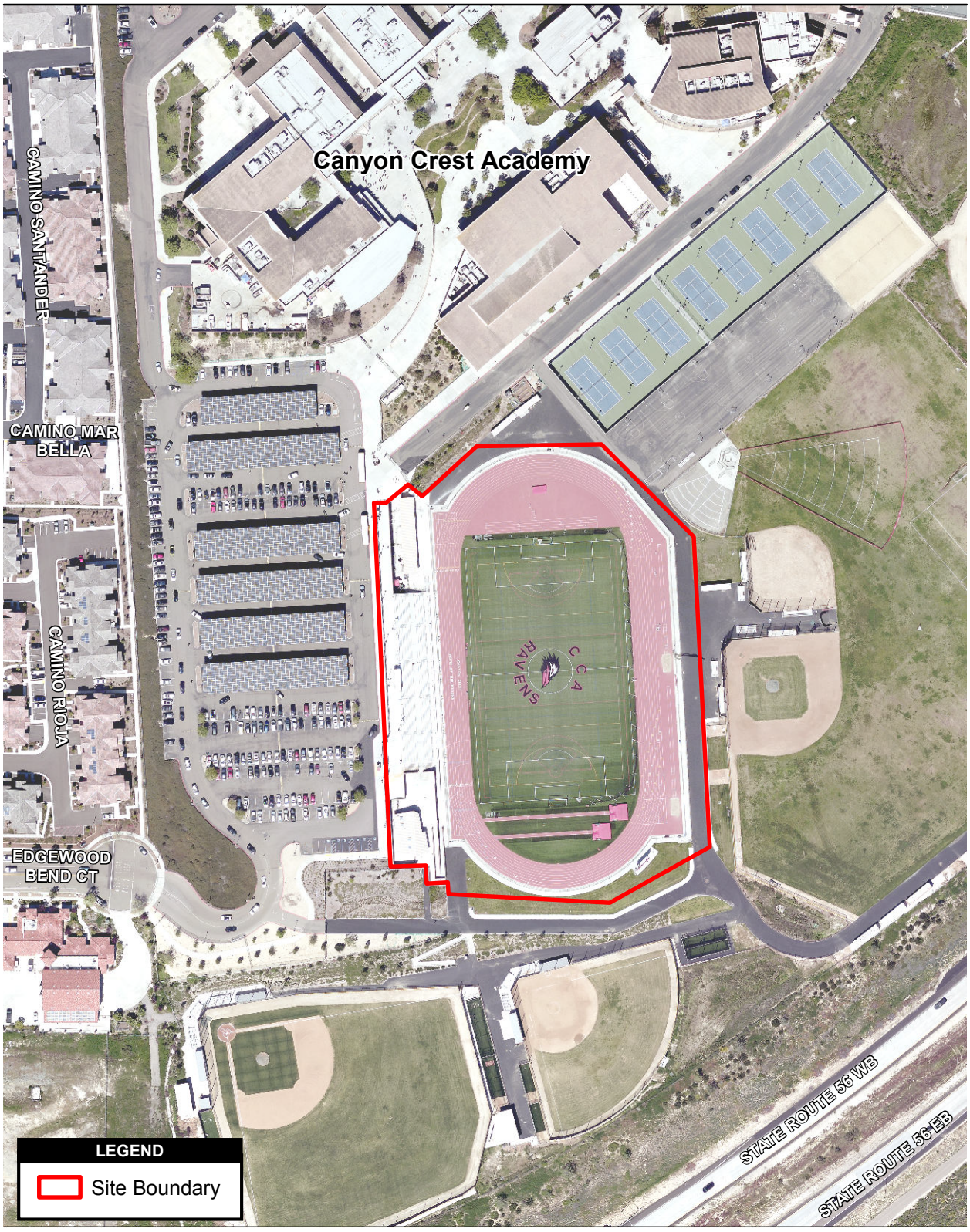
flat with a downhill slope toward the athletic fields. Elevation on the site ranges from approximately 230 feet above mean sea level (AMSL) to 255 AMSL. The adjacent parking lots are elevated above the multi-sport field. The parking lots along the western edge and in the northwestern corner are mostly covered with solar panels with lighting beneath them (Figure 3) as well as tall pole lighting.

2.3 DESCRIPTION OF SURROUNDING AREA

The area in the vicinity of the proposed project site is largely developed, consisting mostly of residential and commercial uses. Immediately north of the CCA campus is Village Center Loop Road, a four-lane road with divided medians, parallel parking lanes, and street lighting. On the north side of the roadway is a large commercial development with buildings, parking lots, and some two-story residential condominiums and townhomes. The commercial structures, signage, landscaping, and parking lots are lighted in a manner typical of commercial developments. The aesthetic of the commercial development is standard for this type of land use with no unique or visually dominant features.

Northeast of the CCA campus is a newly developed City of San Diego park. The new Pacific Highlands Ranch Community Park has a wide variety of recreational facilities including a recreation center, dog parks, skate plaza, outdoor play areas, picnic areas, and outdoor multi-use fields with nighttime lighting. The field lighting includes multiple tall light poles with pole-top luminaire assemblies. Lighting is also included in the community park parking lots and along walkways, as well as typical building and landscape lighting. Beyond the park to the northeast are single-family and townhome residential land uses. Lighting in this area is typical of residential areas with street lights, landscape lighting, and general home security lighting. Also northeast of the proposed project site and adjacent to the community park is Pacific Trails Middle School. The middle school campus includes buildings, parking lots, and open courtyards. The school buildings, signage, landscaping, and parking lots are lighted for safety and security.

SR-56 curves around the CCA campus from the northeast and along the entire southern border at a slightly lower elevation than the multi-sport field. In the proposed project vicinity, SR-56 is a four-lane highway with a divided median. Standard roadway lighting is provided along the highway and off-ramps. The paved SR-56 Bike Path parallels the southern side of SR-56 with undeveloped open space continuing to the south. Lighting is not provided along the portion of the SR-56 Bike Trail in the vicinity of the proposed project.



Source: SANDAG 2017

200 100 0 200 Feet

Scale: 1:2,400; 1 inch = 200 feet

Figure 3
Project Site Aerial Photograph

Path: P:_6059\60590688_CCA_Lighting\900-CAD-GIS\920 GIS\map_docs\mxd\Negative_Declaration\Fig3_Aerial.mxd, 1/21/19 bradyd

The City of San Diego Fire Station 47 is located southwest of the CAA parking lots and includes standard parking, landscaping, and security lighting. The entire western boundary of the CCA campus is developed with multi-family residential developments with mostly two-story homes. Yard space of the homes face toward CCA and a public sidewalk is located along the edge of the residential properties, between the homes and CCA campus. The residential development is at a lower grade than the CCA campus, located below the CCA parking lot that is adjacent to the residential development. The parking lot, which is elevated above both the residential development to the west and the multi-sport field to the east, obscures views from the residential area toward the sports field. Lighting associated with the residential development is typical of residential areas with street lighting, landscaping lighting, and home security lighting. Farther west, a large vegetated slope leads up to single-family residential developments and two school facilities approximately 0.5 mile from CCA: Sycamore Ridge School and Cathedral Catholic High School. Cathedral Catholic High School has outdoor sports facilities that include nighttime lighting.

3.0 PROJECT DESCRIPTION

3.1 PROPOSED PROJECT

The proposed project includes the construction of four stadium lighting poles around the multi-sport field at CCA. The lighting design has been professionally prepared by Lionakis in and their subconsultant Johnson Consulting Engineers, Inc. The poles would be placed outside of the track at the four corners of the field. The placement of the poles and the luminaire assemblies on the pole tops have been designed to illuminate four specific areas: multi-sport field, track, long jump area, and bleacher egress/walkways. A summary of the proposed lighting system is provided in Table 3-1 and the light-emitting diode (LED) fixture type summary is included in Table 3-2.

The maximum height of the pole and light fixture at the southwest corner of the field would be 80 feet above the ground, while the other three poles and light fixtures would reach 90 feet above ground level. The light fixtures would be equipped with LED lights. All project features would be placed along the perimeter of the existing footprint of the multi-sport field. Figure 4 shows the lighting equipment layout plan.

On the southwest pole (identified as Pole S1 in Figure 4), two lighting fixtures would be placed at 10 feet above ground level for uplighting purposes to ensure no gaps occur in the lighting on the field. Two fixtures at 50 feet and two at 55 feet above ground level would be placed on the southwest pole for egress illumination, to ensure a safe exit from the bleachers. This lighting would not extend into the parking lot, as lighting already exists underneath the solar panels installed in the parking lots. There would be 15 light fixtures placed at 80 feet above ground level on the southwest pole directed at the field and track to light the field.

On the northwest pole (identified as Pole S2 in Figure 4), two uplighting fixtures would be placed at 15 feet above ground level. Two egress lighting fixtures would be placed at 60 feet and two at 65 feet above ground level. Fifteen light fixtures would be placed at 90 feet above ground level for field lighting.

For the two poles on the east side of the field (identified as Poles S3 and S4 in Figure 4), two uplighting fixtures would be placed at 15 feet above ground level, two egress lighting fixtures would be placed at 60 feet above ground level, and 14 lighting fixtures would be placed at 90 feet above ground level.

Table 3-1
Lighting System Summary

Pole ID	Pole Height (feet)	Fixture Height (feet)	Fixture Quantity	Luminaire Type	Load (kilowatts)	Circuit
S1	80	10	2	TLC-BT-575	1.15	A
S1	80	80	15	TLC-LED-1150	17.25	A
S1	80	55	2	TLC-LED-400	0.80	B
S1	80	50	2	TLC-LED-400	0.80	B
S2	90	15	2	TLC-BT-575	1.15	A
S2	90	90	15	TLC-LED-1150	17.25	A
S2	90	65	2	TLC-LED-400	0.80	B
S2	90	60	2	TLC-LED-400	0.80	B
S3	90	15	2	TLC-BT-575	1.15	A
S3	90	90	14	TLC-LED-1150	16.10	A
S3	90	60	2	TLC-LED-1150	2.30	C
S4	90	15	2	TLC-BT-575	1.15	A
S4	90	90	14	TLC-LED-1150	16.10	A
S4	90	60	2	TLC-LED-1150	2.30	C
Total			**78**		**79.10**	

Source: Musco 2018b

Table 3-2
Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-400	LED 5700K-75 CRI	400W	46,500	>81,000	>81,000	>81,000	8
TLC-LED-1150	LED 5700K-75 CRI	1500W	121,000	>81,000	>81,000	>81,000	62

Source: Musco 2018b

The sports lighting system that would be installed for the proposed project would incorporate their Total Light Control System for LED lighting. LED light provides a high intensity light with the potential for sharp cutoff to minimize light pollution when correctly designed and aimed. The system is designed to control and direct light precisely toward the desired location, minimizing any light spill or other lighting impacts on surrounding areas (Musco 2018a).

Construction of the proposed project would take an anticipated 6 to 8 weeks and would occur during the summer when school is not in session.

NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Daniel Lohman • File #145915I • 13-Nov-18

Canyon Crest Academy

San Diego, CA

EQUIPMENT LAYOUT

INCLUDES:
- Egress/Walkways
- Long Jump Area
- Soccer
- Track

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	S1	80'	8'	63'	TLC-LED-400	2
				58'	TLC-LED-400	2
				18'	TLC-BT-575	2
				88'	TLC-LED-1150	15
1	S2	90'	-	65'	TLC-LED-400	2
				60'	TLC-LED-400	2
				15'	TLC-BT-575	2
				90'	TLC-LED-1150	15
2	S3-S4	90'	-	60'	TLC-LED-1150	2
				15'	TLC-BT-575	2
				90'	TLC-LED-1150	14
4	TOTALS					78

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-LED-1150	6.8	6.5	5.9	5.1	4.1	3.7	3.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5

We Make It Happen.

Source: MUSCO Lighting 2018

Figure 4
Equipment Layout

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Project Design Features

The District has incorporated various project design features as conditions of the proposed project that will avoid or reduce potential lighting impacts.

The District, or the District through its contractor, would:

- Design light fixtures to reduce light and glare impacts. Angle light fixtures and include shielding so that minimal light spillover beyond the track and field to adjacent portions of the school and surrounding properties would occur.
- Use LED lights in all light fixtures.
- Enforce "Lights Off" at the multi-sport field by 9:30 p.m.; however, in many cases, the lights will be turned off prior to 9:30 p.m., as shown in the anticipated light schedule below.

3.2 ANTICIPATED LIGHT SCHEDULE

The use of night lighting would be fairly consistent at the multi-sport field and would be dependent upon the sport practices and games taking place. Lights would generally be turned on at sunset and thus the time would vary slightly throughout the year. The following provides a schedule of the typical field use and when lighting would be used to facilitate activities. Generally, lights would not be used during summer months when school is not in session; however, summer events may occur that would be require lighting and the 9:30 p.m. lights off policy included in the project design features would still apply.

Typical Week

Monday, Tuesday, Thursday:
Freshman practice on grass fields at 3:30 p.m.
Junior Varsity (JV) practice on multi-sport field at 3:30 p.m.
Varsity practice on multi-sport field at 5:00 p.m. (lights off by 7:30 p.m.)

Wednesday, Friday:
Freshman game on grass fields at 4:30 p.m.
JV game on multi-sport field at 4:30 p.m.
Varsity game to follow JV game at 6:00 p.m. (lights off by 8:30 p.m.)

Saturday: Lights off (other than potential playoff or tournament scenarios)
Sunday: Lights off

Typical Week with Season Transition and Playoffs

Playoffs are anticipated for 2 to -3 weekends per sport at varying times throughout the year.

Monday, Tuesday, Thursday:

Freshman practice on grass fields at 3:30 p.m.
JV practice on multi-sport field at 3:30 p.m.
Varsity practice on multi-sport field at 5:00 p.m. (lights off by 7:30 p.m.)
Note: If Boys or Girls Varsity Soccer in playoffs then 7:00 p.m. game time (lights off by 9:30 p.m.)

Wednesday, Friday:

Freshman game on grass fields at 4:30 p.m.
JV game on multi-sport field at 4:30 p.m.
Varsity game to follow JV game at 6:00 p.m. (lights off by 8:30 p.m.)
(Note: If Boys or Girls Varsity Soccer in playoffs then 7:00 p.m. game time (lights off 9:30 p.m.)

Saturday: Lights off (other than potential playoff or tournament scenarios)
Sunday: Lights off

4.0 CONSIDERATIONS FOR SIGNIFICANCE DETERMINATION

4.1 CEQA THRESHOLDS OF SIGNIFICANCE

The following CEQA guidelines are the basis for the determination of significance for visual impacts that may result from the proposed project. The thresholds are from Appendix G of the 2019 California Environmental Quality Act (CEQA) Guidelines and address both the potential for impact to visual quality and character as well as from light and glare. The CEQA Guidelines consider if the proposed project would:

a) Have a substantial adverse effect on a scenic vista?

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

4.2 LIGHTING EVALUATION CRITERIA

Numerous professional institutes and organizations, such as the Institution of Lighting Professionals (ILP), Illuminating Engineering Society of North America (IESNA), and the Electric Power Research Institute (EPRI), study, research, and provide guidance for generally acceptable light levels. Lighting that is poorly designed, poorly directed, or improperly used is responsible for sky glow, creates glare, and generates light trespass. Streets, parking lots, parks, public buildings, businesses, industries, and private residences are often lit throughout the night and have the potential to create various forms of light pollution. This impact analysis generally focuses on two potential areas of impact from nighttime lighting:

- Compatibility with applicable local plans, policies, and regulations related to night lighting; and
- Obtrusive lighting impacts such as light trespass, glare, or pollution.

Light trespass is considered subjective as light at a certain illuminance level may be acceptable to some while objectionable to others. Light trespass also varies by the surrounding aesthetic and setting. For example, rural areas with minimal sources of artificial light and the expectation of dark skies are generally more susceptible to adverse impacts resulting from the installation of new light sources. Urbanized areas with many light sources and active nighttime hours are less susceptible to adverse effects from the introduction of new light sources. For this reason, it is appropriate that different lighting standards be applied to different types of locations and existing lighting conditions. Land uses are typically categorized into four different Environmental Zones for lighting criteria purposes. Each environmental zone is based upon the extent to which control of light trespass is considered necessary or desirable. Environmental zones E1, E2, E3, and E4 are described below:

E1: Intrinsically dark areas (National Parks, areas of outstanding natural beauty)
E2: Low district brightness areas (rural or small urban village locations)
E3: Medium district brightness areas (small town centres or urban residential locations)
E4: High district brightness areas (town/city centres with high levels of nighttime activity)

The proposed project site would be considered in an E3 environmental zone. Table 4-1 provides lighting trespass level guidance derived from multiple sources as an evaluation point for light generated by the proposed project. As described in the Chapter 3, all proposed lighting would be turned off by 9:30 p.m.; thus, the most applicable guidelines are pre-curfew.

Table 4-1
Light Trespass Limitation Guidance

Environmental Zone	Light Trespass			
	Pre-Curfew (before 11 p.m.)		Post-Curfew (11 p.m. to 7a.m.)	
ILP Guidance				
E1	2 lux	0.2 fc	0 lux	0.0 fc
E2	5 lux	0.5 fc	1 lux	0.1 fc
E3	**10 lux**	**0.9 fc**	2 lux	0.2 fc
E4	25 lux	2.3 fc	5 lux	0.5 fc
EPRI Guidance				
E1	1 lux	0.1 fc	0 lux	0.0 fc
E2	3 lux	0.3 fc	1 lux	0.1 fc
E3	**8 lux**	**0.8 fc**	3 lux	0.3 fc
E4	15 lux	1.5 fc	6 lux	0.6 fc

fc = foot-candles; lux = metric equivalent to a foot-candle (1 lumen spread over 1 square meter)
Source: Institution of Lighting Professionals (ILP) 2011; Electric Power Research Institute (EPRI) 2000
Bold = most applicable thresholds for the proposed project

4.3 REGULATORY SETTING

The City of San Diego Municipal Code has general regulations related to the installation and use of outdoor lighting (Chapter 14, Article 2, Division 7, Section 142.0740; City of San Diego 2000). The general purpose and intent of the regulations are to:

1. Minimize negative impacts from light pollution including light trespass, glare, and urban sky glow in order to preserve enjoyment of the night sky and minimize conflict caused by unnecessary illumination.
2. Promote lighting design that provides for public safety and conserves electrical energy.
3. Outline compliance regulations for outdoor lighting fixtures.

The City of San Diego considers Palomar Observatory and Mount Laguna Observatory important dark night sky resources. Palomar Observatory is located at the top of Palomar Mountain (5,500 feet in elevation) in northern San Diego County approximately 30 miles from CCA, and Mount Laguna Observatory is located at an altitude of 6,100 feet on the eastern edge of the Cleveland National Forest approximately 45 miles from CCA. The City Municipal Code states:

> Within 30 miles of the Palomar and Mount Laguna observatories, outdoor lighting after 11:00 pm shall be limited to a maximum of 4,050 lumens per fixture or a maximum of 2500 Kelvin CCT.

The City regulations pertaining to maintaining darks skies for the observatories are generally not applicable to the proposed project as the site is located 30 miles or more from either observatory, and lighting is scheduled to be turned off by 9:30 p.m.

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5.0 VISUAL QUALITY ANALYSIS

5.1 METHODOLOGY

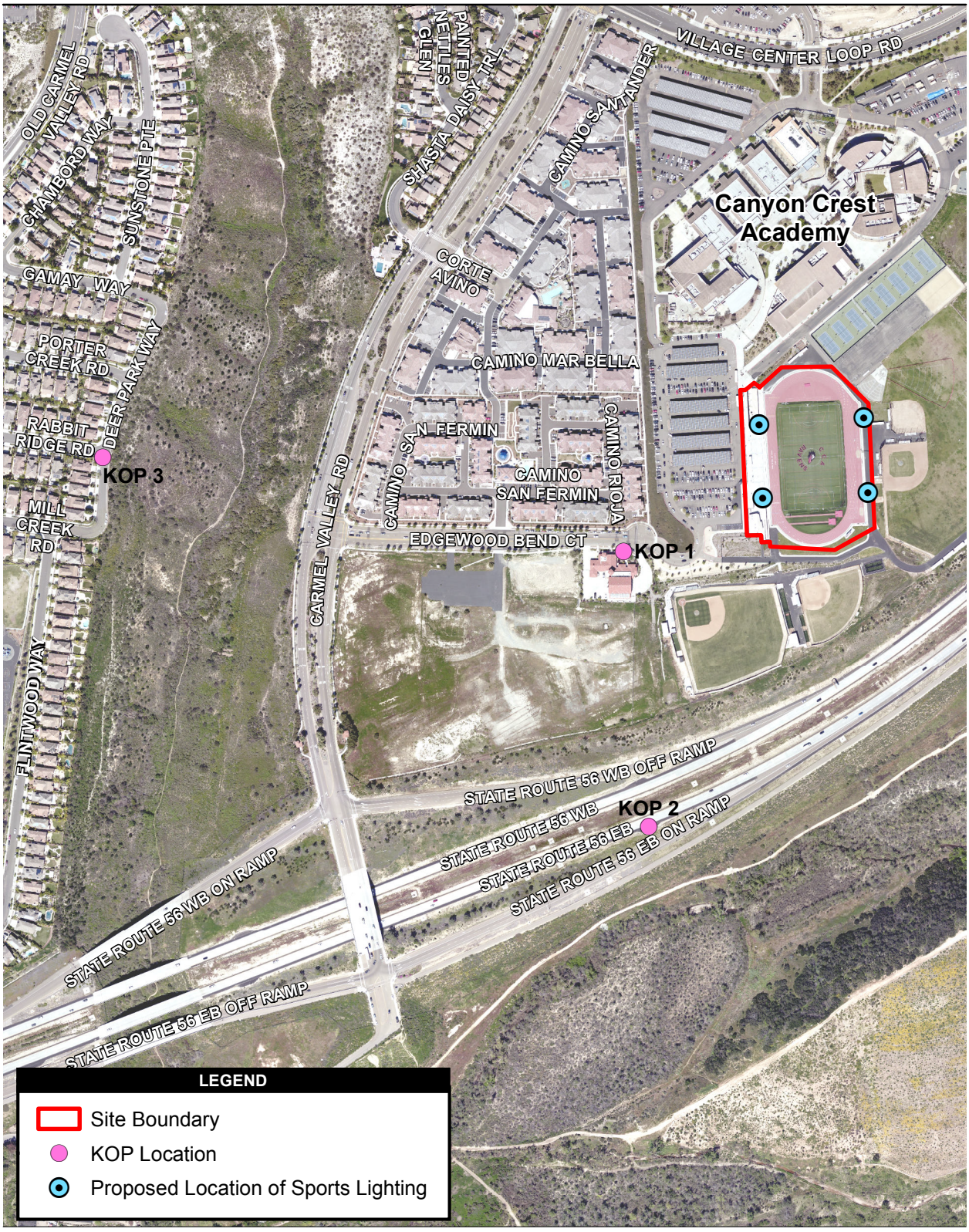
The visual impacts of the proposed project are determined by assessing the visual resource change due to the proposed project and predicting viewer response to that change. Visual resource change is the sum of the changes in visual character and the changes in visual quality. Visual resource change can be considered by assessing the compatibility of the proposed project with the visual character of the existing landscape and then comparing the visual quality of the existing visual resources with projected visual quality after proposed project implementation. The analysis considers impacts based on the three CEQA Guidelines thresholds related to visual quality and character (thresholds a-c).

5.2 PHOTO SIMULATIONS

Photorealistic visual simulations were prepared to determine and assess the magnitude of visual impacts. The photorealistic simulations of the proposed project features were developed through the use of a three-dimensional computer model of the proposed project elements. This digital model was then superimposed on select existing site photographs by matching the viewpoint of the terrain model and the photograph, using global positioning system to ensure accuracy.

5.3 KEY OBSERVATION POINT ANALYSIS

Three key views were selected for consideration to depict representative views of the proposed project features as seen from within the proposed project viewshed from the perspective of different viewer groups. The Key Observation Points (KOPs) were established to evaluate baseline conditions and potential impacts to visual resources. These KOPs are not meant to be fully comprehensive or all-inclusive of every potential view of the proposed project site and proposed lighting structures, rather they are most typical and demonstrative of substantial visual changes to the local visual environment as may be viewed from residential locations, roadways, and pedestrian facilities. Figure 5 shows the locations of the KOPs and their vantage point in relation to the proposed project site. For the analysis of each KOP, a figure has been prepared with the existing condition photograph from the KOP as well as a photo simulation of that same photograph showing the future visual environment with implementation of the proposed project.



Source: SANDAG 2017

500 250 0 500 Feet

Scale: 1:6,000; 1 inch = 500 feet

Figure 5
KOP Locations

Path: P:_6059\60590688_CCA_Lighting\900-CAD-GIS\920 GIS\map_docs\mxd\Fig5 KOP.mxd, 1/21/2019, augellop

5.3.1 KOP 1

KOP 1 (Figure 6) is located near the eastern cul-de-sac terminus of Edgewood Bend Court along the pedestrian walkway that parallels the western boundary of CCA. The walkway passes between the CCA parking lots and the residential development.

Orientation

KOP 1 depicts the view from the pedestrian walkway looking east toward the CCA campus and multi-sport field. The view is looking east and up the embankment to the CAA parking lots and toward the multi-sport field. The view from this location would generally be a short-term view as people park their cars along the street and access the walkway to the residential development.

Existing Visual Character

As shown in KOP 1, the CCA parking lot that intervenes between the viewpoint and the multi-sport field is elevated above the street and walkway. The elevation change is accommodated by a steep embankment that provides a large swath of green vegetation in the foreground that blocks distant eye-level views. While the vegetation provides a natural element in the view, the visual setting is highly urban with the solar panel parking lot cover structures being very prominent along with the property boundary chain link fence. Also conspicuous in the view are existing light poles associated with street lighting and with parking lot lighting. The dark-colored light poles protrude and contrast against the light sky. While highly visible, the poles are thin and do not have the mass or shape to block or obstruct views.

Visual Character with Proposed Project

The following provides an analysis of potential impacts to visual character and resources from KOP 1 with the implementation of the proposed project. The photo simulation depicting future daytime aesthetic conditions with implementation of the proposed project KOP 1 is shown in Figure 6.

a) Would the proposed project have a substantial adverse effect on a scenic vista?

There are no designated scenic vistas within the immediate viewshed of KOP 1. As described under existing conditions, there are no remarkable or unique visual features in the view from KOP 1.

As shown in the Figure 6 simulation, three of the four proposed lighting fixtures would be visible from the KOP 1 location. The viewer would see the vertical poles rising into the skyline and the horizontal pole-top luminaire assembly. The proposed lighting poles are visually more substantial than the existing lighting due to the luminaire assembly across the top; however, the three new lighting poles in the view do not create an unexpected or out-of-context appearance. Because poles already intrude into the sky view, the addition of three new poles does not substantially alter the view or create a stark visual change.

b) Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

As described under existing conditions, there are no remarkable or unique scenic resources, such as visually important trees, rock outcroppings, or historic buildings, in the view from KOP 1. The visibility of three new lighting poles, as shown in Figure 6, within the existing urban view that already includes tall vertical elements including light poles would not substantially damage or modify scenic resources of the area.

c) Would the proposed project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The introduction of four tall light fixtures, three of which would be visible from KOP 1, would not create a substantial contrast with the surrounding urban environment. While the new lighting poles and pole-top luminaire assemblies are larger and visually more substantial, there are already existing tall pole structures associated with street and parking lot lighting. Even with the horizontal luminaire assemblies at the top of the lighting poles, the proposed poles would be thin and would not dominate the view or create a mass that obscures the view. The presence of additional light fixtures protruding into the sky view would not be out of character for the developed and urban setting as viewed from KOP 1 and would not degrade the quality of public views from KOP 1. These types of visual elements are commonly associated with an urban setting and would not be unexpected or in contrast with the developed area. Further, implementation of the proposed project would not conflict with the regulations presented in Section 4.3. Thus, the visual character and quality of the site and surroundings from KOP 1 would not be substantially degraded by the proposed project.

5.3.2 KOP 2

KOP 2 (Figure 7) is located along the eastbound lanes of SR-56 to the south of the multi-sport field.

KOP 1 - Before Project

KOP 1 - After Project

Assumptions for KOP

• Views to the East toward school grounds from sidewalk.

• Foreground view - existing chainlink fence and screening plant material and school parking lot.

• Background view - portion of sports field with proposed lighting fixtures.

Figure 6
KOP 1 – Sidewalk at end of Edgewood Bend Court Cul-de-sac

KOP 2 - Before Project

KOP 2 - After Project

Assumptions for KOP

• Views to the North toward school grounds from State Route 56.

• Foreground view - four lane freeway and vegetated embankment.

• Background view - portion of sports field with proposed lighting fixtures.

Figure 7
KOP 2 – Vehicular Pull out zone on Eastbound State Route 56

Orientation

KOP 2 depicts the view of a vehicle occupants traveling along SR-56 as they pass to the south of the CCA campus and the multi-sport field where the proposed lighting fixtures would be installed. This view is representative of what motorists would see when looking north toward the CCA campus. The view from motorists traveling along SR-56 would be short and dynamic as vehicles pass by the immediate area and view the proposed project site in their periphery quickly at a posted speed of 65 miles per hour.

Existing Visual Character

As shown in the KOP 2 photograph (Figure 7), SR-56 is at a lower elevation than the multi-sport field. From the eastbound lanes on the south side of the highway, the view includes an open median, westbound lanes of traffic, roadway light poles, and a sparsely vegetated hillside leading up to the sports fields. At the top of the hillside, the fencing that surrounds the softball and baseball fields adjacent to the roadway is visible in the middleground view. The poles of the fencing create tall and prominent vertical features within this viewshed. Periodic landscaping trees also rise up into the skyline view. The top of CCA buildings can be seen above the top of the hillside in the distance. The KOP 2 view has a generally urban feel due to the active highway and fencing structures. There are muted earthy hues from the median and hillside vegetation. No forms, lines, or mass appears visually out of character or dominant in the viewshed. No memorable or visually remarkable features are included in this view.

Visual Character with Proposed Project

The following provides an analysis of potential impacts to visual character and resources from KOP 2 with the implementation of the proposed project. The photo simulation depicting future daytime aesthetic conditions with the implementation of the proposed project KOP 2 is shown in Figure 7.

a) Would the proposed project have a substantial adverse effect on a scenic vista?

No designated scenic vistas are within the immediate viewshed of KOP 2. As described under existing conditions, there are no remarkable or unique visual features in the view from KOP 2.

As shown in Figure 7, the addition of the lighting fixtures at the multi-sport field as proposed would be visible, but would not be dominant or out of character with the visual environment of

KOP 2. From the KOP 2 location, three of the four poles would be visible with the fourth pole obscured by existing vegetation. The proposed lighting fixtures would appear only slightly taller than the existing ballfield fence poles from this KOP. The vertical poles themselves would look very similar to the existing fencing poles. The horizontal pole-top luminaire assembly would appear fairly small and would not create a large or obtrusive element in the sky view. Because of the existing tall vertical poles associated with the fencing in the view, the lighting structures would be unobtrusive and almost unnoticeable as part of the middleground view from KOP 2. Thus, the proposed project would not create a substantial visual contrast or out of place element within the urban aesthetic that would result in an adverse visual effect.

b) Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

As described under existing conditions, there are no remarkable or unique scenic resources, such as visually important trees, rock outcroppings, or historic buildings, in the view from KOP 2. SR-56 is not a designated State Scenic Highway (Caltrans 2018). As shown in Figure 7, the placement of tall lighting fixtures within the existing urban view that already includes tall vertical elements of the ballfield fencing would not substantially damage or modify the visual character of the area.

c) Would the proposed project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The introduction of four tall light fixtures, three of which would be largely visible in the KOP 2 viewshed, would not create a substantial contrast with the surrounding urban environment. The proposed light fixtures would appear similar to the existing tall pole structures associated with the ballfield fencing and would not dominate or create a mass that obscures the view. The presence of the proposed light fixtures would not be out of character for the developed and urban setting viewed from KOP 2 and would not degrade the quality of public views from KOP 2. Existing vertical elements that protrude into the sky view from this KOP visually intermingle with the proposed lighting fixtures and cause them to blend into the existing view, as shown in Figure 7. Further, implementation of the proposed project would not conflict with the regulations presented in Section 4.3. Thus, the visual character and quality of the site and surroundings from KOP 2 would not be substantially degraded by the proposed project.

5.3.3 KOP 3

KOP 3 (Figure 8) is located along the pedestrian walkway near the intersection of Deer Park Way and Rabbit Ridge Road.

KOP 3 - Before Project

KOP 3- After Project

Assumptions for KOP

• Views East toward school grounds along Deer Park Way and Rabbit Ridge Road.

• Foreground view - fencing and vegetated embankment.

• Background existing residential development obscuring view to sports field.

Figure 8
KOP 3 – Sidewalk at Intersection of Deer Park Way and Rabbit Ridge Road

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Orientation

KOP 3 generally depicts the view of pedestrians, motorists, and residential developments in the vicinity of Deer Park Way. This view is representative of what viewers would see when looking east toward the CCA campus in the distance. Residents in this area have stationary long-term views from yard space, while pedestrians and motorists pass by this viewshed with short and changing views.

Existing Visual Character

As shown in the KOP 3 photograph (Figure 8), this vantage point is at a higher elevation than the CCA campus and the intervening land and development. The KOP is located at the top of a vegetated slope. This view includes Deer Park Way, street lighting fixtures and signage, and associated retaining wall and fencing in the immediate foreground. Landscaping, including trees and shrubs, can be seen immediately beyond the fencing. Large deciduous trees are prominent in the view. In the middleground, the residential development located between the KOP and the CCA campus is visible along with other developments to the north; however, all of the eye-level views east are through the existing iron fence. The front row of homes, rooftops, and streets can be seen. The CAA campus, including the multi-sport field, is obscured from view from this KOP due to the intervening residential development. The expansive distant views include rolling foothills and lands at varied elevations. While not clearly distinguishable, development on some portions of the distant hillsides is noticeable. The KOP 3 view has a generally urban feel due to the roadway, fencing, and views of development. Intermingled with the development are muted earthy hues from the hillside vegetation and distant hills. No forms, lines, or mass appears visually out of character or dominant in the viewshed. Even with the expansive distant views, no highly memorable or visually remarkable features are included in this view.

Visual Character with Proposed Project

The following provides an analysis of potential impacts to visual character and resources from KOP 3 with the implementation of the proposed project. The photo simulation depicting future daytime aesthetic conditions with implementation of the proposed project KOP 3 is shown in Figure 8.

a) Would the proposed project have a substantial adverse effect on a scenic vista?

There are no designated scenic vistas within the immediate viewshed of KOP 3. As described under existing conditions, there are no remarkable or unique visual features in the view from KOP 2.

As shown in Figure 8, the addition of the lighting fixtures at the multi-sport field as proposed would not be visible and would result in a visual feature that was dominant or out of character within the visual environment of KOP 3. The mountainous views in the background would not be obscured or interrupted by the placement of the proposed lighting poles. The proposed lighting would not create a substantial visual contrast or out of place element within the urban aesthetic that would result in an adverse visual effect.

b) Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

As described under existing conditions, there are no remarkable or unique scenic resources, such as visually important trees, rock outcroppings, or historic buildings in the view from KOP 3. The mountainous views in the background would not be modified by the proposed project lighting. The placement of four lighting poles within the existing urban view would not damage or modify the visual character of the area or cause damage to scenic resources from the view of KOP 3.

c) Would the proposed project substantially degrade the existing visual character or quality of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The introduction of four tall light fixtures into the KOP 3 viewshed would not create a visually noticeable element of size or mass. There would be no substantial contrast with the surrounding urban environment. Even at 80 to 90 feet in height, the light poles would be thin and would not visible from KOP 3. Further, implementation of the proposed project would not conflict with the regulations presented in Section 4.3. Thus, the visual character and quality public views of the site and surroundings from KOP 3 would not be substantially degraded by the proposed project.

6.0 LIGHTING ANALYSIS

6.1 METHODOLOGY

The lighting analysis is based on the analysis conducted by Johnson Consultants Engineers Inc., the electrical engineer for the proposed project. The lighting analysis (provided as Appendix A) provides quantification of the illumination produced by the proposed project lighting design. The lighting analysis also provides a glare impact that indicates the maximum candela and an observer would see when facing the brightest light source from any direction. The lighting analysis considers impacts based on the CEQA Guidelines threshold related to nighttime light and glare.

6.2 SENSITIVE VIEWERS

Residential Areas

Residential neighborhoods are the most sensitive areas that could be adversely affected by light trespass and glare effects associated with new light sources as a result of the proposed project. Residents have high sensitivity as they have long-term exposure to changes in the visual environment from their homes and could be greatly affected by adverse lighting consequences such as increased ambient light during nighttime hours. The nearest residents are approximately 400 feet west of the closest proposed lighting fixtures at the multi-sport field. The views from the lower level of residential homes toward the proposed project area are partially obscured by a vegetated hillside leading up to the CCA parking lot, which is elevated above the residential area and intervenes between the homes and the multi-sport field. Second-story windows of the residential homes abutting the CCA campus can see across the parking lot toward the multi-sport field; however, the field sits at a lower elevation below the parking area and is not visible from the homes. Figure 9 provides photographs of nighttime views in the proposed project vicinity. Photo A in Figure 9 is a nighttime view from the Edgewood Bend Court cul-de-sac (near KOP 1 location) showing the residential homes and their view toward the CCA campus parking lots.

Additional residential areas are located at father distances from the proposed project with more intervening uses. West of the proposed project site, near the Cathedral Catholic High School area approximately 0.5 mile away, residential homes are at a higher elevation than the proposed project but have intervening distance, development, and landscaping. Photo B in Figure 9 is a nighttime view from Deer Park Way and Rabbit Ridge Road (KOP 3 location) showing the

nighttime view from this residential area toward the proposed project site. North/northwest of the proposed project site is the Pacific Highlands Ranch residential development. There is much intervening development between the residential area and the proposed project site, such as the CCA campus, major roadways including Village Center Loop Road and Carmel Valley Road, and the commercial development. Northeast of the proposed project site, beyond the Pacific Highlands Ranch Community Park, are additional residential developments. To the south and southeast, residential homes on the south side of SR-56 may have views toward the proposed project site, but line-of-sight may be obscured by topography dependent on location. The potential sensitivity of these more distant residential locations to new light sources at the proposed project site is reduced due to the substantial development blocking views toward the proposed project site and the many existing light sources located between the areas.

Motorists

Motorists driving along local roads and SR-56 to the south and northeast are not considered highly sensitive to light pollution. This is because their exposure is short in duration as they pass by the proposed project site relatively quickly and are driving through an area that already has a lit nighttime ambience due to nearby uses with nighttime lighting such as commercial centers, roadway lighting, and other urban light sources. However, motorists are highly sensitive to potential glare impacts as a direct view into the light source resulting in disability or discomfort glare could cause hazardous driving conditions. Photo C in Figure 9 is a nighttime view from SR-56 (near KOP 2 location) looking toward the CCA campus and proposed project site.

Recreationalists

Recreationalists in the area include bikers using the SR-56 Bike Trail along the southern side of SR-56. As the bike trail is not lit; thus, riders are not anticipated to be on the trail after dark when the proposed lighting would be in use and are not considered potential nighttime viewers. Recreationalists would also be present at the new Pacific Highlands Community Park to the northwest of the CCA campus. However, this park is an active use park and does not involve scenic-related elements such as hiking or scenic viewing areas. The park includes night lighting for evening activities at the park; thus, recreationalists at the park are not considered highly sensitive to an increase in nighttime lighting.

Figure 9
Existing Nighttime Views at KOPs

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Other Nonsensitive Uses

Pacific Trails Middle School is located northeast of the CCA campus. The middle school shares a boundary with Pacific Highlands Ranch Community Park which is equipped for nighttime use. Thus, activities at the school in the evening hours would generally not be affected by a new light source in the area. Both Cathedral Catholic High School and Sycamore Ridge School are approximately 0.5 mile west of CCA but have blocked views toward the proposed project site. Additionally, Cathedral Catholic High School has existing lighting at their outdoor athletic field. Other urban development in the area, such as the commercial center to the north of the CCA campus, is also not considered a sensitive area. The commercial center is well lit at night and shoppers come to the area for a short time and expect a bright urban setting.

6.3 ANALYSIS

The following CEQA Guidelines threshold is the basis for the consideration of impact related to potential lighting effects resulting from the proposed project.

d) Would the proposed project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Dark Skies

The proposed project is in an urbanized area, surrounded by land uses such as commercial and residential developments and highways that are active into nighttime hours and have lighting associated with their use. Other nearby athletic and recreation facilities, such as Cathedral Catholic High School and the new Pacific Highlands Ranch Community Park, also have nighttime lighting to facilitate outdoor activities into the evening hours. The existing nighttime ambient brightness from existing lighting sources reduces the local areas' sensitivity to effects of nighttime lighting and sky glow. The proposed project site is also at a distance (30 miles or greater) from either of the local observatories and would not have a substantial effect on dark skies that may affect their quality of operation.

The proposed project would place four light fixtures ranging from 80 to 90 feet in height around the multi-sport field. The light fixtures are proposed at these heights to allow for the individual luminaires to be mounted using LED lights with a strong narrow beam angled downward, specifically focused on the field of play with a sharp cutoff. The design of the luminaire assemblies includes reflectors and shields to further minimize any light from extending in

undesired directions, such as upward or offsite. Thus, no substantial illumination would adversely interfere with or modify the existing nighttime ambience.

Glare

As described in Section 1.2, glare is visual discomfort experienced from high contrast caused by the light source and can be categorized as disability glare that reduces the ability to see or discomfort glare that is an annoyance. Glare impacts typically result from a direct line-of-sight view into the light source. For example, disability glare can result from the bright headlights of an oncoming car when angled into a driver's eye, causing a temporary inability to see the road.

The proposed project would introduce new light sources that have the potential to cause glare onsite or offsite if the luminarie assemblies were directed into viewer's line-of-sight or caused excessive uncontrolled brightness. Offsite viewers of concern include the surrounding residential neighborhoods where glare could enter windows (particularly bedroom windows) and disrupt sleep or nighttime ambience and motorists on local streets and SR-56 where glare could cause dangerous driving conditions by impairing drivers' ability to see.

The lighting control technology and lighting design proposed for installation at the multi-sport field would minimize the potential for glare impacts. The height of the light fixtures at 80 to 90 feet would allow the luminarie assemblies to be aimed downward at a sharp angle to focus the beam of light at the areas of desired illumination; thus, the light would be focused down toward the multi-sport field, not outward or toward offsite areas. This sharp downward angle would minimize the possibility for the light to shine directly into an offsite viewer's line-of-sight (or through a residential window) and cause glare impacts. Additionally, the lighting technology would include reflectors and shields that further direct the light downward and block upward light or offsite light. The proposed use of LED light technology would allow for intense light specifically focused on the multi-sport field and would not require or cause a broad floodlight type of effect to provide the proper illumination for the various areas of desired light. The sharp downward angle of the light beams, as well as specifically designed reflectors and shields, would minimize potential for glare impacts to offsite residences or motorists. While offsite viewers may be able to see areas of illumination from the proposed lighting, the new light sources would not be aimed toward offsite viewers or have arrant bright light beams that could cause substantial disability or discomfort glare.

Figure 10 shows the glare impact analysis summary based on the proposed lighting design and technology to be used in the proposed project. The colored image in the figure represents the maximum candela an observer would see when facing the brightest light source from any direction. As shown in the figure, areas of potential high glare (dark red color) and significant glare (red and dark orange colors) are generally centered tightly around the multi-sport field. This is consistent with the recommendation that high glare should only occur on or very near the lit area. Significant glare is equivalent to high beam headlights of a car. The green colors show the farthest extent of areas with potential for minimal to no glare (equivalent to a 100-watt light bulb). Figure 10 shows that all areas with the possibility for glare as a result of the proposed lighting are located entirely within the CCA campus and do not extend to offsite locations. The potential for significant glare ends prior to reaching the western parking lot area located between the multi-sport field and the nearest residential homes to the west. The multi-sport field is located at a lower elevation compared to the western parking lot, and therefore the potential impacts to glare are further contained to the multi-sport field area. The existing lighting in the western parking lot would further reduce potential impacts of glare on the western side of the multi-sport field. Thus, there is no significant potential for glare to adversely affect the nearest residential area. Additionally, as shown in Figure 10, the potential for significant glare does not extend to SR-56 or other offsite roadways. SR-56 is located at a lower elevation of the multi-sport field, and the berm on the northern side of the road shields most of the area from the view of the motorists. Therefore, no significant potential would occur for glare to adversely affect motorists.

Light Trespass

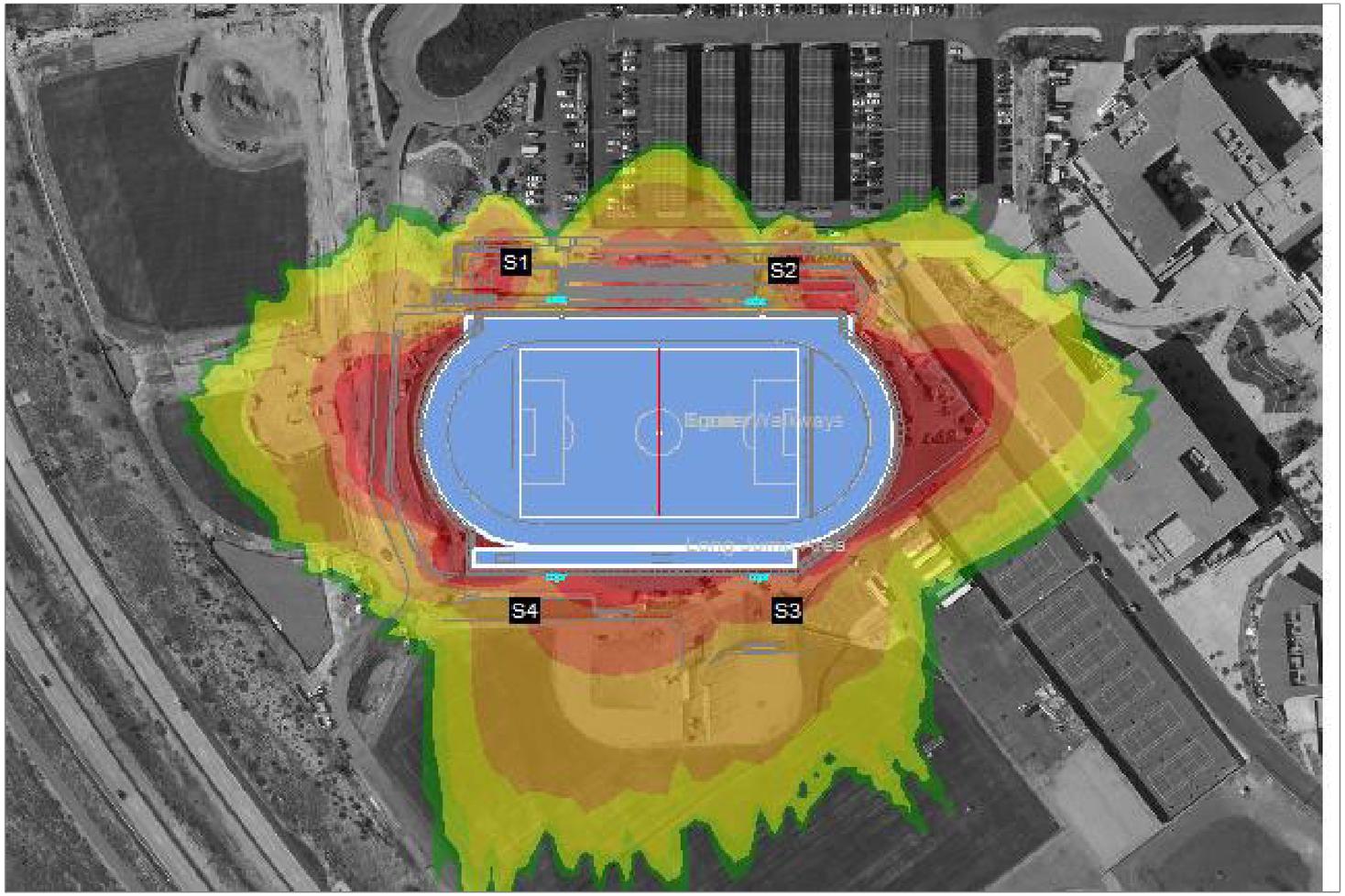
Implementation of the proposed project would install four new light sources around the multi-sport field. As discussed under dark skies and glare, the lighting system technology has been designed to minimize light pollution, including light trespass.

The proposed lighting, as described in Section 3.1, would be used to illuminate the field, track, walkways, and egress areas of the multi-sport field for games, practices, and events that occur during non-daylight hours. The project design feature listed in Section 3.1 requires enforcement of a "Lights Off" policy at the multi-sport field by 9:30 p.m. Additionally, in many cases, the lights would be turned off earlier, generally 2.5 hours after the sporting event start time. Based on the typical timing of events at the multi-sport field as outlined in Section 3.2, it is anticipated that lights would be on during normal weekday evenings from approximately sunset to 8:30 p.m. at the latest with some evening activities ending earlier. During transition seasons and playoffs, lights may be on until 9:30 p.m. Lights would generally not be used on weekends, with the exception of special playoff type events anticipated a maximum of two or three weekends a year

per sport. Light use during summertime would also be limited when school is out of session and any special activity would adhere to the 9:30 p.m. shutoff policy. These limited hours would help to minimize the potential amount of time that light trespass could occur, especially minimizing the lighting use time during normal sleeping hours in the nearest residential homes.

Figure 11 shows the calculated maintained maximum vertical fc that would result from the proposed lighting system. Vertical fc depict the projected levels of spill light extending on the vertical plane from the perimeter of the purposely lit area. On the playing field, there is a maximum of 98.9 fc; however, the illumination drops off quickly at the perimeters of the multi-sport field where the lighting is specifically directed. To the west, in the direction of the nearest residential housing, the amount of vertical illumination drops to 0.0 fc across the majority of the parking lot located between the lighting locations and the residential homes. Similarly, the vertical fc are reduced to 0.0 fc at the CCA buildings to the north, the tennis courts and ballfields to the east, and within the CCA boundaries to the south. Thus, areas beyond the CCA campus, including residential areas, SR-56, and other local roadways, would not be exposed to vertical light over 0.0 fc, or essentially any light spill or trespass with an imperceptible contribution to the ambient night lighting of the area. This is less than the lowest threshold limitation guidance of 0.8 fc outlined in Table 4.1 for pre-curfew (prior to 11 p.m.) hours.

The maintained horizontal fc that would result from the proposed lighting system are shown in Figure 12. Horizontal fc depict the calculated levels of spill light that would be created by the proposed project extending beyond the horizontal plane of the purposefully lit areas. Similar to the analysis of the vertical fc, the projected levels of illuminance on the horizontal plane from the light sources diminishes quickly beyond the focused areas of light. As shown in in Figure 12, illuminance is less than 0.0 fc across the parking lot to the west of the multi-sport field between the residential homes to the west. Horizontal fc are also calculated to have dropped to 0.0 fc at the CCA campus buildings to the north, tennis courts, eastern ballfields, and southern property boundary. Thus, areas beyond the CCA campus, including residential areas, SR-56, and other local roadways, would not be exposed to horizontal light over 0.0 fc, or essentially any light spill or trespass with an imperceptible contribution to the ambient night lighting of the area. This is less than the lowest threshold limitation guidance of 0.8 fc outlined in Table 4.1 for pre-curfew (prior to 11 p.m.) hours.



Canyon Crest Academy

San Diego, CA

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

GLARE

Candela Levels

High Glare: 150,000 or more candela
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.

ENGINEERED DESIGN By: Daniel Lohman • File #145915I • 13-Nov-18

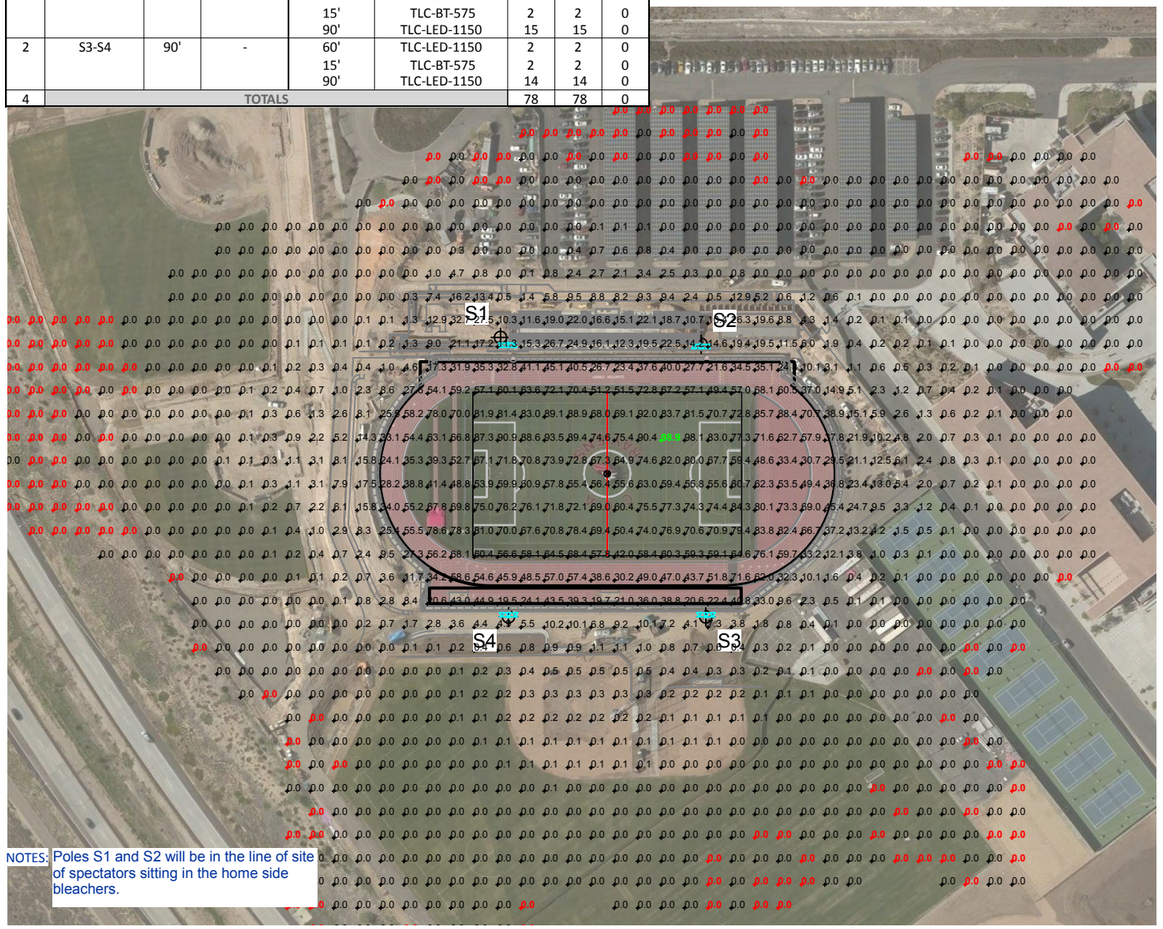
We Make It Happen.

Source: MUSCO Lighting 2018

Figure 10
Glare Impact

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	78	0



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Daniel Lohman • File #145915I • 13-Nov-18

Canyon Crest Academy

San Diego, CA

GRID SUMMARY

Name:	**Blanket Grid**
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**9.8**
Maximum:	98.9
Minimum:	0.0
Avg / Min:	-
Max / Min:	**-**
UG (adjacent pts):	2228.95
CU:	0.94
No. of Points:	1340

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 / 121,000 / 52,000 lumens
No. of Luminaires:	**78**
Total Load:	79.1 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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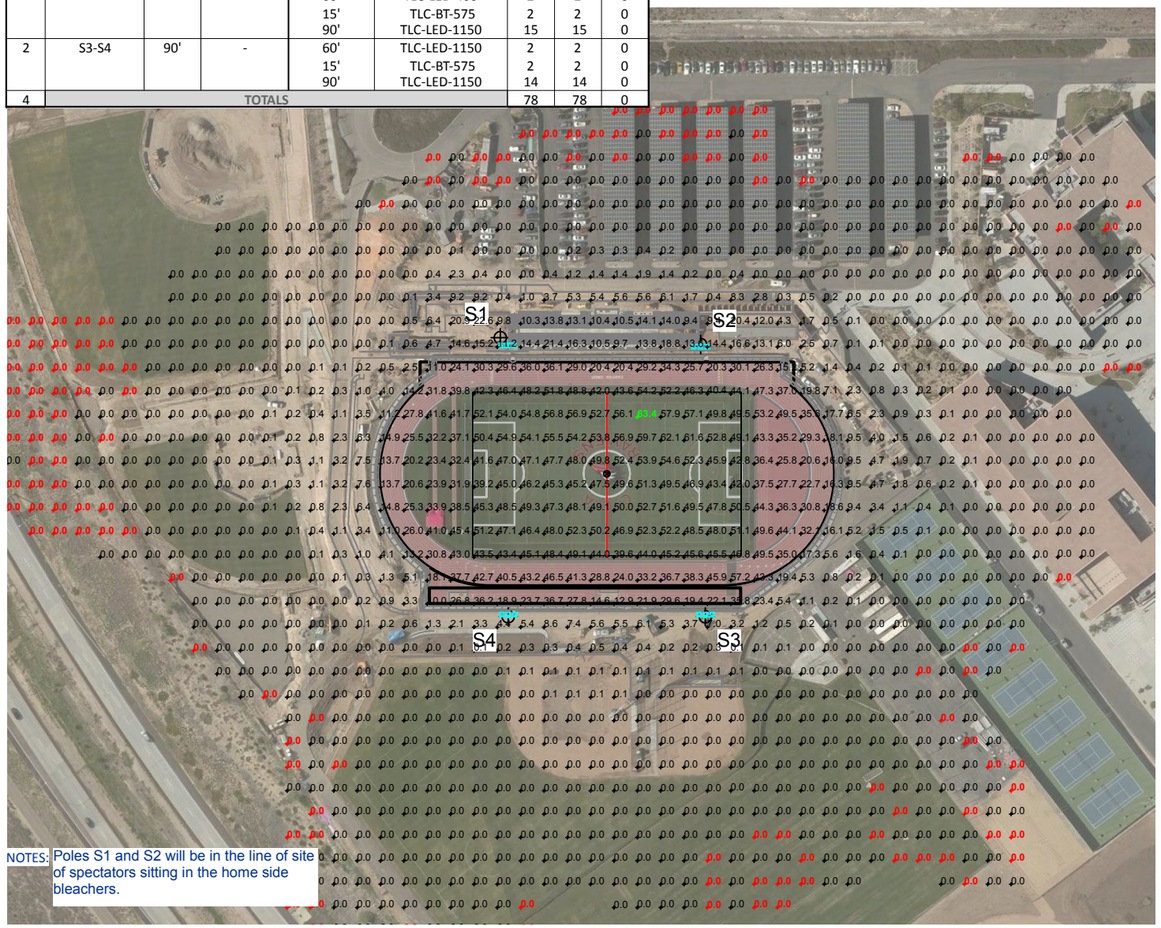
Source: MUSCO Lighting 2018

Figure 11
Vertical Illumination Summary

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	78	0



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Canyon Crest Academy

San Diego, CA

GRID SUMMARY

Name:	**Blanket Grid**
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**6.5**
Maximum:	63.4
Minimum:	0.0
Avg / Min:	-
Max / Min:	**-**
UG (adjacent pts):	3079.90
CU:	0.94
No. of Points:	1340

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 / 121,000 / 52,000 lumens
No. of Luminaires:	**78**
Total Load:	79.1 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Source: MUSCO Lighting 2018

Figure 12
Horizontal Illumination Summary

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7.0 CONCLUSIONS

Implementation of the proposed project would result in the installation of four new light poles and luminaire assemblies at the pole tops to illuminate the CCA multi-sport field and associated areas. These proposed lighting fixtures would create four new 80- to 90-foot-tall vertical features in the local aesthetic setting and create a new source of light within the existing ambient environment. The visual environment of the proposed project site and vicinity is urbanized with a variety of development, including night lighting at various nearby locations, which increases the ambient brightness of the area.

As discussed in the analysis provided in Section 5.3, the simulations prepared for each of the three KOPs show that that the addition of the tall light poles and the horizontal pole-top luminaire assembly rising in to the skyline would be visually more substantial than the existing lighting structures. However, the proposed lighting would not create an unexpected or out-of-context appearance. Because there are already poles protruding into the sky view, the addition of new poles would not substantially alter the view or create a stark visual change. The proposed project would not result in a substantial adverse effect on the visual environment or aesthetic quality of the community.

The proposed lighting system has been specifically designed to minimize impacts associated with light pollution, including sky glow, glare, and light trespass. The proposed lighting would have a required shutoff time of 9:30 p.m. The lighting analysis calculated illumination levels at nearby sensitive receptors (existing residential homes west of the multi-sport field and motorists along SR-56) would be at 0.0 fc. This is below the guideline of 0.8 fc (both horizontal and vertical) during pre-curfew hours. This indicates that areas beyond the CCA campus would not be exposed to illumination over 0.0 fc, or essentially any light spill or trespass, and there would be an imperceptible contribution to the ambient night lighting of the area.

The proposed lighting would not result in any substantial adverse lighting impacts and all appropriate light pollution minimization design measures and technology have been included in the lighting plan; thus, no mitigation is proposed.

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8.0 REFERENCES

Caltrans. 2018. Scenic Highways. Available at http://www.dot.ca.gov/design/lap/livability/scenic-highways/. Accessed December 27, 2018.

City of San Diego. 2000. Municipal Code; Chapter 14, Article 2, Division 7, Section 142.0740.

Electric Power Research Institute (EPRI). 2000. Light Trespass Research TR-114914, Final Report. April. Available at https://www.epri.com/#/pages/product/TR-114914/?lang=en-US. Accessed December 27, 2018.

Institution of Lighting Professionals (ILP). 2011. Guidance for the Reduction of Obstructive Light GN01. Available at http://www.wiltshire.gov.uk/guidance-notes-for-the-reduction-of-obtrusive-light.pdf. Accessed December 27, 2018.

Musco Sports Lighting, LLC (Musco). 2018a. Musco Lighting Total Light Control webpage. Available at http://www.musco.com/total-light-control/. Accessed December 31, 2018.

Musco Sports Lighting, LLC (Musco). 2018b. Canyon Crest Academy Illumination Summary. November 13, 2018.

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ATTACHMENT A

LIGHTING ANALYSIS FOR CANYON CREST ACADEMY

Canyon Crest Academy

San Diego, CA

NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
S1	80'	10'	2	TLC-BT-575	1.15 kW	A
		80'	15	TLC-LED-1150	17.25 kW	A
		55'	2	TLC-LED-400	0.80 kW	B
		50'	2	TLC-LED-400	0.80 kW	B
S2	90'	15'	2	TLC-BT-575	1.15 kW	A
		90'	15	TLC-LED-1150	17.25 kW	A
		65'	2	TLC-LED-400	0.80 kW	B
		60'	2	TLC-LED-400	0.80 kW	B
S3-S4	90'	15'	2	TLC-BT-575	1.15 kW	A
		90'	14	TLC-LED-1150	16.10 kW	A
		60'	2	TLC-LED-1150	2.30 kW	C
4			***78***		***79.10 kW***	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Soccer	71.3 kW	66
B	Egress/Walkways	3.2 kW	8
C	Long Jump Area/Egress	4.6 kW	4

Fixture Type Summary

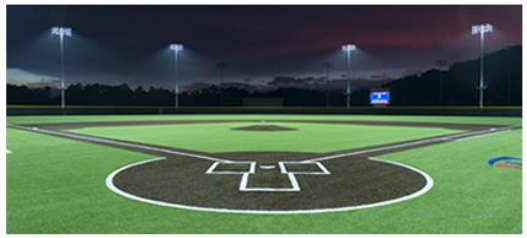
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>81,000	>81,000	>81,000	8
TLC-LED-1150	LED 5700K - 75 CRI	1150W	121,000	>81,000	>81,000	>81,000	62

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Away Egress	Horizontal	15.3	1.10	31.9	29.61	13.91	C	4
Blanket Grid	Horizontal	6.50	0	63.4	0.00		A,B,C	78
Blanket Grid	Max Candela (by Fixture)	89685	0	751205	0.00		A,B,C	78
Blanket Grid	Max Vert Illuminance (by Light Bank)	9.80	0	98.9	0.00		A,B,C	78
Bleacher Egress	Horizontal Illuminance	11.3	1.50	20.9	14.17	7.53	B	8
Egress Blanket Grid	Horizontal	2.70	0	28	0.00		B,C	12
Egress/Walkways	Horizontal Illuminance	0	0	0	0.00		A	66
Long Jump Area	Horizontal Illuminance	30.4	13.7	52.6	3.83	2.22	A,C	70
Soccer	Horizontal Illuminance	50.2	41.1	62.8	1.53	1.22	A	66
Track D-Zones	Horizontal	35.9	20.2	53.6	2.66	1.78	A	66
Track	Horizontal Illuminance	31.1	16.5	45.4	2.76	1.88	A	66
Walkway 1	Horizontal	11.8	1.60	26.1	16.16	7.38	B	8
Walkway 2	Horizontal	10.4	2.50	21.8	8.83	4.16	B	8

From Hometown to Professional



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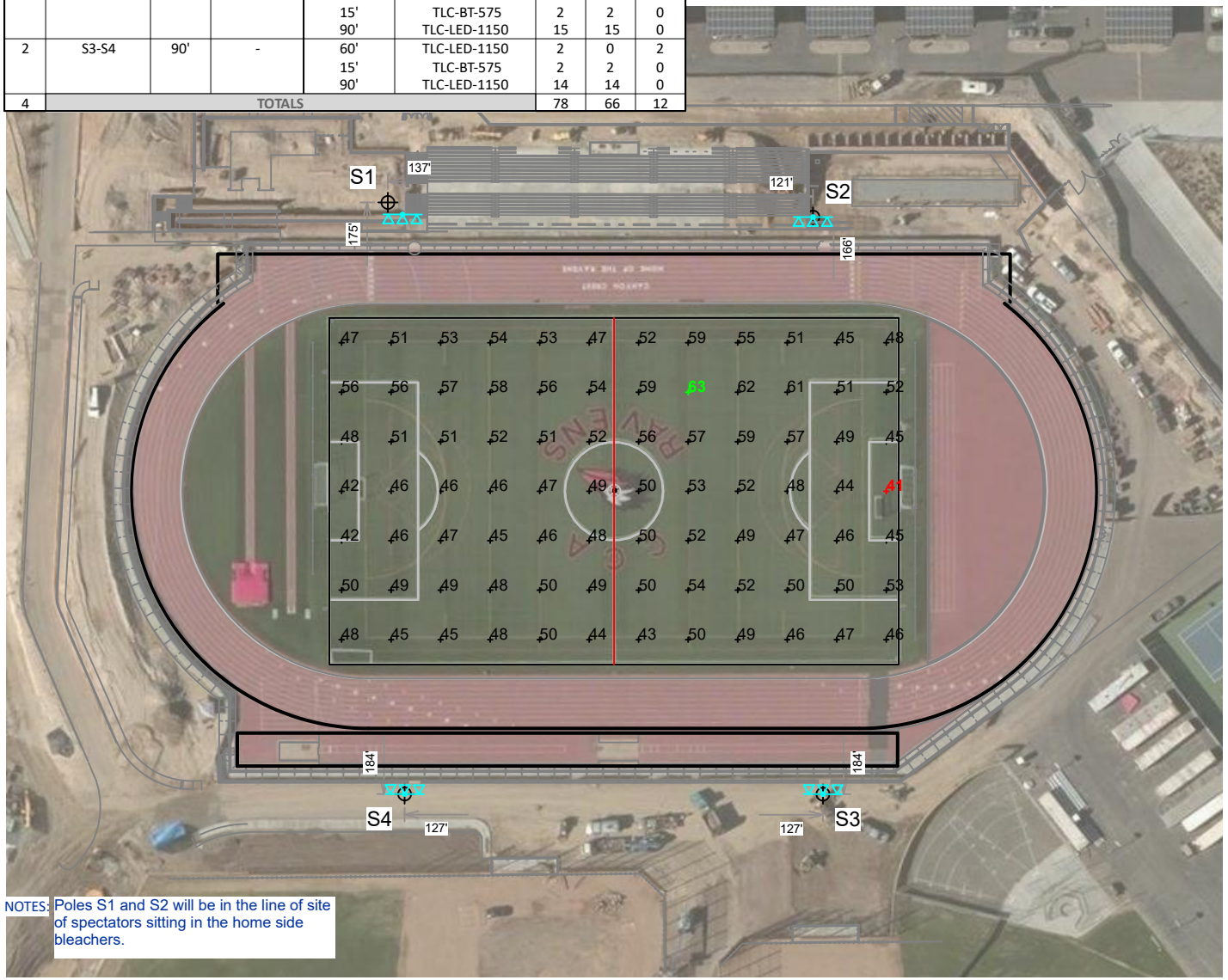
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	0	2
				58'	TLC-LED-400	2	0	2
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	0	2
				60'	TLC-LED-400	2	0	2
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	0	2
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	66	12



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⌖ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Soccer**
Size:	345' x 210'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**50**
Scan Average:	50.2
Maximum:	62.8
Minimum:	41.1
Avg / Min:	1.22
Guaranteed Max / Min:	**2**
Max / Min:	1.53
UG (adjacent pts):	1.20
CU:	0.51
No. of Points:	84

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 52,000 lumens
No. of Luminaires:	**66**
Total Load:	71.3 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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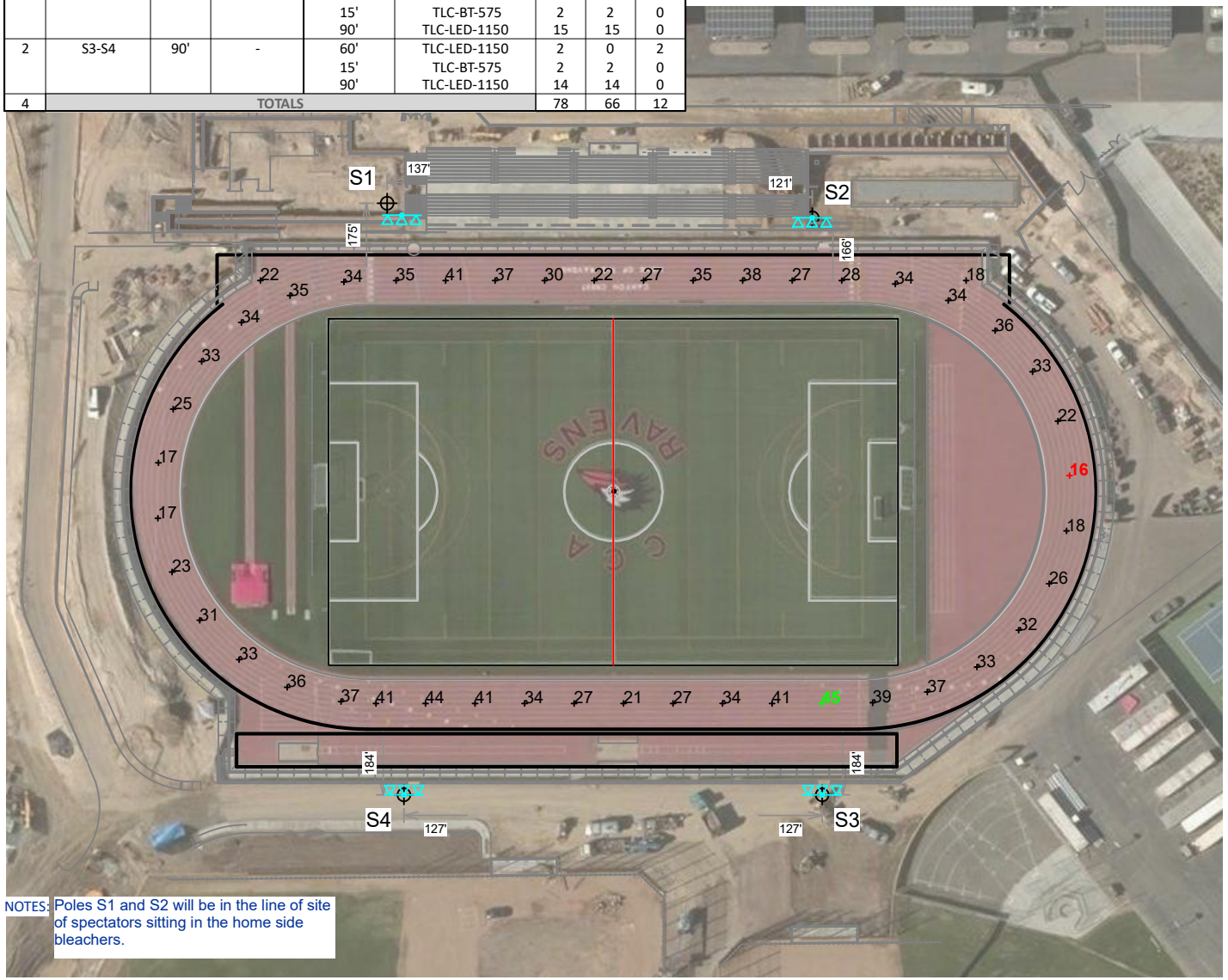
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	0	2
				58'	TLC-LED-400	2	0	2
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	0	2
				60'	TLC-LED-400	2	0	2
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	0	2
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	66	12



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Track**
Size:	Irregular
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**31.1**
Maximum:	45.4
Minimum:	16.5
Avg / Min:	1.89
Max / Min:	**2.76**
UG (adjacent pts):	0.00
CU:	0.17
No. of Points:	46

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 52,000 lumens
No. of Luminaires:	**66**
Total Load:	71.3 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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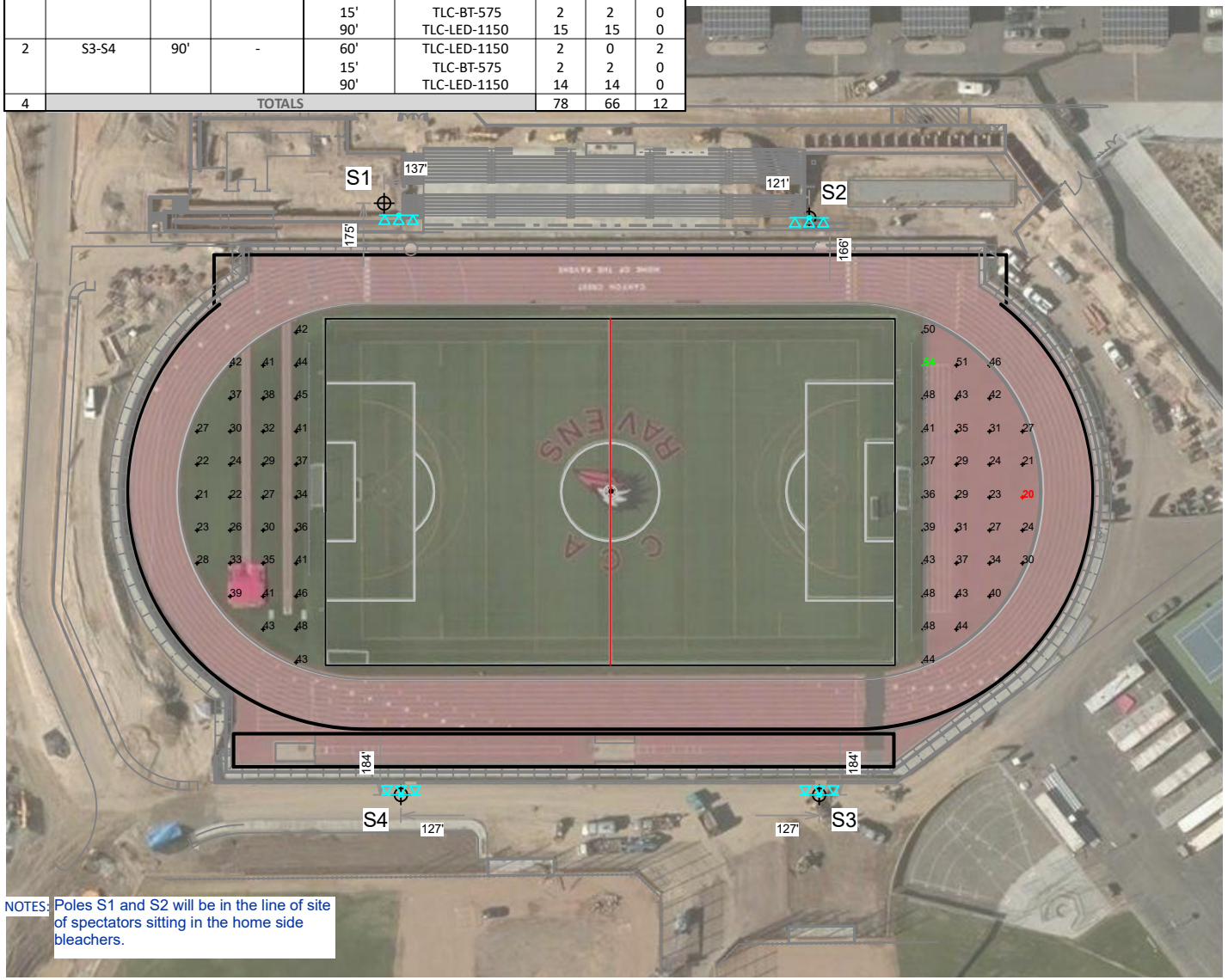
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	0	2
				58'	TLC-LED-400	2	0	2
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	0	2
				60'	TLC-LED-400	2	0	2
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	0	2
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	66	12



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Track D-Zones**
Size:	Irregular
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

INITIAL HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**35.9**
Maximum:	53.6
Minimum:	20.2
Avg / Min:	1.78
Max / Min:	**2.66**
UG (adjacent pts):	1.35
CU:	0.13
No. of Points:	66

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 52,000 lumens
No. of Luminaires:	**66**
Total Load:	71.3 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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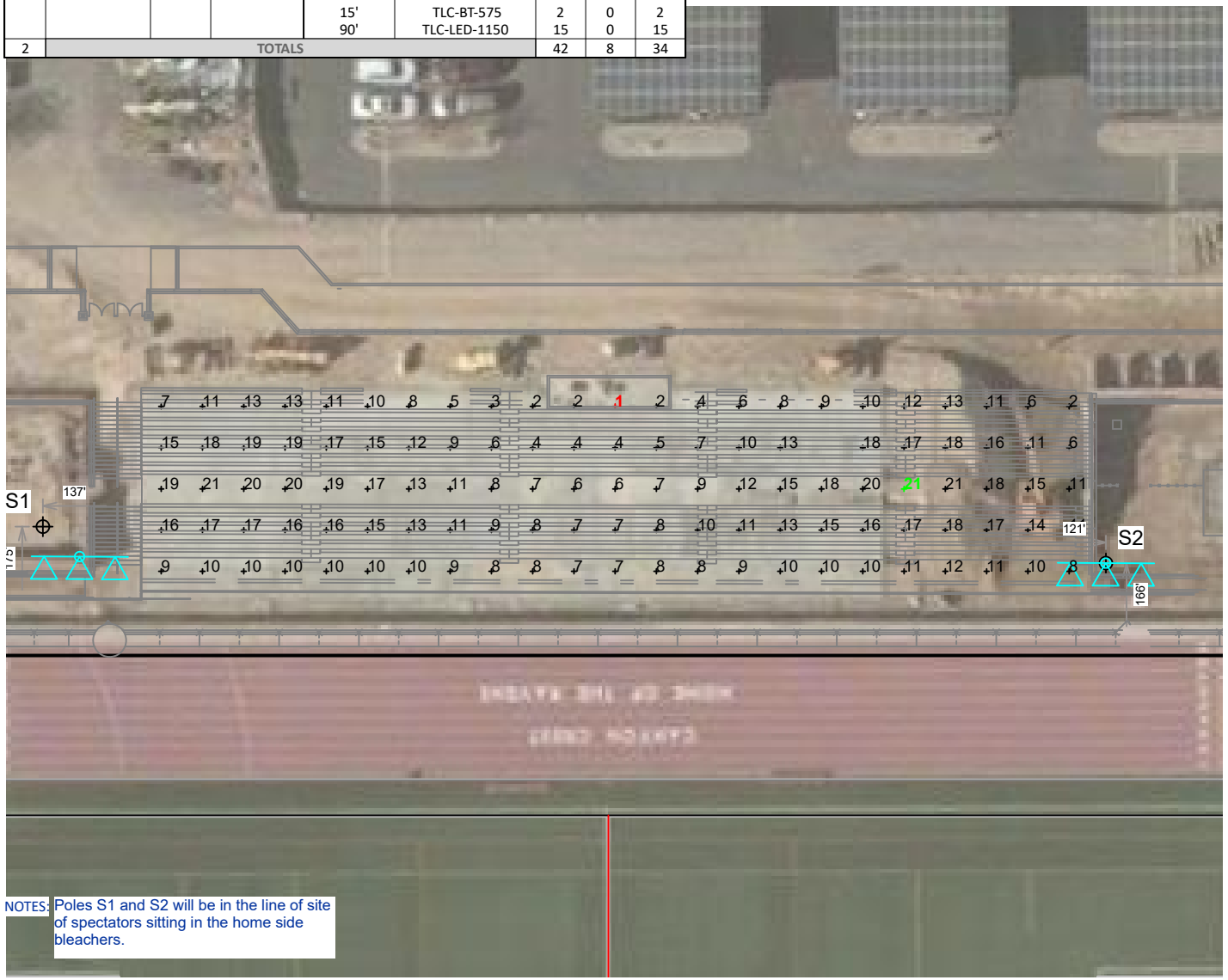
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	0	2
				88'	TLC-LED-1150	15	0	15
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	0	2
				90'	TLC-LED-1150	15	0	15
2	TOTALS					42	8	34



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 40

0' 40' 80'

Pole location(s) ⌖ dimensions are relative to 0,0 reference point(s) ⊗

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Canyon Crest Academy

San Diego, CA

GRID SUMMARY

Name:	**Bleacher Egress**
Size:	1' x 1'
Spacing:	10.0' x 10.0'
Height:	4.9' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**11.3**
Maximum:	20.9
Minimum:	1.5
Avg / Min:	7.66
Max / Min:	**14.17**
UG (adjacent pts):	0.00
CU:	0.33
No. of Points:	114

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 lumens
No. of Luminaires:	**8**
Total Load:	3.2 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	0	2
				88'	TLC-LED-1150	15	0	15
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	0	2
				90'	TLC-LED-1150	15	0	15
2	TOTALS					42	8	34

NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Walkway 1**
Size:	1' x 1'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**11.8**
Maximum:	26.1
Minimum:	1.6
Avg / Min:	7.31
Max / Min:	**16.16**
UG (adjacent pts):	2.06
CU:	0.20
No. of Points:	66

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 lumens
No. of Luminaires:	**8**
Total Load:	3.2 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	0	2
				88'	TLC-LED-1150	15	0	15
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	0	2
				90'	TLC-LED-1150	15	0	15
2	TOTALS					42	8	34

NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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San Diego, CA

GRID SUMMARY

Name:	**Walkway 2**
Size:	1' x 1'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**10.4**
Maximum:	21.8
Minimum:	2.5
Avg / Min:	4.23
Max / Min:	**8.83**
UG (adjacent pts):	1.80
CU:	0.16
No. of Points:	60

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 lumens
No. of Luminaires:	**8**
Total Load:	3.2 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	0	2
				90'	TLC-LED-1150	14	0	14
2	TOTALS					36	4	32

NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Canyon Crest Academy

San Diego, CA

GRID SUMMARY

Name:	**Away Egress**
Size:	1' x 1'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**15.3**
Maximum:	31.9
Minimum:	1.1
Avg / Min:	14.20
Max / Min:	**29.61**
UG (adjacent pts):	3.44
CU:	0.47
No. of Points:	141

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**4**
Total Load:	4.6 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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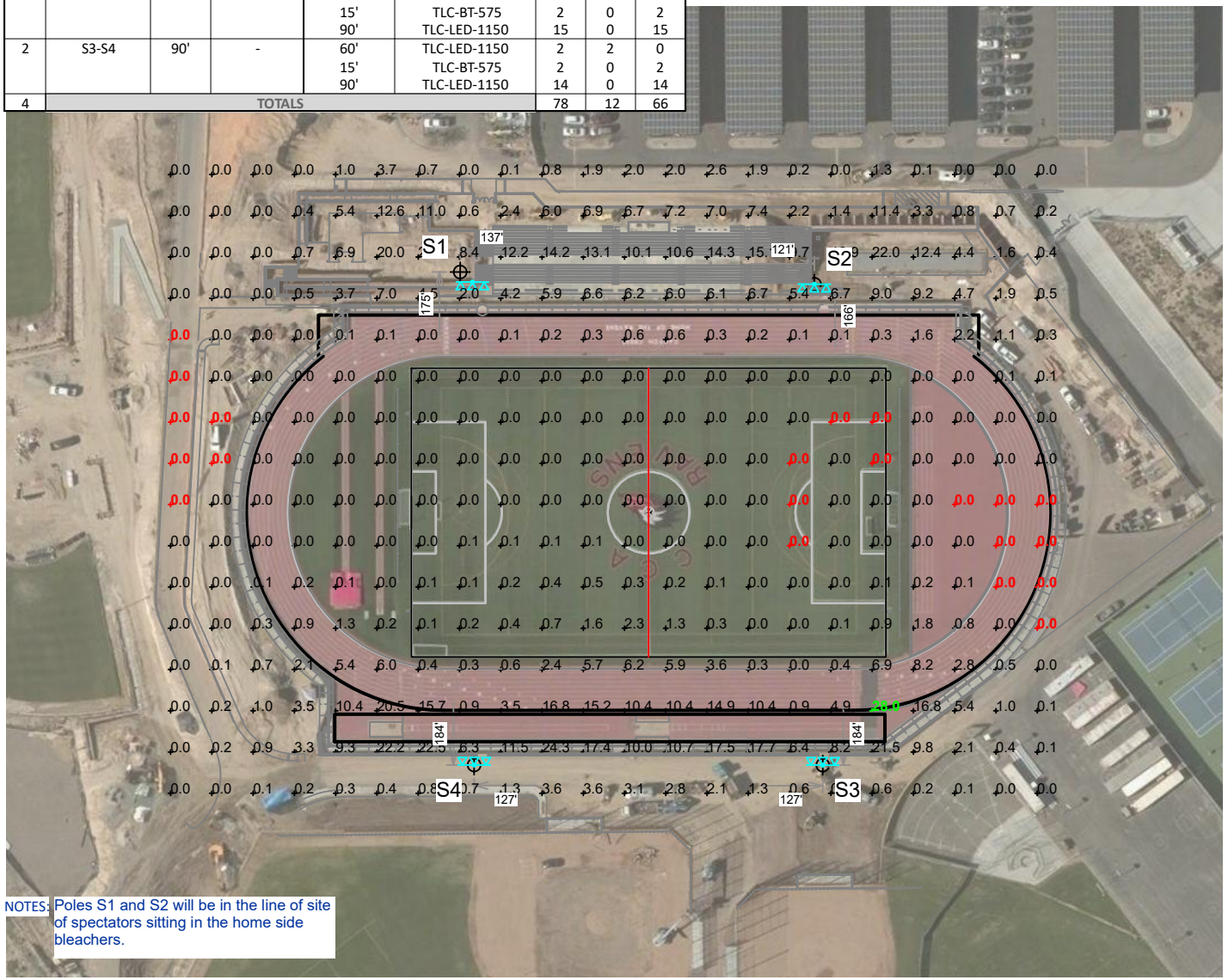
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	0	2
				88'	TLC-LED-1150	15	0	15
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	0	2
				90'	TLC-LED-1150	15	0	15
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	0	2
				90'	TLC-LED-1150	14	0	14
4	TOTALS					78	12	66



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 120

0' 120' 240'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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GRID SUMMARY

Name:	**Egress Blanket Grid**
Size:	1' x 1'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**2.7**
Maximum:	28.0
Minimum:	0.0
Avg / Min:	-
Max / Min:	-
UG (adjacent pts):	22247.96
CU:	1.00
No. of Points:	352

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 / 121,000 lumens
No. of Luminaires:	**12**
Total Load:	7.8 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000
TLC-LED-1150	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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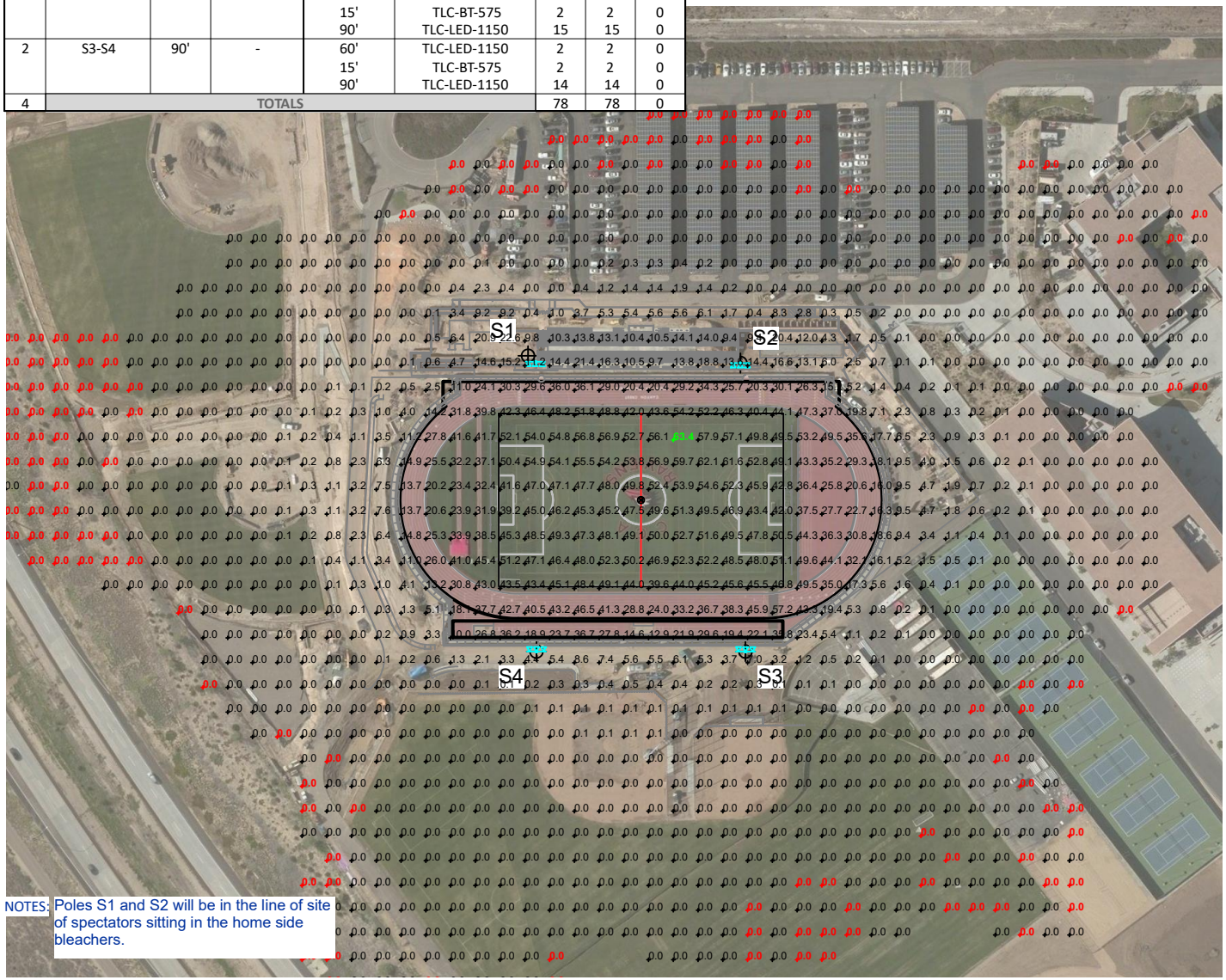
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	78	0



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⌖ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Blanket Grid**
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**6.5**
Maximum:	63.4
Minimum:	0.0
Avg / Min:	-
Max / Min:	**-**
UG (adjacent pts):	3079.90
CU:	0.94
No. of Points:	1340

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 / 121,000 / 52,000 lumens
No. of Luminaires:	**78**
Total Load:	79.1 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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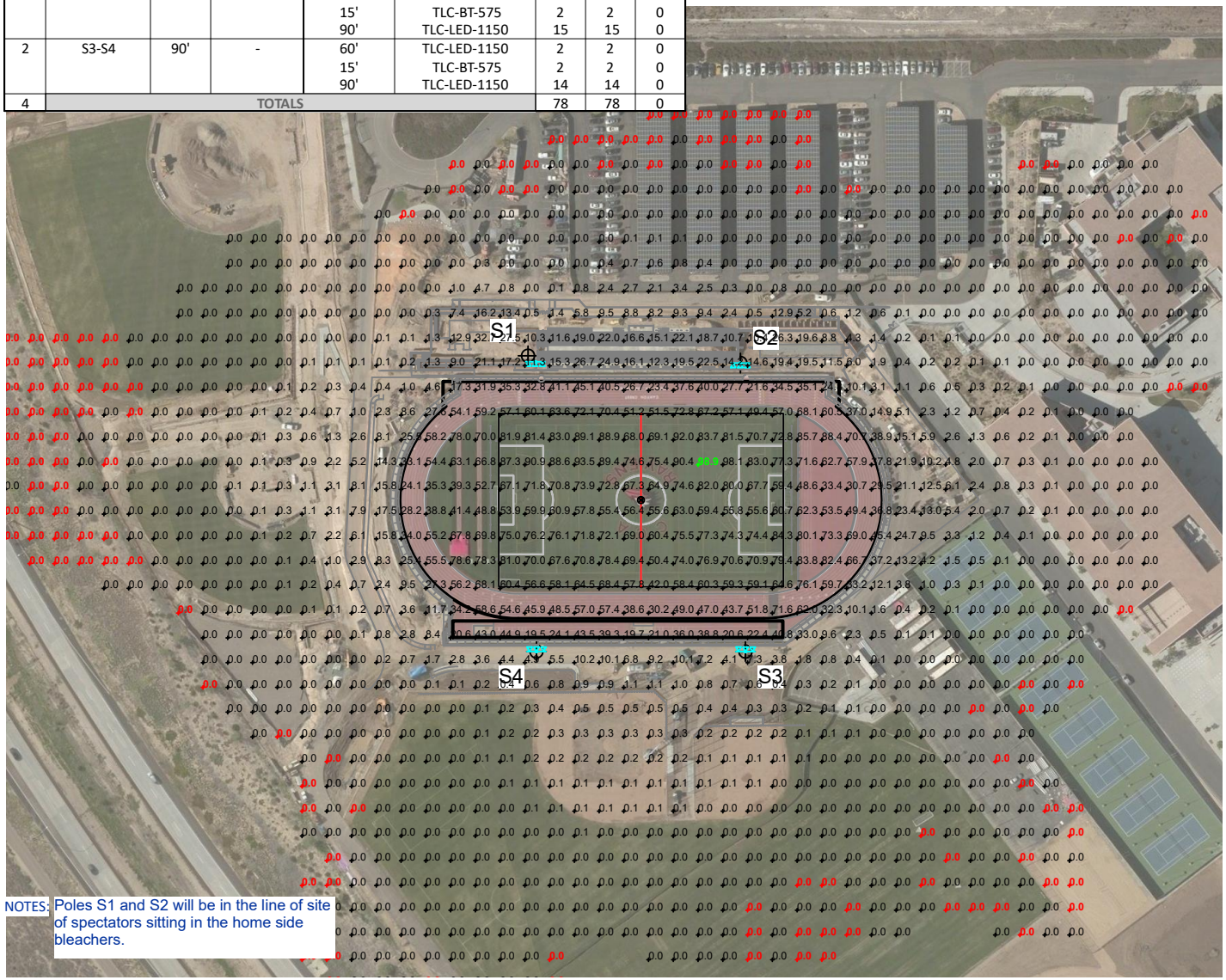
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	78	0



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⌖ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Blanket Grid**
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**9.8**
Maximum:	98.9
Minimum:	0.0
Avg / Min:	-
Max / Min:	**-**
UG (adjacent pts):	2228.95
CU:	0.94
No. of Points:	1340

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 / 121,000 / 52,000 lumens
No. of Luminaires:	**78**
Total Load:	79.1 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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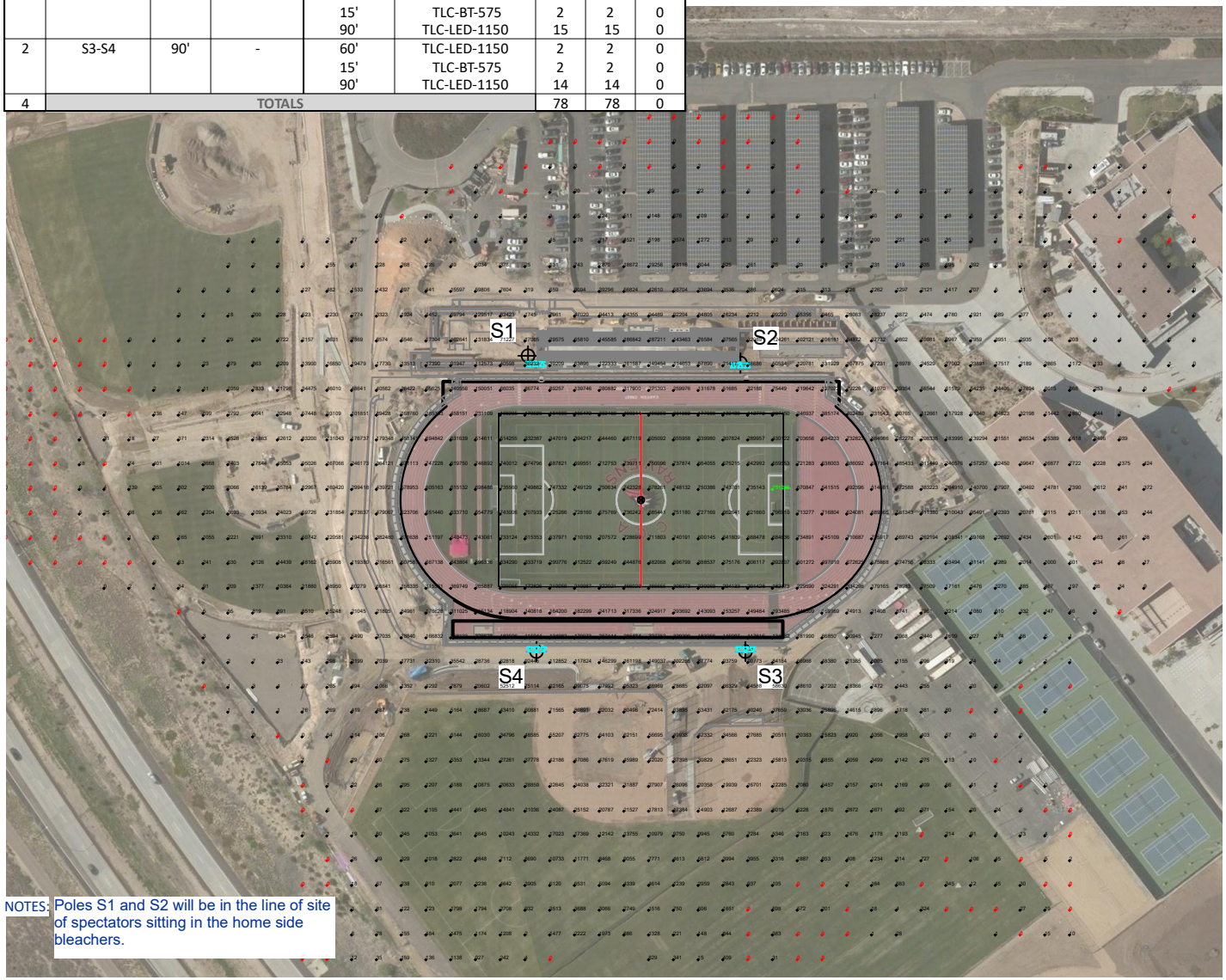
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	2	0
				58'	TLC-LED-400	2	2	0
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	2	0
				60'	TLC-LED-400	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	78	0



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Blanket Grid**
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	**89684.5**
Maximum:	751204.5
Minimum:	0.0
Avg / Min:	-
Max / Min:	**-**
UG (adjacent pts):	9196.26
CU:	0.94
No. of Points:	1340

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 / 121,000 / 52,000 lumens
No. of Luminaires:	**78**
Total Load:	79.1 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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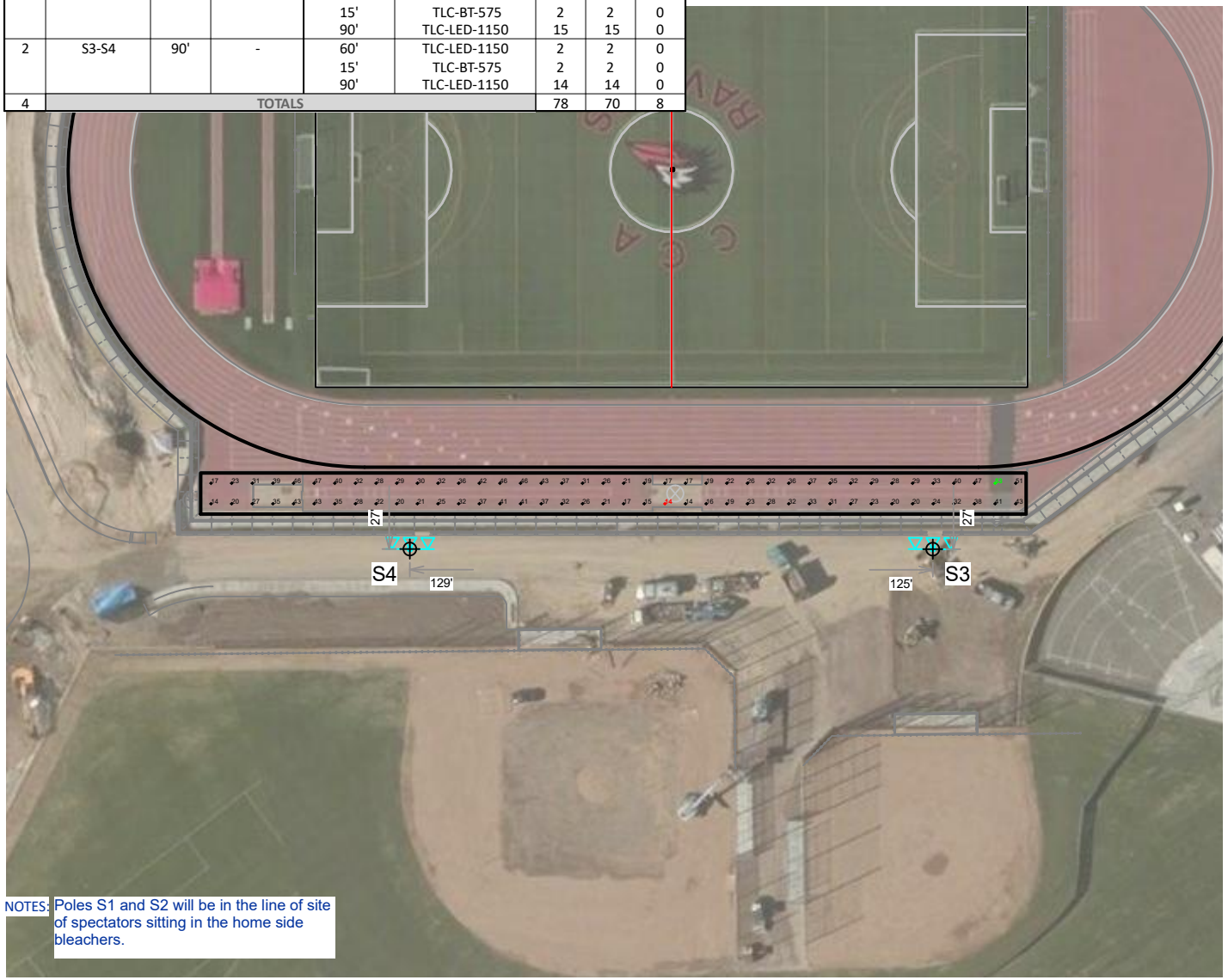
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	80'	8'	63'	TLC-LED-400	2	0	2
				58'	TLC-LED-400	2	0	2
				18'	TLC-BT-575	2	2	0
				88'	TLC-LED-1150	15	15	0
1	S2	90'	-	65'	TLC-LED-400	2	0	2
				60'	TLC-LED-400	2	0	2
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	15	15	0
2	S3-S4	90'	-	60'	TLC-LED-1150	2	2	0
				15'	TLC-BT-575	2	2	0
				90'	TLC-LED-1150	14	14	0
4	TOTALS					78	70	8



NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) ⌖ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Long Jump Area**
Size:	400' x 20'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

INITIAL HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**30.4**
Maximum:	52.6
Minimum:	13.7
Avg / Min:	2.21
Max / Min:	**3.83**
UG (adjacent pts):	1.44
CU:	0.03
No. of Points:	80

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 52,000 lumens
No. of Luminaires:	**70**
Total Load:	75.9 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>81,000	>81,000	>81,000
TLC-BT-575	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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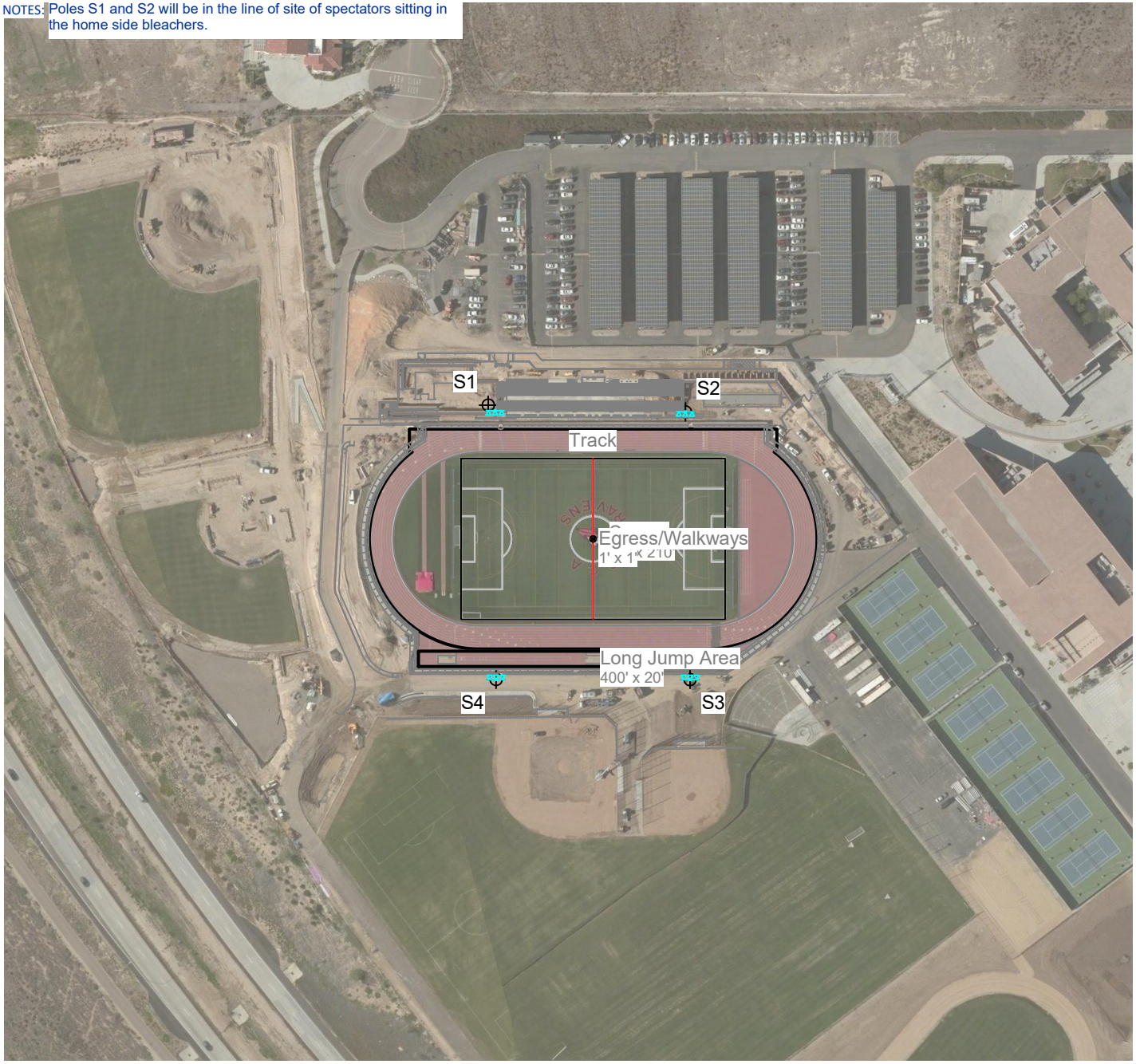
NOTES: Poles S1 and S2 will be in the line of site of spectators sitting in the home side bleachers.



SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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San Diego, CA

EQUIPMENT LAYOUT

INCLUDES:

· Egress/Walkways
· Long Jump Area
· Soccer
· Track

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	S1	80'	8'	63'	TLC-LED-400	2
				58'	TLC-LED-400	2
				18'	TLC-BT-575	2
				88'	TLC-LED-1150	15
1	S2	90'	-	65'	TLC-LED-400	2
				60'	TLC-LED-400	2
				15'	TLC-BT-575	2
				90'	TLC-LED-1150	15
2	S3-S4	90'	-	60'	TLC-LED-1150	2
				15'	TLC-BT-575	2
				90'	TLC-LED-1150	14
4	TOTALS					78

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-LED-1150	6.8	6.5	5.9	5.1	4.1	3.7	3.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5

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San Diego, CA

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

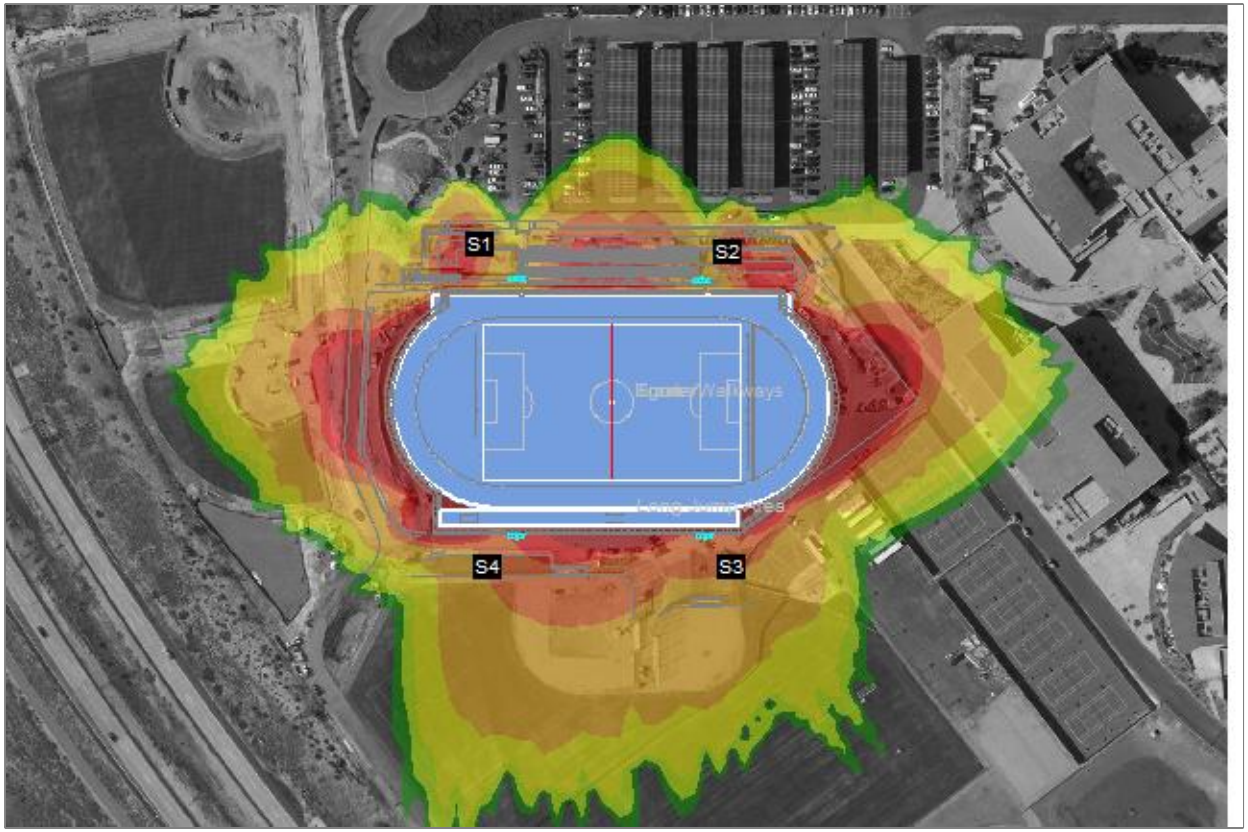
GLARE

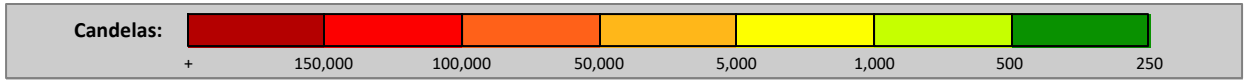
Candela Levels

High Glare: 150,000 or more candela
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.





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APPENDIX B

AIR QUALITY AND GREENHOUSE GAS ANALYSIS

AIR QUALITY AND GREENHOUSE GAS IMPACT ANALYSIS
CANYON CREST ACADEMY STADIUM LIGHTING PROJECT

Prepared for:

San Dieguito Union High School District
710 Encinitas Boulevard
Encinitas, California 92024
Contact: John Addleman

Prepared by:

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	degrees Centigrade
°F	degrees Fahrenheit
AB	Assembly Bill
ARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CAPCOA	California Air Pollution Control Officers Association
CCA	Canyon Crest Academy
CEQA	California Environmental Quality Act
CH4	methane
CO	carbon monoxide
CO2	carbon dioxide
diesel PM	diesel particulate matter
District	San Dieguito Union High School District
DOE	Department of Energy
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
GWP	global warming potential
LED	light-emitting diode
MMT	million metric tons
MT	metric ton
N2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO	nitric oxide
NO2	nitrogen dioxide
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
PM	particulate matter
PM10	particulate matter equal to or less than 10 micrometers in diameter
PM2.5	particulate matter equal to or less than 2.5 micrometers in diameter
proposed project	Canyon Crest Academy Stadium Lighting Project
RAQS	Regional Air Quality Strategy
ROG	reactive organic gas

SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas & Electric
SIP	State Implementation Plan
SO2	sulfur dioxide
TAC	toxic air contaminant
VMT	vehicle miles traveled
VOC	volatile organic compound
WRCC	Western Regional Climate Center

SECTION 1
INTRODUCTION

This technical memorandum describes the potential air quality and greenhouse gas (GHG) emissions associated with construction and operation of the Canyon Crest Academy Stadium Lighting Project (proposed project). The proposed project would install lighting at the multi-sport field on the school campus. This air quality and GHG analysis was prepared to address potential air quality and GHG impacts to support the California Environmental Quality Act (CEQA) review.

1.1 PROJECT DESCRIPTION

Canyon Crest Academy (CCA) is a public school within the San Dieguito Union High School District (District) that serves roughly 2,575 high school students in grades 9 through 12. CCA was founded in 2004 and originally was occupied in temporary portable buildings. The existing school site was fully constructed in 2006. CCA is a "school of choice" where any student in the District can choose to attend the academy. Students who attend CCA can pursue specialized education in the arts, sciences, and technology. School is generally in session from 8:30 a.m. to 3:30 p.m.

CCA offers 21 varsity sports programs including tennis, volleyball, field hockey, soccer, lacrosse, baseball, and softball. Outdoor courts and fields for these sports are located at the south and southeast portion of the CCA campus. Currently, the tennis courts are lit, but the field used for field hockey, soccer, and lacrosse (hereafter referred to as the "multi-sport field"), as well as the baseball and softball fields do not contain lighting fixtures. Because of this, games must start early enough in the day so that the students are able to complete the entire game before sunset. This results in students leaving their last class early to prepare for their sporting event. In response to concerns raised by parents of the students involved in these athletic programs, the District has decided to construct lighting at the multi-sport field. The installation of this lighting will allow games to start between 15 to 30 minutes after school is released.

The light fixtures would be equipped with light-emitting diode (LED) lights. On the southwest pole, two lighting fixtures would be placed at 10 feet above the ground level for uplighting purposes to ensure no gaps occur in the lighting on the field. Two fixtures at 50 feet and two at 55 feet above ground level would be placed on the southwest pole for egress illumination, to ensure a safe exit from the bleachers. This lighting would not extend into the parking lot, as there

is already lighting underneath the solar panels installed in the parking lots. Fifteen light fixtures would be placed at 80 feet above ground level on the southwest pole directed at the field and track to light the field. On the northwest pole, two uplighting fixtures would be placed at 15 feet above ground level. Two egress lighting fixtures would be placed at 60 feet and two at 65 feet above ground level. Fifteen light fixtures would be placed at 90 feet above ground level for field lighting. For the two poles on the east side of the field, two uplighting fixtures would be placed at 15 feet above ground level, two egress lighting fixtures would be placed at 60 feet above ground level, and 14 lighting fixtures would be placed at 90 feet above ground level.

It is anticipated that construction of the proposed project would take roughly 6 to 8 weeks and would occur during the summer when school is not in session. It is not anticipated that implementation of the proposed project would increase visitor attendance at the games. All light fixtures would be turned off by 9:30 p.m. During a typical week, lighting would only be used Monday through Friday, while lighting could also be used on Saturdays during season transition and playoff weeks.

SECTION 2
AIR QUALITY BACKGROUND AND EXISTING CONDITIONS

2.1 CLIMATE, TOPOGRAPHY, AND METEOROLOGY

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

Climate, topography, and meteorology influence regional and local ambient air quality. Southern California is characterized as a semiarid climate, although it contains three distinct zones of rainfall that coincide with the coast, mountain, and desert. CCA is located in the Pacific Highlands Ranch community of the City of San Diego, and within the San Diego Air Basin (SDAB). The SDAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountain ranges to the east. The topography in the SDAB region varies greatly, from beaches on the west, to mountains and then desert to the east.

The climate of the SDAB is characterized by warm, dry summers and mild winters. One of the main determinants of its climatology is a semi-permanent high-pressure area in the eastern Pacific Ocean. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation. During fall, the region often experiences dry, warm easterly winds, locally referred to as Santa Ana winds, which raise temperatures and lower humidity, often to less than 20 percent.

The local meteorology of the area is represented by measurements recorded at the Poway Valley station. The normal annual precipitation, which occurs primarily from October through April, is approximately 13 inches. Normal January temperatures range from an average minimum of 41 degrees Fahrenheit (°F) to an average maximum of 67°F, and August temperatures range from an average minimum of 62°F to an average maximum of 86°F (WRCC 2016).

A dominant characteristic of spring and summer is night and early morning cloudiness, locally known as the marine layer. Low clouds form regularly, frequently extending inland over the coastal foothills and valleys. These clouds usually dissipate during the morning, and afternoons are generally clear.

A common atmospheric condition known as a temperature inversion affects air quality in the SDAB. During an inversion, air temperatures get warmer rather than cooler with increasing height. Inversion layers are important for local air quality, because they inhibit the dispersion of pollutants and result in a temporary degradation of air quality. The pollution potential of an area is largely dependent on a combination of winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and low-level inversions produces the greatest concentration of air pollutants. On days without inversions, or on days of winds averaging over 15 miles per hour, the atmospheric pollution potential is greatly reduced.

2.2 CRITERIA POLLUTANTS

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) as being of concern on both nationwide and statewide levels: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM). PM is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because the air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as "criteria air pollutants."

Ozone. Ozone is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) or volatile organic compounds (VOC), and nitrogen oxides (NO_X) in the presence of sunlight. ROG/VOC and NO_X are called precursors of ozone. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide (NO), NO_2, and others. Significant ozone concentrations are usually produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG/VOC and NO_X emissions are both considered critical in ozone formation.

Individuals exercising outdoors; children; and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered the most susceptible sub-groups for

ozone effects. Short-term exposure (lasting for a few hours) to ozone can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in sports and live in communities with high ozone levels.

Carbon Monoxide. CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors adjacent to the intersections. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Nitrogen Dioxide. NO_2 is a product of combustion and is generated in vehicles and in stationary sources, such as power plants and boilers. It is also formed when ozone reacts with NO in the atmosphere. As noted above, NO_2 is part of the NO_X family and is a principal contributor to ozone and smog generation. Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children, is associated with long-term exposure to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Airway contraction and increased resistance to air flow are observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

Sulfur Dioxide. SO_2 is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. SO_2 in the atmosphere contributes to the formation of acid rain. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease. In asthmatics, increased resistance to air flow and a reduction in breathing capacity leading to severe breathing difficulties are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically, or one pollutant alone is the predominant factor.

Lead. Lead is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere from mobile and industrial sources. EPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that there are no direct effects of lead on the respiratory system.

Particulate Matter. PM is a complex mixture of extremely small particles that consists of dry solid fragments, solid cores with liquid coatings, and small liquid droplets. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, soot, and soil or dust particles. Natural sources of PM include windblown dust and ocean spray. The size of PM is directly linked to the potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Health studies have shown a significant association between exposure to PM and premature death. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and irregular heartbeat

(EPA 2016). Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. A consistent correlation between elevated PM levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer. EPA groups PM into two categories, which are described below.

$PM_{10.}$ PM_{10} includes both fine and coarse dust particles; the fine particles are $PM_{2.5}$. Coarse particles, such as those found near roadways and dust-producing industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM_{10} is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

$PM_{2.5.}$ Fine particles, such as those found in smoke and haze, are $PM_{2.5}$. Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and certain industrial processes. $PM_{2.5}$ is also formed through reactions of gases, such as SO_2 and NO_X, in the atmosphere. $PM_{2.5}$ is the major cause of reduced visibility (haze) in California.

2.3 AIR QUALITY STANDARDS

Health-based air quality standards have been established for these criteria pollutants by EPA at the national level and by ARB at the state level. These standards were established to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 1 presents the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). The most current monitoring station data and attainment designations for the project study area are shown in Table 2.

Table 1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a]	National Standards [b]	
		Concentration [c]	Primary [c,d]	Secondary [c,e]
Ozone[l]	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
Respirable particulate matter (PM_{10})[f]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	–	
Fine particulate matter ($PM_{2.5}$) [f]	24 hours	–	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	15 µg/m
Carbon monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide (NO_2) [g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide (SO_2) [h]	Annual arithmetic mean	–	0.030 ppm (for certain areas) [h]	–
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [h]	–
	3 hours	—	–	0.5 ppm (1,300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead [i,j]	30-day average	1.5 µg/m^3	–	–
	Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility-reducing particles [k]	8 hours	See footnote j	No national standards	
Sulfates	24 hours	25 µg/m^3		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride [i]	24 hours	0.01 ppm (26 µg/m^3)		

Notes: mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150

1-hour standard to the California standards the units can be converted from 100 ppb to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national

$\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

[f] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

[i] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[j] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[k] In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

[l] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

Source: ARB 2016a

2.4 SAN DIEGO AIR BASIN EXISTING AIR QUALITY

The San Diego Air Pollution Control District (SDAPCD) is responsible for enforcing the rules and regulations protecting air quality in the SDAB. Ambient air pollutant concentrations in the SDAB are measured at air quality monitoring stations operated by ARB and the SDAPCD. The closest SDAPCD air quality monitoring station to the project site is the Del Mar monitoring station, located at 225 9th Street, Del Mar, California, approximately 4 miles west of CCA. This station monitors ozone concentrations. Air quality monitoring data of NO_2 was obtained from the Rancho Carmel Drive monitoring station (the second-closest station), located at 11403 Rancho Carmel Drive, San Diego, California, approximately 7 miles east of CCA. $PM_{10,}$ and $PM_{2.5}$ were obtained from the Kearny Mesa station located at 6125A Kearny Villa Road, San Diego, California, approximately 9 miles southeast of CCA. Air quality monitoring data for CO were obtained from the SDAPCD Annual Air Quality Monitoring Network Plan (SDAPCD 2016a) and represent CO concentrations in San Diego County. Table 2 presents 3 years of the most recent information available, summarizing the exceedances of standards and the highest recorded pollutant. These concentrations represent the existing, or baseline conditions, for the project area, based on the most recent information that is available.

Table 2
Ambient Air Quality Summary

Pollutant Standards	2015	2016	2017
Ozone			
State maximum 1-hour concentration (ppm)	0.098	0.079	0.075
National maximum 8-hour concentration (ppm)	0.078	0.071	0.061
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	1	0	0
CAAQS 8- hour (>0.070 ppm)/NAAQS 8-hour(>0.070 ppm)	2/2	1/1	0/0
Carbon Monoxide (CO) [a]			
Maximum 8-hour concentration (ppm)	2.0	1.7	*
Maximum 1-hour concentration (ppm)	3.1	2.2	*
Number of Days Standard Exceeded			
NAAQS 8-hour (>9.0 ppm)	0	0	*
Nitrogen Dioxide (NO_2)			
State maximum 1-hour concentration (ppb)	55	62	62
Annual Average (ppb)	*	17	16
Number of Days Standard Exceeded			
NAAQS 1-hour	0	0	0
CAAQS 1-hour	0	0	0
Particulate Matter (PM_{10})			
National maximum 24-hour concentration ($\mu g/m^3$)	39.0	36.0	46.0
State maximum 24-hour concentration ($\mu g/m^3$)	37.0	35.0	47.0
State annual average concentration ($\mu g/m^3$)	16.7	*	17.6
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>150 $\mu g/m^3$)	0	0	0
CAAQS 24-hour (>50 $\mu g/m^3$)	0	0	0
Particulate Matter ($PM_{2.5}$)			
National maximum 24-hour concentration ($\mu g/m^3$)	25.7	19.4	27.5
State maximum 24-hour concentration ($\mu g/m^3$)	25.7	20.3	27.5
National annual average concentration ($\mu g/m^3$)	7.2	7.5	7.9
State annual average concentration ($\mu g/m^3$)	*	7.8	8.0
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>35 $\mu g/m^3$)	0	0	0

Notes: $\mu g/m^3$ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppb = parts per billion; ppm = parts per million
[a] Data obtained from the SDAPCD 2016 Monitoring Network Plan, Table 5.8: CO Concentrations for San Diego.
*Insufficient data to determine the value.
Source: ARB 2017a; SDAPCD 2016a

As shown in Table 2, ambient air concentrations of PM_{10} and NO_2 did not exceed the NAAQS or CAAQS in 2015 through 2017. The 8-hour ozone concentration was exceeded in 2015 and 2016. $PM_{2.5}$ concentrations did not exceed the NAAQS or the CAAQS between 2015 and 2017.

2.5 SDAB ATTAINMENT STATUS

Both EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. An "attainment" designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or redesignated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard.

In contrast to attainment, a "nonattainment" designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Finally, an unclassified designation indicates that insufficient data exist to determine attainment or nonattainment. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

As shown in Table 3, the SDAB currently meets the NAAQS for all criteria air pollutants except ozone and meets the CAAQS for all criteria air pollutants except ozone, PM_{10}, and $PM_{2.5}$. The SDAB currently falls under a federal maintenance plan for 8-hour ozone.

2.6 TOXIC AIR CONTAMINANTS

In addition to criteria pollutants, both federal and state air quality regulations also focus on toxic air contaminants (TACs). TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Table 3
San Diego Air Basin Attainment Designations

Pollutant	State	Federal
Ozone (1-hour)	Nonattainment	Attainment*
Ozone (8-hour)	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Unclassified/Attainment	Unclassified/Attainment
Sulfur Dioxide	Unclassified/Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A
Visibility Reducing Particles	Unclassified	N/A
Lead	Attainment	Unclassified/Attainment

Notes:
N/A = not applicable; no standard
PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter
* The federal ozone (1-hour) standard of 12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because this benchmark is addressed in State Implementation Plans.
Source: ARB 2017b; SDAPCD 2017.

TACs may be emitted by stationary, area, or mobile sources. Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to local air district permit requirements. The other, often more significant, sources of TAC emissions are motor vehicles on freeways, high-volume roadways, or other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of TAC emissions and include construction equipment, ships, and trains.

Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by ARB in 1998. Federal and state efforts to reduce diesel PM emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.

Diesel engines tend to produce a much higher ratio of fine particulates than other types of internal combustion engines. The fine particles that make up diesel PM tend to penetrate deep into the lungs and the rough surfaces of these particles makes it easy for them to bind with other toxins within the exhaust, thus increasing the hazards of particle inhalation. Long-term exposure to diesel PM is known to lead to chronic, serious health problems including cardiovascular disease, cardiopulmonary disease, and lung cancer.

SDAPCD samples for TACs at the El Cajon and Chula Vista monitoring stations. Excluding diesel PM, data from these stations indicate that the background cancer risk in 2014 due to TACs was 345 in one million in Chula Vista and 394 in one million in El Cajon. There is no current methodology for directly measuring diesel PM. However, ARB estimates the excess cancer risk from diesel PM in California in 2012 as 520 in a million (SDAPCD 2018).

2.7 ODOR

Odors are considered an air quality issue both at the local level (e.g., odor from wastewater treatment) and at the regional level (e.g., smoke from wildfires). Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and is subjective. Some individuals have the ability to smell minute quantities of specific substances while others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eyes, nose, and throat, which can reduce respiratory volume. Second, the ROGs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects, such as stress.

Several examples of common land use types that generate substantial odors include wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. There are no wastewater treatment plants, landfills, composting facilities, refineries, or chemical plants in the vicinity of the CCA campus.

2.8 SENSITIVE RECEPTORS

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. The City of San Diego CEQA Guidelines define a sensitive receptor as a person who is more susceptible to health effects due to exposure to an air contaminant relative to the population at large. Sensitive receptors include children, the elderly, people with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Air quality regulators typically define sensitive receptors as schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals who are particularly susceptible to health effects that would be adversely impacted by changes in air quality.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution because exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

Since installation of the lighting at the multi-sport field on the school campus would occur during the summer when school is not in session, the nearest sensitive receptors would be the multi-family residential units located approximately 440 feet west of the multi-sport field.

SECTION 3
GREENHOUSE GAS EMISSIONS BACKGROUND AND EXISTING CONDITIONS

3.1 SCIENTIFIC BASIS OF CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. This infrared radiation (i.e., thermal heat) is absorbed by GHGs within the earth's atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on the earth.

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels, waste treatment, and agricultural processes. The following are GHGs that are widely accepted as the principal contributors to human-induced global climate change:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)

The majority of anthropogenic CO_2 emissions are byproducts of fossil fuel combustion. CH_4 is the main component of natural gas and is associated with agricultural practices and landfills. N_2O is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 28, and N_2O, which has a GWP of 265

(EPA 2013). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). The concept of CO_2-equivalents (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

Although the exact lifetime of any particular GHG molecule is dependent on multiple variables, it is understood by scientists who study atmospheric chemistry that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. GHG emissions related to human activities have been determined as "extremely likely" to be responsible (indicating 95 percent certainty) for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate (ARB 2014). The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, no single project is expected to measurably contribute to a noticeable incremental change in the global average temperature, or to a global, local, or micro climate.

3.2 GHG INVENTORIES

GHG emissions contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, electric utility, residential, commercial, and agricultural categories. Emissions of CO_2 are byproducts of fossil fuel combustion and CH_4 is the primary component in natural gas and is associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management.

California

ARB performs an annual GHG inventory for emissions and sinks of the six major GHGs. California produced 429 million metric tons (MMT) CO_2e in 2016 (ARB 2018). Combustion of fossil fuel in the transportation category was the single largest source of California's GHG emissions in 2016, accounting for 41 percent of total GHG emissions in the state. The transportation category was followed by the industrial and electric power (including in-state and out-of-state sources) categories, which account for 23 and 16 percent of the state's total GHG emissions, respectively (ARB 2018).

County of San Diego

In February 2018, in conjunction with the County of San Diego Climate Action Plan, the County of San Diego published a GHG inventory for County operations and the activities occurring within the unincorporated communities of San Diego County. The GHG inventory includes a discussion of the primary sources and annual levels of GHG emissions for 2014 (baseline year) and describes likely trends if emissions are not reduced for 2020, 2030, and 2050. Total GHG emissions in San Diego County in 2014 were estimated to be 3.2 MMT CO_2e from the following sectors: transportation (on- and off-road), electricity, solid waste, natural gas, agriculture, water, wastewater, and propane (County of San Diego 2018). On-road transportation is the largest emissions sector, accounting for approximately 1.5 MMT CO2e, or 45 percent of total emissions. Energy consumption, including electricity and natural gas use, is the next largest source of emissions, accounting for approximately 1.1 MMT CO_2e, or 35 percent of the total.

City of San Diego

The most recent inventory completed by the City of San Diego was published in 2018 for the 2017 baseline year. The 2017 city-wide emissions were estimated to be approximately 10.2 MMT CO_2e (City of San Diego 2018). Transportation is the largest emissions sector, accounting for approximately 54 percent of the total emissions. Energy consumption, including electricity and natural gas use, is the next largest source of emissions, accounting for approximately 42 percent of the total.

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SECTION 4
ANALYSIS OF IMPACTS

4.1 AIR QUALITY THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the 2019 CEQA Guidelines, a project may have a significant impact to air quality if implementation of the project would:

Impact AQ-1: conflict with or obstruct implementation of the applicable air quality plan,

Impact AQ-2: result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard,

Impact AQ-3: expose sensitive receptors to substantial pollutant concentrations, or

Impact AQ-4: result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

As stated in Appendix G of the 2019 CEQA Guidelines, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the impact determinations for specific program elements. SDAPCD and the District have not developed quantitative significance thresholds for CEQA projects. However, the City of San Diego has established recommended screening level thresholds of significance for regional pollutant emissions. Therefore, the City of San Diego screening thresholds of significance for regional pollutant emissions were used to analyze the impacts of the proposed project. The screening level thresholds are shown in Table 4.

Table 4
Regional Pollutant Emission Screening Level Standards of Significance

	VOC[1]	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$[2]
Pounds per day	137	250	550	250	100	55

Notes:
[1] VOC standards based on levels per South Coast Air Quality Management District (SCAQMD) and the Monterey Bay Air Pollution Control District (MBAPCD), which have similar federal and state attainment status as San Diego.
[2] Standard for $PM_{2.5}$ from SCAQMD
VOC = volatile organic compounds; NO_X = oxides of nitrogen; SO_X = sulfur oxides, CO = carbon monoxide; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter.
Source: City of San Diego 2016

The City of San Diego screening level thresholds are based on SDAPCD Regulation II, Rule 20.2, Air Quality Impact Analysis Trigger Levels for new or modified stationary sources. Although these trigger levels do not generally apply to general land development projects, these levels may be used to evaluate the increased emissions from projects and to demonstrate that a project's emissions would not result in a significant impact to regional air quality and impede attainment of air quality standards for the region. Because regional air quality standards have been established for these criteria pollutants to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution, these trigger levels can also be used to assess project emissions and inform the project's impacts to regional air quality and health risks under CEQA.

4.2 GREENHOUSE GAS EMISSIONS THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the 2019 CEQA Guidelines, implementation of a project and its incremental contribution to global climate change would be considered significant if it would do either of the following:

Impact GHG-1: generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or

Impact GHG-2: conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

As stated in the CEQA Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, VII Greenhouse Gas Emissions). The CEQA Guidelines encourage but do not require lead agencies to adopt thresholds of significance (CEQA Guidelines, §15064.7). When developing these thresholds, and consistent with the December 2018 CEQA and Climate Change Advisory published by the California Office of Planning and Research (OPR 2018), the Guidelines allow lead agencies to develop their own significance threshold and/or to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence. Individual lead agencies may also undertake a case-by-case approach for the use of significance thresholds for projects consistent with available guidance and current CEQA practice (OPR 2018).

The District has not adopted a specific GHG threshold to analyze projects under CEQA. Therefore, to establish additional context in which to consider the proposed project's GHG emissions, this analysis reviewed guidelines used by other public agencies. Other districts, including the South Coast Air Quality Management District (SCAQMD), have recommended that GHG emissions from construction and short-term sources be amortized over the lifetime of the project (typically assumed 30 years) for comparison with significance thresholds (SCAQMD 2008). The draft thresholds released by the SCAQMD include possible thresholds of 3,000 metric tons (MT) CO_2e per year for all non-industrial projects (residential, commercial, and mixed-use projects). The most conservative threshold was included in the California Air Pollution Control Officers Association (CAPCOA) report, CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, which recommends a threshold of 900 MT CO_2e per year for any residential, commercial, or industrial project (CAPCOA 2008). These significance thresholds were developed to assess consistency of a project's emissions with the statewide framework for reducing GHG emissions. However, it is not the intent of the District to adopt this threshold as a mass emissions limit for this or other projects, but rather to provide this additional information to put the project-generated GHG emissions in the appropriate statewide context.

4.3 METHODOLOGY

Construction

Construction-related activities are temporary, short-term sources of emissions. Sources of construction-related criteria air pollutant and GHG emissions include construction equipment exhaust; construction-related trips by workers, delivery and hauling truck trips; and fugitive dust from site preparation activities.

Construction-related emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. CalEEMod allows the user to enter project-specific construction information, such as the construction schedule, the types and number of construction equipment, and the number and length of off-site motor vehicle trips. Construction of the proposed project is anticipated to begin in June 2019 and last approximately 6 to 8 weeks. Construction activities for installation of the lighting would include site preparation, minor excavation for the drill footing and underground trenching, and pole setting. Table 5 presents the construction phases and equipment assumptions associated with the proposed project.

Construction is anticipated to occur 5 days per week. The estimated construction workforce is a maximum of eight workers per day. The analysis also assumed minimal grading would be needed and a maximum of 50 cubic yards of earth would be transported. Approximately three truck trips would be necessary for material delivery and two concrete trucks would be necessary during construction of the light poles. Additional details are available in Attachment A.

Table 5
Construction Phasing and Construction Equipment Assumptions

Construction Phase	Duration	Construction Equipment		
		Type	Quantity	Hours per Day
Site Preparation	2 days	Air Compressor	1	8
		Generator Set	1	8
Grading/Excavation	12 days	Bore/Dill Rig	1	8
		Excavator	1	8
		Forklift	1	4
Installation	10 days	Crane	1	8
		Forklift	1	4
Adjustments[1]	3 days	Crane	1	8
		Forklift	1	4

[1] Adjustments phase conservatively assumes same construction equipment usage as the installation phase.
Source: Construction phasing and equipment provided by the District.

Operations

As described previously, the purpose of the proposed project is to construct lighting at the existing multi-sport field. Currently, due to the lack of lighting, games on the multi-sport field start early enough in the day so that the students are able to complete the entire game before sunset. Therefore, the District has decided to construct lighting at the multi-sport field to allow games to start between 15 to 30 minutes after school is released. As such, the proposed project would only delay existing games and it is not anticipated that implementation of the proposed project would increase visitor attendance at the games. Therefore, operational emissions associated with the proposed project would be limited to indirect GHG emissions associated with electricity consumption.

Based on information provided by the District, the analysis assumed lights would be on a maximum of 14.5 hours during a typical week. Lighting would only be turned on Monday through Friday during a typical week. During a typical week with season transition and playoffs, the analysis assumed lights would be on a maximum of 22.5 hours. Lighting would be turned on Monday through Saturday during season transition and playoffs. Based on the District academic

calendar, it was assumed there are approximately 42 weeks in a school year, and 9 weeks out of the school year would be weeks with season transition and playoffs. Although use of the lighting during the summer when school is not in session would be limited to few events, the analysis also conservatively assumed that a typical summer week would have the lights on for the same amount of hours as a typical week during the school year (14.5 hours). The analysis assumed there are approximately 10 weeks of summer when school is not in session.

Based on information provided by Johnson Consulting Engineers, Inc., it is anticipated that the total load of the lighting system would be 79.10 kilowatts (Musco 2018). Given the anticipated duration that the lights would be on, annual electricity consumption would equate to approximately 61,382 kilowatt-hours per year. To determine the annual GHG emissions associated with operation of the lighting, the electricity consumption was then multiplied by the San Diego Gas & Electric (SDG&E) carbon intensity emission factor. The SDG&E carbon intensity emission factor was calculated based on SDG&E's 2017 Power Content Label and California electricity emission factors. Additional details are available in Attachment B.

4.4 AIR QUALITY IMPACTS

4.4.1 Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan?

Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain NAAQS and CAAQS (shown in Table 1) into compliance with those standards pursuant to the requirements of the Clean Air Act and California Clean Air Act. As shown in Table 3, the SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. The SDAB currently meets the NAAQS for all criteria air pollutants except ozone and is unclassifiable for PM_{10}.

Nonattainment areas must submit a State Implementation Plan (SIP) outlining the combination of local, state, and federal strategies aimed at bringing the area into attainment. To address this requirement, the SDAPCD updated its Attainment Plan for the 2008 Eight-Hour Ozone Standard (Attainment Plan) and Regional Air Quality Strategy (RAQS) in 2016 (SDAPCD 2016b). A project's consistency with the RAQS and Attainment Plan is based on whether the project would exceed the estimated air basin emissions, which are based in part on equipment use assumptions, projections of population, and vehicle miles traveled (VMT). For instance, an increase in VMT

beyond projections in such plans could result in a significant adverse incremental effect on a region's ability to attain or maintain ambient air quality standards.

The proposed project would involve minimal construction activities and would be short term and temporary. The use of construction equipment in the RAQS is estimated for the region on an annual basis, and due to the minor construction activities and short duration of construction, the proposed project would not increase the assumptions for off-road equipment use. As discussed previously, the proposed project would construct lighting at the multi-sports field of the existing school and would not increase visitor attendance at the sports games. Thus, the proposed project would not increase population, employment, or vehicle trips over the current assumptions used to develop the RAQS and SIP. Therefore, implementation of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan and this impact would be less than significant.

4.4.2 Impact AQ-2: Result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SDAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

Construction of the proposed project would generate temporary emissions of VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Emissions of VOC, NO_X, CO, and SO_X are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive dust emissions (PM_{10} and $PM_{2.5}$) are associated primarily with site preparation and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles.

As shown in Table 6, construction activities for the proposed project would generate maximum daily emissions of approximately 1 pound of VOC, 8 pounds of NO_X, 7 pounds of CO, less than 1 pound of SO_X, 0.5 pound of PM_{10}, and 0.4 pound of $PM_{2.5}$. Additional modeling assumptions and details are provided in Attachment A.

Table 6
Unmitigated Daily Construction Emissions

	VOC (lbs/day)	NO_X (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day) [1]	$PM_{2.5}$ (lbs/day)
Maximum Daily Emissions	0.87	8.01	6.65	0.02	0.53	0.43
Threshold of Significance	137	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

Notes: VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter; lbs/day = pound per day
Source: Estimated by AECOM in 2019

As shown in Table 6, maximum daily construction emissions of VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ would not exceed the recommended thresholds of significance. These thresholds are designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards. Projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria air pollutant emissions to the region's emissions profile, and would not impede attainment and maintenance of ambient air quality standards. Therefore, construction activities associated with the revised project would not be cumulatively considerable. Maintenance-related and operational activities of the multi-sport field are not anticipated to increase above existing conditions with implementation of the proposed project. Therefore, this impact would be less than significant.

4.4.3 Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations?

As discussed in Section 2.8, the nearest sensitive receptors would be multi-family residential units approximately 440 feet west of the multi-sport field. As shown in Table 6, construction and installation of the lighting poles would result in emissions of criteria air pollutants, but at levels that would not exceed the City of San Diego thresholds of significance. The thresholds of significance were designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards, which were established using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. As such, the construction-related criteria air pollutant emissions associated with the proposed project would not expose sensitive receptors to substantial pollutant concentrations.

In addition to criteria air pollutants, construction of the proposed project would also generate TAC emissions, specifically diesel PM, associated with heavy-duty construction equipment operations. The Office of Environmental Health Hazard Assessment (OEHHA) developed a Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015). Due to uncertainty in assessing cancer risk from very short-term exposures, OEHHA does not recommend assessing cancer risk for construction of projects lasting less than 2 months for the nearest residential receptor. Since the duration of construction activities for the proposed project is anticipated to last approximately 6 to 8 weeks and would cease following completion of the project, the overall exposure period would not meet the requirements for assessing cancer risk (OEHHA 2015). In addition, construction emissions would occur intermittently throughout the day and would not occur as a constant plume of emissions from the project site.

Based on the anticipated construction schedule and the highly dispersive nature of diesel PM emissions, construction of the proposed project would not expose sensitive receptors to substantial TAC concentrations. Further, maintenance-related and operational activities of the multi-sport field are not anticipated to increase above existing conditions with implementation of the proposed project. In addition, educational land uses are not typically substantial sources of TACs. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be less than significant.

4.4.4 Impact AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The occurrence and severity of odor impacts depend on numerous factors: the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, and they can generate citizen complaints to local governments and regulatory agencies.

Potential construction-related sources of odors include diesel construction equipment that emit exhaust. However, because of the amount and types of equipment, the temporary nature of these emissions, and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by diesel exhaust odors associated with construction of the proposed project. Construction activities associated with the proposed project would be minimal and the odors would be typical of most construction sites and temporary in nature. Operation of the proposed project would remain similar to existing conditions and would not add any new odor sources. As a result, the proposed project would not result in other emissions (such as those leading to odors)

adversely affecting a substantial number of people. Therefore, this impact would be less than significant.

4.5 GREENHOUSE GAS EMISSIONS IMPACTS

4.5.1 Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Heavy-duty off-road equipment, materials transport, and worker commutes during construction of the proposed project would result in exhaust-related GHG emissions. The total CO_2e emissions associated with construction of the proposed project would be approximately 14 MT CO_2e.

Since the proposed project is not anticipated to increase visitor attendance and maintenance-related activities would remain similar to existing conditions, operational emissions associated with the proposed project would be limited to indirect GHG emissions associated with energy consumption of the light fixtures. Table 7 summarizes the operational emissions and amortized construction GHG emissions associated with the proposed project. Additional details are available in Attachments A and B.

Table 7
Annual GHG Emissions

Source	GHG Emissions (MT CO_2e)
Total Construction Emissions	14.29
Amortized Construction Emissions[1]	0.48
Operational Emissions	16.43
Total Annual GHG Emissions[2]	**16.91**

MT CO_2e = metric tons carbon dioxide equivalents
Notes: MT CO_2e = metric tons carbon dioxide equivalents
[1]Amortized emissions estimated assuming a 30-year lifetime of the project (14 MT CO_2e divided by 30 years).
[2] Total may not add due to rounding.
Source: Estimated by AECOM in 2019.

As shown in Table 7, the total construction-related and operational CO_2e emissions of 17 MT CO_2e associated with the proposed project would be substantially less than any of the proposed or adopted GHG thresholds discussed in Section 4.2 (CAPCOA annual threshold of 900 MT CO_2e and SCAQMD annual threshold of 3,000 MT CO_2e). Since these thresholds were developed to allow projects to demonstrate consistency with the statewide framework for

reducing GHG emissions, the proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, impacts related to GHG emissions would be less than significant.

4.5.2 Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Executive Order S-3-05, signed by former Governor Arnold Schwarzenegger on June 1, 2005, included a goal to reduce California's GHG emissions to year 2000 levels by 2010, 1990 levels by 2020, and 80 percent below the 1990 levels by the year 2050. In 2006, this goal was reinforced with the passage of Assembly Bill (AB 32), the Global Warming Solutions Act (California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. It requires that statewide GHG emissions be reduced to 1990 levels by 2020. In December 2008, the ARB adopted its Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (ARB 2008).

In 2008 and 2014, ARB approved the Scoping Plan and the first update to the Scoping Plan, respectively (ARB 2008, 2014). In 2016, the State Legislature passed Senate Bill (SB) 32, which established a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In response to SB 32 and the companion legislation of AB 197, ARB approved the Final Proposed 2017 Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target in November 2017 (ARB 2017c). The 2017 Scoping Plan draws from the previous plans to present strategies to reaching California's 2030 GHG reduction target. While the Scoping Plan updates do include measures that would indirectly address GHG emissions associated with construction and operational activities, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and enhanced energy efficiency, successful implementation of these measures predominantly depends on the development of laws and policies at the state level. As such, none of these statewide plans or policies constitute a regulation to adopt or implement a regional or local plan for reduction or mitigation of GHG emissions. Thus, it is assumed that any requirements or policies formulated under the mandate of AB 32 and SB 32 that would be applicable to the project, either directly or indirectly, would be implemented consistent with statewide policies and laws.

The District has not adopted a plan, policy, or regulation for the purpose of reducing GHG emissions. As such, the proposed project would not conflict with the AB 32 Scoping Plan and

Scoping Plan update; or any other plans, policies, or regulations for the purpose of reducing GHG emissions. As discussed in Section 4.5.1, the proposed project would also not generate GHG emissions that would have a significant impact on the environment. Further, as an effort to meet the goals of AB 32 to reduce statewide GHG emissions, the California Building Standards Code established the California Green Building Standards Code (*CALGreen*). *CALGreen* encourages sustainable construction practices and building design in the categories of planning and design, including energy efficiency. The proposed project would install light fixtures equipped with LED lights. LED is a highly energy-efficient lighting technology that consumes less electricity, and indirectly emits less GHG emissions, than incandescent lighting (DOE 2019). Therefore, based on the quantitative emission estimates and because the proposed project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions, this impact would be less than significant.

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SECTION 5
REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA & Climate Change. Available at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf. Accessed February 2019.

California Air Resources Board (ARB). 2008. Climate Change Scoping Plan. Available at https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed February 2019.

———. 2014. First Update to the Climate Change Scoping Plan: Building on the Framework. Pursuant to AB 32, the California Global Warming Solutions Act of 2006. Available at https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed January 2019.

———. 2016a. Ambient Air Quality Standards. Available at https://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed January 2019.

———. 2017a. Air Quality Data Statistics. Available at https://arb.ca.gov/adam. Accessed January 2019.

———. 2017b. Area Designation Maps/State and National. Available at http://www.arb.ca.gov/desig/desig.htm. Accessed January 2019.

———. 2017c. California's 2017 Climate Change Scoping Plan. Available at https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed January 2019.

———. 2018. California Greenhouse Gas Inventory for 2000–2016. Available at https://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed January 2019.

City of San Diego. 2016. California Environmental Quality Act. Significance Determination Thresholds. Available at http://www.sandiego.gov/development-services/pdf/news/sdtceqa.pdf. Accessed January 2019.

———. 2018. 2018 Annual Report: Climate Action Plan. Available at https://www.sandiego.gov/sites/default/files/city_of_san_diego_2018_cap_annual_report.pdf. Accessed January 2019.

County of San Diego. 2018. Climate Action Plan. Available at https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/cap/publicreviewdocuments/PostBOSDocs/San%20Diego%20County%20Final%20CAP.pdf. Accessed January 2019.

Department of Energy (DOE). 2019. LED Lighting. Available at https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting. Accessed February 2019.

———. 2016. Six Common Pollutants, Particulate Matter. Available at https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Accessed January 2019.

Musco Sports Lighting, LLC (Musco). 2018. Canyon Crest Academy. Engineered Design: November 13, 2018.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Hot Spots Guidance Manual. Available at http://www.oehha.org/air/hot_spots/ hotspots2015.html. Accessed February 2019.

Office of Planning and Research (OPR). 2018. CEQA and Climate Change Advisory. Available at http://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf. Accessed February 2019.

San Diego County Air Pollution Control District (SDAPCD). 2016a. Annual Air Quality Monitoring Network Plan. Available at http://www.sdapcd.org/content/dam/sdc/apcd/monitoring/2016_Network_Plan.pdf. Accessed January 2019.

———. 2016b. 2016 Revision of the Regional Air Quality Strategy for San Diego County. Available at https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2016%20RAQS.pdf. Accessed January 2019.

———. 2017. Attainment Status. Available at https://www.sdapcd.org/content/sdc/apcd/en/air-quality-planning/attainment-status.html. Accessed January 2019.

———. 2018. California Air Toxics "Hot Spots" Information and Assessment Act. Available at https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Toxics_Program/AttA-2016%20THS%20Program%20Rpt.pdf. Accessed January 2019.

South Coast Air Quality Management District (SCAQMD). 2008. Interim CEQA GHG Significance Threshold. Available at http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed February 2019.

U.S. Environmental Protection Agency (EPA).2013. Climate Change 2013: The Physical Science Basis. Available at http://www.ipcc.ch/report/ar5/wg1/. Accessed January 2019.

Western Regional Climate Center (WRCC). 2016. Period of Record Monthly Climate Summary. Poway Valley, California. Available at https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7111. Accessed January 2019.

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ATTACHMENT A

CONSTRUCTION EMISSION ESTIMATES

Canyon Crest Academy Lighting Project

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Educational	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Canyon Crest Academy Lighting Project - San Diego County, Winter

Project Characteristics -

Land Use - User defined educational land use to account for installation of 4 stadium lighting poles. Approximate acreage for installation of poles (CIP diameter 48 inch). No building square footage.

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific construction info per data request.

Off-road Equipment - Project specific construction info per data request.

Off-road Equipment - Phase modeled separately for concrete truck and material delivery trips, to overlap with installation phase.

Off-road Equipment - Project specific construction info per data request.

Off-road Equipment - Conservatively assumes same construction equipment as installation for adjustments

Grading - Approximately 50 cy anticipated to be excavated.

Trips and VMT - Based on maximum daily of 8 workers per day. Assumes each 16 CY capacity haul truck load. Vendor trips include 3 material truck trips and 2 concrete truck trips.

Vehicle Trips - No additional daily trips with installation of stadium lighting poles.

Energy Use - Energy consumption calculated off-model.

Stationary Sources - Emergency Generators and Fire Pumps - No stationary equipment.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	11.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	3.00
tblConstructionPhase	PhaseEndDate	7/7/2019	7/29/2019
tblConstructionPhase	PhaseEndDate	7/7/2019	7/9/2019
tblConstructionPhase	PhaseStartDate	7/8/2019	7/15/2019
tblGrading	MaterialExported	0.00	50.00
tblLandUse	LotAcreage	0.00	1.0000e-003
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors

tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	0.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	8.00	16.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.8703	8.0113	6.6460	0.0170	0.1991	0.3985	0.5299	0.0544	0.3984	0.4333	0.0000	1,691.1651	1,691.1651	0.4876	0.0000	1,703.3545
Maximum	**0.8703**	**8.0113**	**6.6460**	**0.0170**	**0.1991**	**0.3985**	**0.5299**	**0.0544**	**0.3984**	**0.4333**	**0.0000**	**1,691.1651**	**1,691.1651**	**0.4876**	**0.0000**	**1,703.3545**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.8703	8.0113	6.6460	0.0170	0.1991	0.3985	0.5299	0.0544	0.3984	0.4333	0.0000	1,691.1651	1,691.1651	0.4876	0.0000	1,703.3545
Maximum	**0.8703**	**8.0113**	**6.6460**	**0.0170**	**0.1991**	**0.3985**	**0.5299**	**0.0544**	**0.3984**	**0.4333**	**0.0000**	**1,691.1651**	**1,691.1651**	**0.4876**	**0.0000**	**1,703.3545**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/8/2019	7/9/2019	5	2	
2	Excavation	Grading	7/15/2019	7/29/2019	5	11	
3	Set Poles	Building Construction	7/30/2019	7/30/2019	5	1	
4	Installation	Building Construction	7/30/2019	8/12/2019	5	10	
5	Adjustments	Building Construction	8/13/2019	8/15/2019	5	3	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Canyon Crest Academy Lighting Project - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Set Poles	Cranes	0	0.00	231	0.29
Installation	Cranes	1	8.00	231	0.29
Adjustments	Cranes	1	8.00	231	0.29
Excavation	Concrete/Industrial Saws	0	0.00	81	0.73
Set Poles	Forklifts	0	0.00	89	0.20
Installation	Forklifts	1	4.00	89	0.20
Site Preparation	Graders	0	0.00	187	0.41
Adjustments	Forklifts	1	4.00	89	0.20
Set Poles	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Installation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Excavation	Rubber Tired Dozers	0	0.00	247	0.40
Adjustments	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Air Compressors	1	8.00	78	0.48
Excavation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Excavation	Bore/Drill Rigs	1	8.00	221	0.50
Excavation	Excavators	1	8.00	158	0.38
Excavation	Forklifts	1	4.00	89	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Set Poles	0	0.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	16.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Installation	2	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Adjustments	2	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7993	6.2251	6.1782	0.0105		0.3975	0.3975		0.3975	0.3975		998.2986	998.2986	0.0712		1,000.0777
Total	**0.7993**	**6.2251**	**6.1782**	**0.0105**	**0.0000**	**0.3975**	**0.3975**	**0.0000**	**0.3975**	**0.3975**		**998.2986**	**998.2986**	**0.0712**		**1,000.0777**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0711**	**0.0492**	**0.4678**	**1.3100e-003**	**0.1314**	**9.4000e-004**	**0.1324**	**0.0349**	**8.6000e-004**	**0.0357**		**130.7062**	**130.7062**	**4.2200e-003**		**130.8116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7993	6.2251	6.1782	0.0105		0.3975	0.3975		0.3975	0.3975	0.0000	998.2986	998.2986	0.0712		1,000.0777
Total	**0.7993**	**6.2251**	**6.1782**	**0.0105**	**0.0000**	**0.3975**	**0.3975**	**0.0000**	**0.3975**	**0.3975**	**0.0000**	**998.2986**	**998.2986**	**0.0712**		**1,000.0777**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0711**	**0.0492**	**0.4678**	**1.3100e-003**	**0.1314**	**9.4000e-004**	**0.1324**	**0.0349**	**8.6000e-004**	**0.0357**		**130.7062**	**130.7062**	**4.2200e-003**		**130.8116**

3.3 Excavation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4000e-004	0.0000	6.4000e-004	1.0000e-004	0.0000	1.0000e-004			0.0000			0.0000
Off-Road	0.6201	7.0878	5.9273	0.0153		0.2894	0.2894		0.2662	0.2662		1,514.0457	1,514.0457	0.4790		1,526.0214
Total	**0.6201**	**7.0878**	**5.9273**	**0.0153**	**6.4000e-004**	**0.2894**	**0.2900**	**1.0000e-004**	**0.2662**	**0.2663**		**1,514.0457**	**1,514.0457**	**0.4790**		**1,526.0214**

3.3 Excavation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8700e-003	0.1655	0.0379	4.3000e-004	9.5300e-003	6.3000e-004	0.0102	2.6100e-003	6.1000e-004	3.2200e-003		46.4132	46.4132	4.3300e-003		46.5214
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0759**	**0.2148**	**0.5057**	**1.7400e-003**	**0.1410**	**1.5700e-003**	**0.1425**	**0.0375**	**1.4700e-003**	**0.0390**		**177.1194**	**177.1194**	**8.5500e-003**		**177.3331**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4000e-004	0.0000	6.4000e-004	1.0000e-004	0.0000	1.0000e-004			0.0000			0.0000
Off-Road	0.6201	7.0878	5.9273	0.0153		0.2894	0.2894		0.2662	0.2662	0.0000	1,514.0457	1,514.0457	0.4790		1,526.0214
Total	**0.6201**	**7.0878**	**5.9273**	**0.0153**	**6.4000e-004**	**0.2894**	**0.2900**	**1.0000e-004**	**0.2662**	**0.2663**	**0.0000**	**1,514.0457**	**1,514.0457**	**0.4790**		**1,526.0214**

3.3 Excavation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8700e-003	0.1655	0.0379	4.3000e-004	9.5300e-003	6.3000e-004	0.0102	2.6100e-003	6.1000e-004	3.2200e-003		46.4132	46.4132	4.3300e-003		46.5214
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0759**	**0.2148**	**0.5057**	**1.7400e-003**	**0.1410**	**1.5700e-003**	**0.1425**	**0.0375**	**1.4700e-003**	**0.0390**		**177.1194**	**177.1194**	**8.5500e-003**		**177.3331**

3.4 Set Poles - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Set Poles - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0480	1.2409	0.3549	2.6900e-003	0.0677	8.7800e-003	0.0765	0.0195	8.4000e-003	0.0279		288.5003	288.5003	0.0243		289.1081
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0480**	**1.2409**	**0.3549**	**2.6900e-003**	**0.0677**	**8.7800e-003**	**0.0765**	**0.0195**	**8.4000e-003**	**0.0279**		**288.5003**	**288.5003**	**0.0243**		**289.1081**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Set Poles - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0480	1.2409	0.3549	2.6900e-003	0.0677	8.7800e-003	0.0765	0.0195	8.4000e-003	0.0279		288.5003	288.5003	0.0243		289.1081
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0480**	**1.2409**	**0.3549**	**2.6900e-003**	**0.0677**	**8.7800e-003**	**0.0765**	**0.0195**	**8.4000e-003**	**0.0279**		**288.5003**	**288.5003**	**0.0243**		**289.1081**

3.5 Installation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5840	6.7212	2.8901	6.5300e-003		0.3100	0.3100		0.2852	0.2852		646.8708	646.8708	0.2047		651.9874
Total	**0.5840**	**6.7212**	**2.8901**	**6.5300e-003**		**0.3100**	**0.3100**		**0.2852**	**0.2852**		**646.8708**	**646.8708**	**0.2047**		**651.9874**

3.5 Installation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0711**	**0.0492**	**0.4678**	**1.3100e-003**	**0.1314**	**9.4000e-004**	**0.1324**	**0.0349**	**8.6000e-004**	**0.0357**		**130.7062**	**130.7062**	**4.2200e-003**		**130.8116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5840	6.7212	2.8901	6.5300e-003		0.3100	0.3100		0.2852	0.2852	0.0000	646.8708	646.8708	0.2047		651.9874
Total	**0.5840**	**6.7212**	**2.8901**	**6.5300e-003**		**0.3100**	**0.3100**		**0.2852**	**0.2852**	**0.0000**	**646.8708**	**646.8708**	**0.2047**		**651.9874**

3.5 Installation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0711**	**0.0492**	**0.4678**	**1.3100e-003**	**0.1314**	**9.4000e-004**	**0.1324**	**0.0349**	**8.6000e-004**	**0.0357**		**130.7062**	**130.7062**	**4.2200e-003**		**130.8116**

3.6 Adjustments - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5840	6.7212	2.8901	6.5300e-003		0.3100	0.3100		0.2852	0.2852		646.8708	646.8708	0.2047		651.9874
Total	**0.5840**	**6.7212**	**2.8901**	**6.5300e-003**		**0.3100**	**0.3100**		**0.2852**	**0.2852**		**646.8708**	**646.8708**	**0.2047**		**651.9874**

3.6 Adjustments - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0711**	**0.0492**	**0.4678**	**1.3100e-003**	**0.1314**	**9.4000e-004**	**0.1324**	**0.0349**	**8.6000e-004**	**0.0357**		**130.7062**	**130.7062**	**4.2200e-003**		**130.8116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5840	6.7212	2.8901	6.5300e-003		0.3100	0.3100		0.2852	0.2852	0.0000	646.8708	646.8708	0.2047		651.9874
Total	**0.5840**	**6.7212**	**2.8901**	**6.5300e-003**		**0.3100**	**0.3100**		**0.2852**	**0.2852**	**0.0000**	**646.8708**	**646.8708**	**0.2047**		**651.9874**

3.6 Adjustments - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0492	0.4678	1.3100e-003	0.1314	9.4000e-004	0.1324	0.0349	8.6000e-004	0.0357		130.7062	130.7062	4.2200e-003		130.8116
Total	**0.0711**	**0.0492**	**0.4678**	**1.3100e-003**	**0.1314**	**9.4000e-004**	**0.1324**	**0.0349**	**8.6000e-004**	**0.0357**		**130.7062**	**130.7062**	**4.2200e-003**		**130.8116**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Educational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Educational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Educational	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Canyon Crest Academy Lighting Project

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Educational	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Canyon Crest Academy Lighting Project - San Diego County, Annual

Project Characteristics -

Land Use - User defined educational land use to account for installation of 4 stadium lighting poles. Approximate acreage for installation of poles (CIP diameter 48 inch). No building square footage.

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific construction info per data request.

Off-road Equipment - Project specific construction info per data request.

Off-road Equipment - Phase modeled separately for concrete truck and material delivery trips, to overlap with installation phase.

Off-road Equipment - Project specific construction info per data request.

Off-road Equipment - Conservatively assumes same construction equipment as installation for adjustments

Grading - Approximately 50 cy anticipated to be excavated.

Trips and VMT - Based on maximum daily of 8 workers per day. Assumes each 16 CY capacity haul truck load. Vendor trips include 3 material truck trips and 2 concrete truck trips.

Vehicle Trips - No additional daily trips with installation of stadium lighting poles.

Energy Use - Energy consumption calculated off-model.

Stationary Sources - Emergency Generators and Fire Pumps - No stationary equipment.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	11.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	3.00
tblConstructionPhase	PhaseEndDate	7/7/2019	7/29/2019
tblConstructionPhase	PhaseEndDate	7/7/2019	7/9/2019
tblConstructionPhase	PhaseStartDate	7/8/2019	7/15/2019
tblGrading	MaterialExported	0.00	50.00
tblLandUse	LotAcreage	0.00	1.0000e-003
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors

Canyon Crest Academy Lighting Project - San Diego County, Annual

tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	0.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	8.00	16.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	8.8800e-003	0.0911	0.0640	1.6000e-004	1.7600e-003	4.0200e-003	5.7800e-003	4.7000e-004	3.7300e-003	4.2000e-003	0.0000	14.1980	14.1980	3.7400e-003	0.0000	14.2916
Maximum	**8.8800e-003**	**0.0911**	**0.0640**	**1.6000e-004**	**1.7600e-003**	**4.0200e-003**	**5.7800e-003**	**4.7000e-004**	**3.7300e-003**	**4.2000e-003**	**0.0000**	**14.1980**	**14.1980**	**3.7400e-003**	**0.0000**	**14.2916**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	8.8800e-003	0.0911	0.0640	1.6000e-004	1.7600e-003	4.0200e-003	5.7800e-003	4.7000e-004	3.7300e-003	4.2000e-003	0.0000	14.1980	14.1980	3.7400e-003	0.0000	14.2916
Maximum	**8.8800e-003**	**0.0911**	**0.0640**	**1.6000e-004**	**1.7600e-003**	**4.0200e-003**	**5.7800e-003**	**4.7000e-004**	**3.7300e-003**	**4.2000e-003**	**0.0000**	**14.1980**	**14.1980**	**3.7400e-003**	**0.0000**	**14.2916**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-8-2019	9-30-2019	0.0933	0.0933
		Highest	0.0933	0.0933

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/8/2019	7/9/2019	5	2	
2	Excavation	Grading	7/15/2019	7/29/2019	5	11	
3	Set Poles	Building Construction	7/30/2019	7/30/2019	5	1	
4	Installation	Building Construction	7/30/2019	8/12/2019	5	10	
5	Adjustments	Building Construction	8/13/2019	8/15/2019	5	3	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Set Poles	Cranes	0	0.00	231	0.29
Installation	Cranes	1	8.00	231	0.29
Adjustments	Cranes	1	8.00	231	0.29
Excavation	Concrete/Industrial Saws	0	0.00	81	0.73
Set Poles	Forklifts	0	0.00	89	0.20
Installation	Forklifts	1	4.00	89	0.20
Site Preparation	Graders	0	0.00	187	0.41
Adjustments	Forklifts	1	4.00	89	0.20
Set Poles	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Installation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Excavation	Rubber Tired Dozers	0	0.00	247	0.40
Adjustments	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Air Compressors	1	8.00	78	0.48
Excavation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Excavation	Bore/Drill Rigs	1	8.00	221	0.50
Excavation	Excavators	1	8.00	158	0.38
Excavation	Forklifts	1	4.00	89	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Set Poles	0	0.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	16.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Installation	2	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Adjustments	2	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	6.2300e-003	6.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	0.9056	0.9056	6.0000e-005	0.0000	0.9073
Total	**8.0000e-004**	**6.2300e-003**	**6.1800e-003**	**1.0000e-005**	**0.0000**	**4.0000e-004**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**4.0000e-004**	**0.0000**	**0.9056**	**0.9056**	**6.0000e-005**	**0.0000**	**0.9073**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1198	0.1198	0.0000	0.0000	0.1199
Total	**6.0000e-005**	**5.0000e-005**	**4.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1198**	**0.1198**	**0.0000**	**0.0000**	**0.1199**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	6.2300e-003	6.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	0.9056	0.9056	6.0000e-005	0.0000	0.9073
Total	**8.0000e-004**	**6.2300e-003**	**6.1800e-003**	**1.0000e-005**	**0.0000**	**4.0000e-004**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**4.0000e-004**	**0.0000**	**0.9056**	**0.9056**	**6.0000e-005**	**0.0000**	**0.9073**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1198	0.1198	0.0000	0.0000	0.1199
Total	**6.0000e-005**	**5.0000e-005**	**4.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1198**	**0.1198**	**0.0000**	**0.0000**	**0.1199**

3.3 Excavation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4100e-003	0.0390	0.0326	8.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	7.5544	7.5544	2.3900e-003	0.0000	7.6141
Total	**3.4100e-003**	**0.0390**	**0.0326**	**8.0000e-005**	**0.0000**	**1.5900e-003**	**1.5900e-003**	**0.0000**	**1.4600e-003**	**1.4600e-003**	**0.0000**	**7.5544**	**7.5544**	**2.3900e-003**	**0.0000**	**7.6141**

3.3 Excavation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	9.2000e-004	2.0000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.2339	0.2339	2.0000e-005	0.0000	0.2344
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.7000e-004	2.5700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6587	0.6587	2.0000e-005	0.0000	0.6592
Total	**3.8000e-004**	**1.1900e-003**	**2.7700e-003**	**1.0000e-005**	**7.6000e-004**	**1.0000e-005**	**7.6000e-004**	**2.0000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.8926**	**0.8926**	**4.0000e-005**	**0.0000**	**0.8936**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4100e-003	0.0390	0.0326	8.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	7.5544	7.5544	2.3900e-003	0.0000	7.6141
Total	**3.4100e-003**	**0.0390**	**0.0326**	**8.0000e-005**	**0.0000**	**1.5900e-003**	**1.5900e-003**	**0.0000**	**1.4600e-003**	**1.4600e-003**	**0.0000**	**7.5544**	**7.5544**	**2.3900e-003**	**0.0000**	**7.6141**

3.3 Excavation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	9.2000e-004	2.0000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.2339	0.2339	2.0000e-005	0.0000	0.2344
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.7000e-004	2.5700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6587	0.6587	2.0000e-005	0.0000	0.6592
Total	**3.8000e-004**	**1.1900e-003**	**2.7700e-003**	**1.0000e-005**	**7.6000e-004**	**1.0000e-005**	**7.6000e-004**	**2.0000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.8926**	**0.8926**	**4.0000e-005**	**0.0000**	**0.8936**

3.4 Set Poles - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Set Poles - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.3000e-004	1.7000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1331
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0000e-005**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.1328**	**0.1328**	**1.0000e-005**	**0.0000**	**0.1331**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Set Poles - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.3000e-004	1.7000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1331
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0000e-005**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.1328**	**0.1328**	**1.0000e-005**	**0.0000**	**0.1331**

3.5 Installation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9200e-003	0.0336	0.0145	3.0000e-005		1.5500e-003	1.5500e-003		1.4300e-003	1.4300e-003	0.0000	2.9342	2.9342	9.3000e-004	0.0000	2.9574
Total	**2.9200e-003**	**0.0336**	**0.0145**	**3.0000e-005**		**1.5500e-003**	**1.5500e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**2.9342**	**2.9342**	**9.3000e-004**	**0.0000**	**2.9574**

3.5 Installation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.4000e-004	2.3400e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5988	0.5988	2.0000e-005	0.0000	0.5993
Total	**3.2000e-004**	**2.4000e-004**	**2.3400e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5988**	**0.5988**	**2.0000e-005**	**0.0000**	**0.5993**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9200e-003	0.0336	0.0145	3.0000e-005		1.5500e-003	1.5500e-003		1.4300e-003	1.4300e-003	0.0000	2.9342	2.9342	9.3000e-004	0.0000	2.9574
Total	**2.9200e-003**	**0.0336**	**0.0145**	**3.0000e-005**		**1.5500e-003**	**1.5500e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**2.9342**	**2.9342**	**9.3000e-004**	**0.0000**	**2.9574**

3.5 Installation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.4000e-004	2.3400e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5988	0.5988	2.0000e-005	0.0000	0.5993
Total	**3.2000e-004**	**2.4000e-004**	**2.3400e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5988**	**0.5988**	**2.0000e-005**	**0.0000**	**0.5993**

3.6 Adjustments - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8000e-004	0.0101	4.3400e-003	1.0000e-005		4.6000e-004	4.6000e-004		4.3000e-004	4.3000e-004	0.0000	0.8803	0.8803	2.8000e-004	0.0000	0.8872
Total	**8.8000e-004**	**0.0101**	**4.3400e-003**	**1.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.8803**	**0.8803**	**2.8000e-004**	**0.0000**	**0.8872**

3.6 Adjustments - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1796	0.1796	1.0000e-005	0.0000	0.1798
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1796**	**0.1796**	**1.0000e-005**	**0.0000**	**0.1798**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8000e-004	0.0101	4.3400e-003	1.0000e-005		4.6000e-004	4.6000e-004		4.3000e-004	4.3000e-004	0.0000	0.8803	0.8803	2.8000e-004	0.0000	0.8872
Total	**8.8000e-004**	**0.0101**	**4.3400e-003**	**1.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.8803**	**0.8803**	**2.8000e-004**	**0.0000**	**0.8872**

3.6 Adjustments - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1796	0.1796	1.0000e-005	0.0000	0.1798
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1796**	**0.1796**	**1.0000e-005**	**0.0000**	**0.1798**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Educational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Educational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Educational	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Educational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Educational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Educational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

OPERATIONAL EMISSION ESTIMATES

Canyon Crest Academy Lighting Project

Energy Consumption Emissions

Stadium Lighting Total Load	79.10 kW

Week	Maximum Hours per Week	Maximum Hours per Year	Energy Consumption (kWh)	GHG Emissions (MT CO_2e)	Total GHG Emissions Per Year
Typical Week	14.5	479	37,849.35	9.52	16.43
Typical Week with Season Transition and Playoffs	22.5	203	16,017.75	4.03	
Typical Week during Summer	14.5	145	11,469.50	2.88	

Notes & Assumptions:

Analysis assumes approximately	42	weeks in a school year
Analysis assumes approximately	9	weeks out of the school year would be a typical week with season transition and playoffs.
Analysis assumes approximately	10	weeks during summer

Typical week with season transition and playoffs assumes lights would be on an average of 17.5 to 22.5 hrs per week.
Typical week assumes lights would be on an average of 9.5 to 14.5 hrs per week.

Source: San Dieguito Union High School District Academic Calendar (Available at: https://www.sduhsd.net/documents/Department%20Listing/EdServices/District%20Instructional%20Calendar/2019-20%20Instructional%20Calendar-%20REVISED%2012-13-18.pdf) and hours of operation provided by San Dieguito Union High School District.

San Diego Gas & Electric Emission Factor Calculations

Emissions Factors	t/kWh	Share of Portfolio	t/kWh	t/MWh	lbs/MWh
Eligible Renewable Sources	-	44%	-		
Natural Gas	0.000459	39%	0.00017882		
Unspecified	0.000427	17%	0.00007267		
Total	-	100%	0.00025149	0.25148884	554.43732405

Source: SDG&E 2017 Power Content Label. Available: https://www.energy.ca.gov/pcl/labels/2017_labels/SDG_and_E_2017_PCL.pdf

Natural Gas Facility Emissions Factor Calculation

	CO_2	CH_4	N_2O	CO_2e
kg per mmBtu [1]	53.06	-	-	-
g per mmBtu [1]	53,060	1.00	0.10	-
t per mmBtu	0.05	0.00	0.00	-
t CO_2e per mmBtu	0.05	0.00	0.00	0.05
t CO_2e per GJ	-			0.06

Source: EPA Emission Factors (March 2018) Available: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf

Heat Rates

Value	Units
7,755	btu/kWh
0.00818196	GJ/kWh

Source: California Natural Gas-Fired Heat Rates (Table 1) Available: http://www.energy.ca.gov/2017publications/CEC-200-2017-003/CEC-200-2017-003.pdf

Natural Gas Facility Emissions Factor

Natural gas emissions factor	0.06	t CO_2e per GJ
Natural gas facility heat rate	0.00818196	GJ/kWh
Natural Gas Facility Emissions Factor	0.000458507	t CO_2e per kWh

Unspecified Electricity Source Emissions Factor Calculation

ARB California GHG Inventory Unspecified Electricity Emissions Factors

	CO_2	CH_4	N_2O	CO_2e	Units
Pacific Northwest (PNW)	427	0.008117	0.00094388	427.4774042	g/kWh
Pacific Southwest (PSW)	427	0.008117	0.00094388	427.4774042	g/kWh
PNW and PSW				0.000427477	t/kWh

Source: Annex 1B. Electricity Production - Imports. California's 2000-2014 GHG Emission Inventory Available: https://www.arb.ca.gov/cc/inventory/doc/methods_00-14/annex_1b_electricity_production_imports.pdf

Unspecified Emissions Factor

Unspecified Electricity Emissions Factor	0.000427	t CO_2e per kWh

Conversions

GJ	mmBtu
1	0.947817
g	kg
1	1,000
g	t
1	0.000001
lb	t
2204.62	1
kW	MW
1	0.001
GWP Factors	
CO_2	1
CH_4	28
N_2O	265

APPENDIX C

NOISE REPORT

AECOM
401 West A Street
Suite 1200
San Diego, CA 92101
aecom.com

Project name:
Canyon Crest Academy Stadium Lighting Project

To:
John Addleman
San Dieguito Union High School District
710 Encinitas Boulevard
Encinitas, CA 92024

From:
Christopher J. Kaiser, INCE

Date:
February 22, 2019

CC:
Meghan Haggblade, AECOM

Technical Memorandum

Subject: Canyon Crest Academy Stadium Lighting Noise Analysis

Introduction

The purpose of this noise analysis is to provide scientific and technical data regarding the existing noise environment and potential effects that may result from the Canyon Crest Academy Stadium Lighting Project (proposed project). The proposed project would install lighting fixtures at the multi-sport field on the school campus. The noise analysis will discuss the potential noise and vibration impacts resulting from construction and operations (e.g., noise sources associated with nighttime sporting events) at existing noise- and vibration-sensitive land uses in the vicinity of the proposed project.

Project Background

Canyon Crest Academy (CCA) offers 21 varsity sports programs including tennis, basketball, volleyball, field hockey, soccer, lacrosse, baseball, and softball. Outdoor courts and fields for these sports are located at the south and southeast portions of the CCA campus. Currently, the tennis courts are lit, but the field used for field hockey, soccer, and lacrosse (referred to as the “multi-sport field”), as well as the baseball and softball fields, do not feature lighting fixtures. Because of this, current use of the multi-sport field must start early enough in the afternoon to complete an entire game or practice by sunset. This results in students leaving their last class early to prepare for their sporting event. In response to concerns raised by parents of the students involved in these athletic programs, the San Dieguito Union High School District (District) has decided to construct lighting at the multi-sport field. The installation of this lighting will allow games to start between 15 to 30 minutes after school is released.

The illumination provided by the proposed project will result in varsity-level games beginning as late as 6:00 p.m. during a typical week, and as late as 7:00 p.m. during season transition and playoff periods.

Existing Conditions

CCA occupies roughly 51 acres in the Carmel Valley residential suburb of San Diego. The center of the multi-sport field is located approximately 660 feet northwest of State Route 56 (SR-56) edge of pavement, and roughly 3.2 miles east of Interstate 5. Noise- and vibration-sensitive land uses include several residential developments, San Diego Fire-Rescue Department Station 47, Pacific Trails Middle School, and the newly developed City of San Diego Pacific Highlands Ranch Community Park.

Assessment Methodology

To quantify the acoustical baseline conditions of the proposed project site and its vicinity, existing outdoor ambient sound levels were measured at a set of representative receptor locations in December 2018. The following were considered during selection of the measurement and representative receptor locations: the location of the proposed project site, the existing CCA campus vehicle ingress and egress routes, distance from existing noise sources, and distance from proposed project construction and operation noise and vibration sources.

Observed meteorological settings and other environmental conditions were also documented as part of this field measurement survey. The selected short-term (ST) measurement locations, as well as representative receiver (R) locations, are shown in Figure 1.

Map Data: Google, Imagery ©2019

Figure 1. Noise Study Area with Short-Term Measurement Locations and Studied Receptors

Acoustical Terminology

For purposes of document brevity, a summary of relevant fundamental concepts and an explanation of terms related to noise and vibration are presented in Attachment A. For an expanded introduction to noise fundamentals beyond what is presented in Attachment A, refer to an industry-accepted reference text such as Noise & Vibration Control Engineering (Beranek & Ver 1992).

Key acoustical terminology used in this technical memorandum is as follows:

- **CNEL**: Community Noise Equivalent Level, a 24-hour noise level metric
- **dB**: decibels; measurement of sound level magnitude
- **dBA**: decibels, A weighted
- **L_{dn}**: day-night average sound level
- **L_{eq}**: energy average sound level during a measured time interval
- **L_{max}/L_{min}**: root-mean-square of maximum and minimum sound levels, respectively, measured during a monitoring interval
- **L_{10},L_{50},L_{90}**: Measured noise levels exceeded 10, 50, and 90 percent of the time, respectively
- **PWL**: sound power level
- **SPL**: sound pressure level
- **PPV**: peak particle velocity, typically expressed in inches per second (in/sec)

Baseline Field Survey

Instrumentation

Measurements were conducted using two Larson Davis (LD) Model 820 (serial numbers [SNs] 1597 and 1528) and one LD Model LxT (SN 4485) sound level meters (SLMs), rated by the American National Standards Institute (ANSI) as Type 1 per IEC 61672-1:2013, ANSI S1.4, and ANSI S1.43. The SLM microphones were fitted with standard 3.5-inch-diameter, spherical-shaped, open-cell foam windscreens and positioned roughly 5 feet above grade and at least 10 feet from any vertical acoustically reflecting surfaces. The SLMs were set using slow time-response and an A-weighted decibel scale. SLM calibration was field-checked before and after each measurement period with an LD Model CAL200 (SNs 5768 and 12226) acoustic calibrator. Where not already described, sound level measurements performed for this field survey were conducted in accordance with applicable portions of International Organization for Standardization (ISO) 1996-1, 1996-2, and 1996-3 (ISO 1982, 1987a, 1987b) standards.

A Kestrel Model 3500 (SN 2058303) handheld weather meter was used to determine average wind speed, temperature, barometric pressure, and relative humidity before each community measurement. Field data sheets, including meteorological observations, are included in Attachment B.

Monitored Locations

A total of two ST measurements were conducted during the afternoon and evening of December 19, 2018, with an additional ST measurement conducted during the evening of February 13, 2019. Measurements were either attended or regularly visited by the field investigator so that noteworthy observations regarding perceived sound-producing events, processes, or activities (both natural and man-made) could be documented and, thus, help explain concurrent variances in the measured SPL. Observations and investigator notes were made on field data sheets, included as Attachment B.

ST-1 was located atop a vegetated slope that bounds the western perimeter southernmost parking lot of the CCA campus. The slope descends westward toward the abutting property line with the “Avino” multi-family residential development, which features two-story construction including balconies at most second-floor unit areas. The elevation of ST-1 was approximately 8 to 10 feet above the grade of first-story receptors at the foot of the slope. Although first-story receptors benefit from the acoustical shielding provided by their grade separation from the parking lot and multi-sport field activities, the elevation of second-story balconies maintain a direct line-of-sight to the subject parking lot but not to the multi-sport field.

ST-2 was located northeast of the CCA campus adjacent to a common-use sidewalk on the southwestern boundary of the "Airoso" residential development. This location is separated from the CCA campus boundary by the newly constructed Pacific Highlands Ranch Community Park and Pacific Trails Middle School, but is located at an elevation that affords a line-of-sight, albeit distant, to the multi-sport field vicinity.

ST-3 was west of the CCA campus adjacent to a common-use sidewalk on the southern boundary of the "Avino" multi-family residential development. Although representing similar receptors as ST-1, this measurement location was added to the baseline ambient noise survey to capture existing traffic noise levels from vehicles on Edgewood Bend Court, Carmel Valley Road, and SR-56 that are more prominent on the south side of the residential development.

Baseline Field Survey Results

ST SPL measurements were conducted during the afternoon and evening (4 p.m. to 9 p.m.) time periods at locations ST-1 and ST-2, and during the evening (7 p.m. to 10 p.m.) at location ST-3, on days when no organized athletic games were occurring at the multi-sport field. The time period was chosen with the intent of capturing baseline ambient sound levels at representative receptor locations during the specific time periods during which the proposed project would allow for future athletic games to occur. The duration of the ST measurements ranged from two (2) to five (5) consecutive hours, the dominant noise sources during the monitoring period were vehicular traffic from local roadways, SR-56, and campus roadways, and regular aircraft flyovers. Attachment B presents additional measurement data detail. Table 1 presents a summary of noise measurement results.

Table 1. Summary of Measured Noise Levels and Metrics

Measurement ID	Period (hh:mm)	A-Weighted Sound Pressure Level (dBA, SPL)						Estimated CNEL[1]
		L_{eq}	Lmax	Lmin	L10	L50	L90	
ST-1	16:00 – 17:00	50	71	43	52	46	45	53
	17:00 – 18:00	53	73	43	54	48	45	
	18:00 – 19:00	51	66	43	52	49	47	
	19:00 – 20:00	54	73	48	54	53	51	
	20:00 – 21:00	52	65	44	54	52	50	
ST-2	16:00 – 17:00	52	66	46	53	51	50	57
	17:00 – 18:00	55	64	47	57	54	52	
	18:00 – 19:00	58	66	48	59	57	55	
	19:00 – 20:00	59	65	48	61	59	56	
	20:00 – 21:00	59	64	48	61	58	55	
ST-3	19:00 – 20:00	57	69	50	58	56	54	55
	20:00 – 21:00	58	80	48	57	55	52	

[1] CNEL was conservatively calculated by applying the average of measured daytime (16:00-19:00) L_{eq} to all daytime hours and the average of measured evening (19:00-21:00) L_{eq} to all evening hours, wherever applicable, and a nighttime L_{eq} assumption of 40 dBA was assigned to all nighttime hours.

The primary noise sources at measurement location ST-1 during daytime hours were associated with distant traffic and parking lot activities (e.g., car pass-bys on the parking lot access road and student speech). Additional noise sources included intermittent aircraft flyovers and birdcall. During nighttime hours, birdcall ceased while traffic noise generated by observed increased traffic speeds on SR-56 became more prominent.

The primary noise sources at measurement location ST-2 during daytime hours were associated with distant traffic on SR-56 and Village Loop Road. Additional noise sources included intermittent aircraft flyovers, birdcall, and infrequent pedestrian pass-bys on the adjacent common-use sidewalk. During nighttime hours, pedestrian pass-bys and birdcall ceased while traffic noise generated by observed increased traffic speeds on SR-56 became more prominent.

The primary noise sources at measurement location ST-3 during evening hours were associated with traffic on local roads and from SR-56. Additional noise sources included intermittent aircraft flyovers and birdcall.

Regulatory Framework

State of California

California Environmental Quality Act Impact Determination

The Governor's Office of Planning and Research issued updated California Environmental Quality Act (CEQA) guidance, effective as of December 28, 2018. Per these new 2019 CEQA Guidelines, Appendix G (as listed for Noise), the proposed project would be considered as having a significant impact when there would be:

a) 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;

b) Generation of excessive groundborne vibration or groundborne noise levels; or

c) 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 2 miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

California Department of Transportation – Vibration

The California Department of Transportation (Caltrans) Transportation and Construction Vibration Guidance Manual (Caltrans Manual) (Caltrans 2013) provides guidance for the analysis of vibratory impacts generated by transportation and construction projects by providing thresholds for structural damage and human perception/annoyance. Table 2 below shows a curated list of damage and annoyance thresholds from the Caltrans Manual, as applicable to various receptors and vibratory source types.

As shown in Table 2, vibratory activities have potential to result in structural damage when vibration levels exceed 0.25 to 2 PPV in/sec as applicable to the source type and receptor characterization, and potential for human annoyance when vibration levels exceed 0.1 to 0.9 PPV in/sec as applicable to the source type.

Table 2. Maximum Vibration Levels for Construction Equipment for Potential Damage and Annoyance (PPV in/sec)

	Potential Damage Thresholds		"Strongly Perceptible" Annoyance Criteria	
Structure Type	**Transient Sources**	**Continuous/Frequent Intermittent Sources**	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Historic and some old buildings	0.5	0.25	0.9	0.1
Older residential structures	0.5	0.3		
New residential structures	1.0	0.5		
Modern industrial and commercial buildings	2.0	0.5		

Note: Transient sources generate a single vibratory event, such as blasting. Continuous/frequent sources include pile driving equipment and other construction activities generating multiple vibration-intensive events across a given period.
PPV in/sec = peak particle velocity in inches per second
Source: Transportation and Construction Vibration Guidance Manual (Caltrans 2013)

City of San Diego

City of San Diego Municipal Code

The City regulates noise through the City's Municipal Code, Chapter 5, Article 9.5, Noise Abatement and Control. The following sections of the ordinance provide sound level limits between adjacent properties and construction noise limits.

Section 59.5.0401 Sound Level Limits regulates noise sources by establishing 1-hour sound level thresholds at City of San Diego property lines. These limits, which vary by land use type and time of day, are shown in Table 3 below. This section of the code accompanying this table also specifies the following:

> *It shall be unlawful for any person to cause noise by any means to the extent that the one–hour average sound level exceeds the applicable limit given in the following table, at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person.*

Table 3. San Diego Municipal Code Sound Level Limits

Land Use	Time of Day	1-Hour Average Sound Level (dB)
1. Single Family Residential	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
2. Multi-Family Residential (Up to a maximum density of 1/2000)	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
3. All other residential	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
4. Commercial	7 a.m. to 7 p.m.	65
	7 p.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	60
5. Industrial or Agricultural	Any time	75

Source: City of San Diego 2012

Section 59.5.0404 Construction Noise of the noise ordinance regulates noise produced by construction activities. Construction activities are prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays and certain legal holidays, unless a permit has been granted beforehand by the Noise Abatement and Control Administrator or in conjunction with emergency work. Section 59.5.0404 also limits construction noise to an average sound level of 75 dBA during the 12-hour period from 7 a.m. to 7 p.m. at or beyond the property lines of any property zoned residential.

City of San Diego CEQA

The City of San Diego's CEQA Significance Determination Thresholds (City of San Diego 2016) outline the criteria and thresholds used to determine whether projects may have a significant effect on the environment under Section 21082.2 of CEQA (City of San Diego 2016). The City of San Diego CEQA Significance Determination Thresholds were considered in conjunction with the 2019 State CEQA Guidelines described above.

City of San Diego General Plan

The Noise Element of the City's General Plan (City of San Diego 2015) provides goals and policies to guide compatible land uses and incorporate noise attenuation measures for new uses. The goal of the Noise Element is controlling noise to acceptable levels at its source. However, when this is not feasible, the City applies additional measures to limit the effect of noise on future land uses, which include spatial separation, site planning, and building design techniques that address noise exposure and the insulation of buildings to reduce interior noise levels. Although the proposed project will not be constructing any new sensitive land uses, the City Land Use Noise Compatibility Guidelines, shown below in Table 4, are often used as a basis to determine project-related noise compatibility at existing sensitive land uses.

Table 4. Land Use Noise Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	60	65	70	75	
Parks and Recreational					
Parks, Active and Passive Recreation					
Outdoor Spectator Sports, Golf Courses; Water Recreational Facilities; Indoor Recreation Facilities					
Agricultural					
Crop Raising & Farming; Community Gardens, Aquaculture, Dairies; Horticulture Nurseries & Greenhouses; Animal Raising, Maintain & Keeping; Commercial Stables					
Residential					
Single Dwelling Units; Mobile Homes		45			
Multiple Dwelling Units **For uses affected by aircraft noise, refer to Policies NE-D.2. & NE-D.3.*		45	45*		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12Educational Facilities; Libraries; Museums; Child Care Facilities		45			
Other Educational Facilities including Vocational/Trade Schools and Colleges and Universities		45	45		
Cemeteries					
Retail Sales					
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories			50	50	

Commercial Services					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Maintenance & Repair; Personal Services; Assembly & Entertainment (includes public and religious assembly); Radio & Television Studios; Golf Course Support			50	50	
Visitor Accommodations		45	45	45	
Offices					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	50	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
Industrial					
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries					
Research & Development				50	

	Compatible	**Indoor Uses**	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. Refer to Section I.
		Outdoor Uses	Activities associated with the land use may be carried out.
45, 50	**Conditionally Compatible**	**Indoor Uses**	Building structure must attenuate exterior noise to the indoor noise level indicated by the number (45 or 50) for occupied areas. Refer to Section I.
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated t make the outdoor activities acceptable. Refer to Section I.
	Incompatible	**Indoor Uses**	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

Source: City of San Diego 2015

As Table 4 indicates, the City's exterior unconditional "compatible" noise level standard for residential uses (single and multiple dwelling units) is 60 dBA CNEL or less.

Methodologies

Studied Receptors

Due to the complex distribution of land uses in the proposed project vicinity, eight representative noise- and/or vibration-sensitive land uses were studied in this analysis. The representative receiver points are briefly summarized below.

- Receivers R1 through R5 are representative of the nearest receptors associated with the multi-family residential land use abutting the western property line of the CCA campus. Several receiver points were identified within this development due to its proximity to the proposed project and varying terrain features. Receiver R3 is closest to baseline measurement location ST-1.
- Receiver R6 is representative of the San Diego Fire-Rescue Department Station 47, located at the eastern cul-de-sac terminus of Edgewood Bend Court and the southernmost CCA campus access driveway.

- Receiver R7 is representative of the multi-family residential development northeast of the CCA campus. This receiver is closest to baseline measurement location ST-2.
- Receiver R8 is representative of the single-family residential development south of SR-56 along Caminito Mendiola.

Although CCA and Pacific Trails Middle School would each be generally considered both a noise-sensitive and vibration-sensitive land use, proposed project construction and operation will occur outside of the school year and outside of school educational hours, respectively.

Project Construction

Construction of the proposed project will occur on weekdays between the hours of 7:00 a.m. and 3:00 p.m., for an approximate 6- to 8-week-period. The following construction phases were studied for noise and vibration effects:

- **Phase 1:** Site Preparation. Lasting approximately 2 days, this construction phase will feature site clearing activities and on-site equipment, including an air compressor and electric generator.
- **Phase 2:** Grading and Excavation. Lasting approximately 11 days, this construction phase will feature the bulk of ground-disturbing activities such as the drilling of light pole footings and trenching for underground utilities. On-site equipment will include a drill rig, an excavator, and a forklift.
- **Phase 3:** Installation**.** Lasting approximately 10 days, this construction phase will feature pole setting and cable-pulling activities. On-site equipment will include a crane, a forklift, and a welding unit.

Construction Noise

Project construction noise was estimated for each construction phase by considering the two to three primary construction sound sources and calculating their aggregate sound propagation toward studied receptor locations. The key assumptions for this analysis included in this method are as follows:

- Ground absorption effects (but no greater than 4.8 dBA reduction, regardless of distance traversed by the sound path, consistent with ISO 9613-2 (ISO 1996).
- Atmospheric absorption of -1 dBA per 1,000 feet of distance traveled.
- For receptors without line-of-sight to the multi-sport field due to terrain or structure shielding, a 5 dBA reduction was applied to the aggregate predicted noise level.

For a given construction phase, all pieces of studied equipment and/or vehicles are assumed to operate—on average—from the same source point location at the general geographic centroid of the proposed project site. Each piece of equipment and/or vehicle is assigned a reference L_{max} value at a reference distance (e.g., 50 feet), and an “acoustical usage factor” (AUF) that the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) User’s Guide (FHWA 2006) describes as an estimated portion of a construction operation time period when the L_{max} value can be expected. These reference sound level and AUF values are presented for each construction phase in Attachment C.

The predicted aggregate proposed project construction noise SPL at the eight representative noise-sensitive receptor locations was calculated to determine if construction activities exceed the City construction noise ordinance limit of 75 dBA across a 12-hour period.

Construction Vibration

Construction activities can generate groundborne vibration and noise of varying degrees based on the construction activity and equipment being used. The greatest amount of groundborne vibration and noise associated with construction activities

would occur temporarily during soil-mix drilling activities. The Caltrans Manual (Caltrans 2013) provides an equation for vibration level prediction at a receptor location, which is expressed as:

$$PPV\ (in/sec) = PPV_{ref}(\frac{25}{D})^n$$

Where:

PPV_{ref} = Reference level of studied construction equipment;

D = Distance of the receptor from the construction activity; and

n = Value related to the vibration attenuation rate through the subject soil type.

Vibration levels generated by the soil-mix drilling activities were predicted using the reference level for caisson drilling reported in the Federal Transit Administration (FTA) Transit Noise and Impact Assessment Manual (FTA 2018) of 0.089 PPV in/sec at 25 feet, and an "n" value reported in the Caltrans Manual of 1.1, representative of conservatively hard soil types. This expression provides the means for the assessment of compliance with structural damage thresholds and human receptor annoyance levels at any given receptor distance.

Project Operation

Although the operation of planned light fixtures at the multi-sport field will not inherently generate notable noise, the operation of the light fixtures will permit game-related activities to extend or shift into nighttime hours when athletic activities on the multi-sport field have typically been precluded due to low visibility. The two anticipated primary noise sources studied in this analysis are:

- Vehicular traffic associated with multi-sport field attendees entering and exiting the southernmost parking lot on Edgewood Bend Court and adjacent CCA campus roadways.
- Crowd-cheering from multi-sport field event attendees at existing bleacher seating areas.

Although typical attendance to games is expected to range from 400 to 700, playoff games may result in up to 1,000 attendees. It is not anticipated that the change in game time would increase the number of visitors at the sporting events. This operational analysis studies what is expected to be the "worst-case" scenario, considering the maximum number of persons attending an evening playoff game, and the expected acute traffic flows from attendees occurring after the evening games are finished.

Traffic Noise Prediction

Average daily traffic and peak-hour traffic volume data collected in December 2018 for both game day and non-game day periods were obtained from the Canyon Crest Academy Trip Generation Study (Chen Ryan 2019) to determine typical flows and distributions of traffic through the southernmost campus entrance at the terminus of Edgewood Bend Court. Predictive traffic noise modeling was conducted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). Peak-hour L_{eq} results from the modeling were subsequently entered into CNEL calculations to allow for comparison with existing CNEL levels at studied representative receptor locations.

The predictive model considered traffic volumes, traffic speed, vehicle type, roadway width, and general intervening terrain between roadways and the studied receiver points. Proposed project traffic volumes were calculated for the post-game period by considering both the 494 maximum vehicle capacity of the multi-sport field parking lot and an assumption that approximately 50 vehicles would be entering or exiting the parking area for attendee curbside pick-up.

Due to their notable distance (e.g. >2,000 feet) from anticipated proposed project traffic flows, representative receiver points R7 and R8 were omitted from the traffic noise modeling effort.

As previously discussed, receptors represented by receiver points R1 through R5 feature second-story balconies that maintain line-of-sight to proposed project traffic. To consider this direct exposure to proposed project traffic, additional receiver points were incorporated into the model at a second-story listener height of approximately 15 feet above grade at each of these locations.

Crowd Cheering Noise Prediction

Propagation of sound generated by crowd cheering on the multi-sport field bleachers during game events was calculated using a spreadsheet-based model to predict SPL at the studied representative noise-sensitive receptor locations. This model used the same sound propagation assumptions listed for the construction noise prediction above.

With a maximum game-day turnout of up to 1,000 attendees, it was conservatively assumed that approximately 80% (i.e., 800) of these attendees would be actively vocalizing throughout the duration of the studied event hour. An even distribution of 400 male and 400 female voices were assumed to be shouting at full capacity for a total of 2 minutes of the studied hour, and otherwise were assumed to be speaking at a raised vocal level for the remaining 58 minutes.

All male and female voice sources were summed and assigned to the bleacher area using time-adjusted “raised” and “shouting” speech reference SPL for both men and women (Olsen 1998).

Receiver points R1 through R6 are located generally behind the multi-sport field bleachers; as a result, game attendees would be facing generally away from these receptors during the game and cheering events. At these receiver points, a reduction of 4 dB was applied to the predicted crowd cheer SPL to consider sound reduction inherent to human vocal directivity (Chu & Warnock 2001).

The crowd cheer sound source is assumed to emit—on average—from a point source location at the geographic centroid of the bleacher area. Predicted SPL were compared with existing hourly noise levels to determine whether the proposed project will exceed City ordinance sound level limits.

Future Noise and Vibration Environment and Impacts

Vehicular Traffic

Existing vehicular traffic on nearby roadways is the prominent source of noise at the studied receptor sites. Although the proposed project is not expected to increase the average daily traffic experienced on game days, the acute spike in traffic volume during multi-sport field egress that would have previously occurred in the late afternoons may now occur in the evening, potentially affecting the CNEL calculation at sensitive receptors. Table 5 presents predicted noise levels generated by estimated peak-hour game night traffic volumes on CCA campus roadways and Edgewood Bend Court.

The proposed project is predicted to generate future aggregate traffic noise levels slightly above existing CNEL values at receptors along the northern side of Edgewood Bend Court (represented by receiver R5) due to traffic volume increases on Edgewood Bend Court during the evening hours. Although traffic noise during the evening period may be distinctly audible at studied receptors, the overall increase in CNEL of 0 to 1 dBA is considered imperceptible with average healthy human hearing per FHWA Highway Traffic Noise: Analysis and Abatement Guidance (FHWA 2011). Thus, traffic noise level increases generated by the proposed project would be less than significant.

Table 5. Summary of Predicted Proposed Project Traffic Noise

		A-Weighted Sound Pressure Level (dBA)			
Receiver ID	Receiver Story Elevation	Estimated Existing CNEL	Predicted Proposed Project Traffic (1-Hour Evening L_{eq})	Aggregate CNEL (Existing + Project)	Increase Due to Proposed Project Traffic
R1	First	53	46	53	0
	Second	53	46	53	0
R2	First	53	49	53	0
	Second	53	49	53	0
R3	First	53	47	53	0
	Second	53	50	53	0
R4	First	53	48	53	0
	Second	53	51	53	0
R5	First	55	57	55	0
	Second	55	56	55	0
R6	First	53	53	53	0

Crowd Cheering

As stated previously, it is not anticipated that the change in game time would increase the number of visitors at the sporting events held at the multi-sport field. Predicted noise levels generated by crowd cheering during nighttime games are compared with measured baseline ambient noise levels measured during the 7 p.m. to 8 p.m. hour. The baseline period of 7 p.m. to 8 p.m. was identified for impact assessment because games are expected to begin at 7 p.m. at the latest, and subsequent hour periods would not be expected to feature a full 1-hour period of crowd vocalizations due to the limited duration of games played on the multi-sport field. Results of these predictions and comparisons are presented in Table 6.

Table 6. Summary of Predicted Crowd Cheering Noise Levels

		1-Hour A-Weighted Sound Pressure Level (L_{eq}, dBA)			
Receiver ID	Representative Measurement ID	Measured Existing (7 p.m. – 8 p.m.)	Proposed Project Predicted Crowd Cheering Over 60-Minute Period	Aggregate Sound Level (Proposed Project + Existing Ambient)	Exceeds City Sound Level Limit (45 dBA)?
R1	ST-1	54	43	54	No[1]
R2	ST-1	54	44	54	No[1]
R3	ST-1	54	46	55	No[1]
R4	ST-1	54	47	55	No[1]
R5	ST-3	57	41	57	No[1]
R6	ST-1	54	43	54	No[1]
R7	ST-2	59	38	59	No[1]
R8	ST-2	59	33	59	No[1]

[1] Although the proposed project may generate sound levels in excess of the City sound level limit, all receivers experience existing ambient noise levels in notable excess of City sound level limits from existing traffic and intermittent aircraft noise sources.

As shown in Table 6, measured existing noise levels will exceed those generated by the proposed project crowd cheering by 7 to 26 dBA at the studied receptors. Therefore, noise level impacts resulting from evening-time crowd cheering at the multi-sport field would be less than significant.

Construction Noise

Predicted construction noise levels at each studied representative receiver location generated by performance of the three proposed project construction phases are presented in Table 7.

Table 7. Summary of Predicted Project Construction Noise Levels

	12-Hour Sound Pressure Level (L_{eq}, dBA)		
Receiver ID	**Construction Phase 1**	**Construction Phase 2**	**Construction Phase 3**
R-1	46	48	44
R-2	47	49	45
R-3	48	50	46
R-4	48	50	46
R-5	44	46	42
R-6	46	48	44
R-7	40	42	38
R-8	35	37	33

Hourly average noise levels would vary depending on the duration of equipment operation, type of equipment, relative distance of the construction equipment to the noise-sensitive receptor, and presence of intervening barriers. No studied noise sensitive land uses are predicted to experience a 12-hour average noise level exceeding the City ordinance 12-hour construction noise level limit of 75 dBA, L_{eq}. Therefore, noise levels generated by proposed project construction would be less than significant.

Vibration from Construction

The closest vibration-sensitive structure to the proposed project is located approximately 390 feet west of the nearest soil-mix drilling site. At this distance, the predicted vibration level from the drilling activity would reach up to 0.004 PPV in/sec. This is well-below the applicable potential vibration damage threshold of 1 PPV in/sec and the applicable annoyance criterion of 0.1 PPV in/sec. Additionally, groundborne noise will be significantly lower than the noise generated by above-ground construction noise sources. Therefore, exposure of persons or structures to excessive groundborne vibration or groundborne noise levels is not anticipated and impacts would be less than significant.

Vibration from Operation

Proposed project operation will not generate any measurable groundborne noise or vibration levels above what is already experienced at the studied receptors. Therefore, exposure of persons or structures to excessive groundborne vibration or groundborne noise levels is not anticipated and impacts would be less than significant.

Exposure of Workers to Excessive Noise from Airport Operations

The proposed project is located within the Marine Corps Air Station (MCAS) Miramar Air Installations Compatible Use Zones (AICUZ) (MCAS 2005). MCAS is located approximately 6 miles south-southeast of the proposed project, and the proposed

project is not within the boundary of any predicted CNEL noise contours presented in the MCAS AICUZ. Therefore, the exposure of faculty, students, staff, or visitors to excessive noise levels from airport operations would be less than significant.

References

Beranek, L. L., and I. L. Ver, eds. 1992. Noise and Vibration Control Engineering, John Wiley & Sons, Inc., New York, NY.

California Department of Transportation (Caltrans). 2013. Transportation and Construction Vibration Guidance Manual. Division of Environmental Analysis. September.

Chen Ryan Associates, Inc. 2019. Canyon Crest Academy Trip Generation Study. January.

Chu, W. T., and A.C.C. Warnock. 2001. Detailed Directivity of Sound Fields Around Human Talkers.

International Organization for Standardization (ISO). 1996. “Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation.” ISO 9613-2:1996(E).

International Organization for Standardization (ISO). 1996. “Acoustics – Description and measurement of environmental noise” ISO 1996-1, 1996-2, 1996-3:2016(E).

Marine Corps Air Station (MCAS) Miramar. 2005. Marine Corps Air Station Miramar AICUZ Update.

Olsen, Wayne. 1998. Average Speech Levels and Spectra in Various Speaking/Listening Conditions: A Summary of the Pearson, Bennett, and Fiddell (1977) Report.

San Diego, City of. 2012. San Diego Municipal Code, Noise Abatement and Control.

San Diego, City of. 2015. General Plan Noise Element. Updated June 29, 2015.

San Diego, City of. 2016. Environmental Quality Act Significance Determination Thresholds. Planning Department.

United States Department of Transportation (USDOT) Federal Highway Administration (FHWA). 2006. Roadway Construction Noise Model User’s Guide – FHWA-HEP-05-054.

United States Department of Transportation (USDOT) Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment - FTA Repot No. 0123.

United States Federal Highway Administration (FHWA). 2011. Highway Traffic Noise: Analysis and Abatement Guidance. (FHWA-HEP-10-025).

ATTACHMENT A

NOISE AND VIBRATION TERMS

- Sound – For purposes of this analysis, is a physical phenomenon generated by vibrations that result in waves that travel through a medium, such as air, and result in auditory perception by the human brain.
- Frequency – Sound frequency is measured in Hertz (Hz), which is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. When the drum skin vibrates 100 times per second it generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the best human ear.
- Amplitude or Level – Is measured in decibels (dB) using a logarithmic scale. A sound level of zero dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 110 dB begin to be felt inside the human ear as discomfort and eventually pain at 120 dB and higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about one to two dB. A three to five dB change is readily perceived. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or if decreasing by 10 dB, halving) of the sound's loudness.
- Sound pressure – Sound level is usually expressed by reference to a known standard. This report refers to sound pressure level (SPL), which is expressed on a logarithmic scale with respect to a reference value of 20 micropascals (µPa). SPL depends not only on the power of the source, but also on the distance from the source and on the acoustical characteristics of the space surrounding the source.
- Sound power – Unlike sound pressure, which varies with distance from a source, sound power (and its counterpart sound power level, PWL) is the acoustic power of a source typically expressed in Watts.
- A-weighting – Sound from a tuning fork contains a single frequency (a pure tone), but most sounds one hears in the environment do not consist of a single frequency and instead are composed of a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that reflects the typical frequency-dependent sensitivity of average healthy human hearing. This is called "A-weighting," and the decibel level measured is referred to as dBA. In practice, the level of a sound source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA "curve" of decibel adjustment per octave band center frequency (OBCF) from a "flat" or unweighted SPL.
- Equivalent sound level – Environmental sound levels vary continuously and include a mixture of sound from near and distant sources. A single descriptor, L_{eq}, may be used to describe such sound that is changing in level from one moment to another. L_{eq} is the energy-average sound level during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a single, steady source to equal the acoustic energy contained in the fluctuating sound level measured.
- Statistical sound level (L_n) – A sound level exceeded for a cumulative "n" percentage of a measurement or studied time period, such as L_{10}, L_{50} or L_{90}. The L_{50} value is often referred to as the "median" sound level, while L_{90} is commonly called the "background" level as it typically represents acoustical contribution from continuous or "steady-state" sound sources and the perceived indistinct din of background sound due to the amalgamation of many contributing distant sound sources in the environment.
- Day-Night Average Sound Level – (L_{dn}) represents the average sound level for a 24-hour day and is calculated by adding a 10-dB penalty only to sound levels during the night period (10:00 p.m. to 7:00 a.m.).

ATTACHMENT B

MEASUREMENT DATA

GENERAL

AECOM Acoustics and Noise Control Practice

FIELD NOISE MEASUREMENT DATA FORM

Project Name: CCA LIGHTING | Project #: | Date: 12/18/18 | Page of

Measurement Location: ST-1 | Analyst: CK/CJ

Sound Level Meter

Model #: LD 820

Serial #: 1597

Weighting: (A) / C / Flat

Response: (S) / Fast / Impl

Windscreen : (Yes) / No (explain)

Topo: Flat / (Hilly)

Terrain: Hard / Soft / (Mixed) / Agg / Snow

Field Calibration

Model #: CAL200

Serial #: 5768

Calibration Level (dB): 94 / (114)

Pre-Test 113.9 dBA

Post-Test 113.7 dBA

GPS Coordinates (at SLM location)#

Meteorological Data

Model #: K3500

Serial #: 2058303

Time Obs/Meas: 16:00

Precipitation: Yes (explain) / (No)

Wind: Steady / Gusty / (Calm)

Avg Wind Speed/Direction: 0-1/NA m/s / MPH

Temp (°F): 73.1 RH (%): 62.5

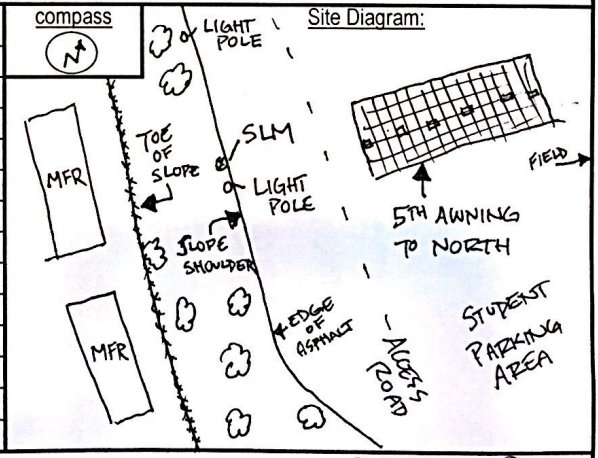
Bar Psr (Hg): 29.83 Cloud Cover (%): 5

Loc. ID	Start Time (hh:mm)	Stop Time (hh:mm)	Notes/Events
ST-1	16:00	21:00	16:00 - TRAFFIC ON SR-56 MOVING ~40-50 MPH, NOT DISTINCTLY AUDIBLE. INTERMITTENT YELLING FROM FIELD (BOYS SOCCER PRACTICE). STUDENTS TALKING IN LOT.
			16:07 - MV-22 FLYOVER
			16:12 - MV-22 FLYOVER
			16:21 - LEFT SITE FOR ST-2.
			17:08 - RETURNED TO SITE. SEEMING INCREASE IN TRAFFIC IN LOT. TRACK & FIELD PRACTICE ON FIELD. SR-56 TRAFFIC NOISE NOW DISTINCT.
			17:08 - DISTANT FW (FIXED-WING) FLYOVER.
			17:14 - DISTANT FW FLYOVER.
			17:20 - BACK-TO-BACK MV-22 FLYOVER.
			17:24 - STUDENTS MOMENTARILY YELLING IN LOT. MUSIC FROM PARKED CAR (~2MIN)
			17:30 - LEFT SITE.

Roadway Name/Dir.	PARKING LOT ACCESS	
Speed (post/obs*)	5-10 MPH	
Number of Lanes	2	
Width (pave/row)	~30 ft	
1- or 2- way	2	
Grade	N/A	
Bus Stops	N/A	
Stoplights	N/A	
Motorcycles	0	
Automobiles	12	
Medium Trucks	0	
Heavy Trucks	0	
Buses	0	
Count duration	10 MIN	

compass (N)

Site Diagram:



- note coordinate system if other than NAD83 * - Speed estimated by Radar / Driving / Observation

Photos Taken? (Yes) / No

Additional Notes/Comments: REGULAR FW, ROTARY, MV-22

BIRD CALL

Noise Sources (circle all that apply): distant aircraft • roadway traffic • rail ops • landscaping • rustling leaves • children playing • dogs barking/birds • vocalizing/insects/mechanical

Additional Notes and Sketches on Reverse or Indicated Separate Sheet(s)

GENERAL

AECOM Acoustics and Noise Control Practice

FIELD NOISE MEASUREMENT DATA FORM

Project Name: CCA LIGHTING | Project #: | Date: 12/18/18 | Page of

Measurement Location: ST-2 | Analyst: CK/CJ

Sound Level Meter
Model #: LD 820
Serial #: 1528
Weighting: (A) / C / Flat
Response: (Slow) / Fast / Impl
Windscreen : (Yes) / No (explain)

Field Calibration
Model #: CAL200
Serial #: 5768
Calibration Level (dB): 94 / (114)
Pre-Test 113.9 dBA
Post-Test 114.0 dBA

Meteorological Data
Model #: K3500
Serial #: 1058303
Time Obs/Meas: 15:30
Precipitation: Yes (explain) / (No)
Wind: Steady / Gusty / (Calm)
Avg Wind Speed/Direction: 0-1/NA m/s / (MPH)
Temp (°F): 71 RH (%): 70.2
Bar Psr (Hg): 29.80 Cloud Cover (%): 2

Topo: Flat / (Hilly)
Terrain: Hard / (Soft) / Mixed / Agg / Snow

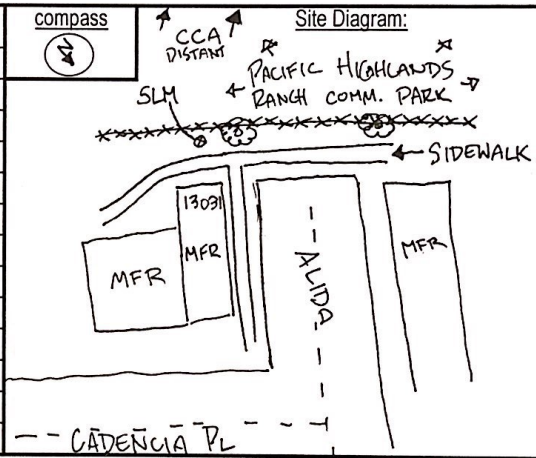
GPS Coordinates (at SLM location)#

Loc. ID	Start Time (hh:mm)	Stop Time (hh:mm)	Notes/Events
ST-2	16:00	21:00	TRAFFIC ON SR-56 DOMINANT, RESIDENTS INTERMITTENTLY WALKING BY ON ON COMMON USE SIDEWALK W/ DOGS
			16:27 PEDESTRIAN PASS-BY WITH DOG
			16:38 GARAGE DOOR OPEN AND CLOSE ACROSS "ALIDA" ROADWAY, NEAREST GARAGE.
			16:39 PEDESTRIAN PASS-BY WITH DOG

Roadway Name/Dir.	NO VISIBLE	
Speed (post/obs*)	TRAFFIC	
Number of Lanes		
Width (pave/row)		
1- or 2- way		
Grade		
Bus Stops		
Stoplights		
Motorcycles		
Automobiles		
Medium Trucks		
Heavy Trucks		
Buses		
Count duration		

compass (N)

Site Diagram:



- note coordinate system if other than NAD83 * - Speed estimated by Radar / Driving / Observation

Photos Taken? (Yes) / No

Additional Notes/Comments: REGULAR FW, ROTARY, & MV-22 SR-56 AND VILLAGE LOOP ROAD

Noise Sources (circle all that apply): distant aircraft • (roadway traffic) • rail ops • landscaping • rustling leaves • children playing • dogs barking/birds • (vocalizing/insects/mechanical

Additional Notes and Sketches on Reverse or Indicated Separate Sheet(s)

AECOM Acoustics and Noise Control Practice
FIELD NOISE MEASUREMENT DATA FORM

Project Name: _____ Project #: 60590688 Date: 2/12/19 Page 1 of 1

Measurement Location: Edgewood Bend Court Analyst: Tim Wolk

Sound Level Meter
Model #: LxT
Serial #: 0004485
Weighting: A / C / [Flat]
Response: [Slow] / Fast / Impl
Windscreen: [Yes] / No (explain)

Field Calibration
Model #: CAL200
Serial #: 12226
Calibration Level (dB): 94 / [114]
Pre-Test 0.4 dBA
Post-Test −0.12 dBA

Meteorological Data
Model #: Kestrel 3500 Time Obs/Meas: 18:49
Serial #: 2058303
Precipitation: Yes (explain) / [No]
Wind: Steady / Gusty / [Calm]
Avg Wind Speed/Direction: Ø m/s / [MPH]
Temp (°F): 67.9° RH (%): 61.5
Bar Psr (Hg): 29.76 Cloud Cover (%): 100%

Topo: [Flat] / Hilly
Terrain: Hard / Soft / [Mixed] / Agg / Snow

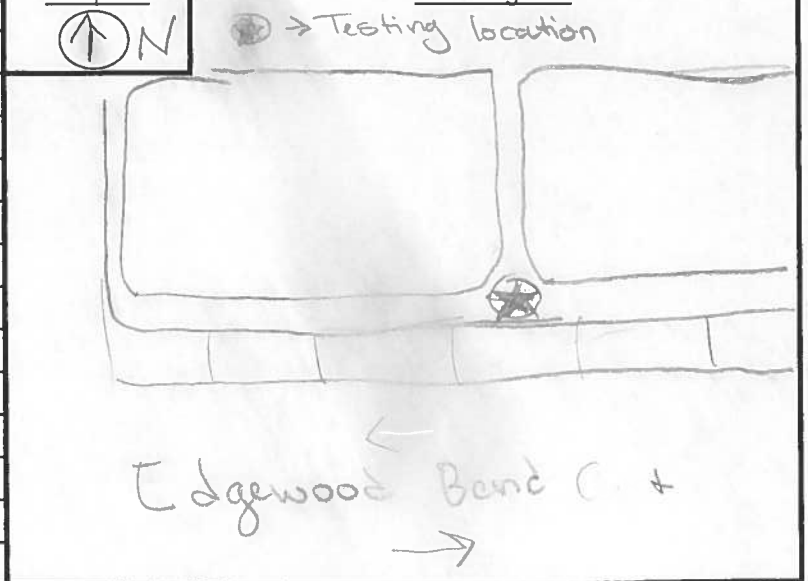
GPS Coordinates (at SLM location)#: 32.955772, −117.192261

Loc. ID	Start Time (hh:mm)	Stop Time (hh:mm)	Metrics L_{eq}	Metrics L_{min}	Metrics L_{max}	Statistics L_{10}	Statistics L_{50}	Statistics L_{90}	Notes/Events
	19:00								General traffic in surrounding area
	19:40								No events, general traffic
	19:56								louder than usual car
	20:20								Aircraft overhead
	20:23								Aircraft overhead
	20:28								Car starting behind meter / horn
	20:37								Car alarm (behind meter)
	20:55								louder than usual engine
		21:01							

Roadway Name/Dir.	Edgewood Bend Court/E/W	
Speed (post/obs*)	35 mph	
Number of Lanes	2	
Width (pave/row)	pave	
1- or 2- way	2 way	
Grade	level	
Bus Stops	None	
Stoplights	None	
Motorcycles	—	
Automobiles	19	
Medium Trucks	—	
Heavy Trucks	—	
Buses	—	
Count duration	20:00-20:15	

compass: N

Site Diagram:



- note coordinate system if other than NAD84 * - Speed estimated by Radar / Driving / [Observation]

Photos Taken? [Yes] / No

Additional Notes/Comments: Photos - view NE at meter, view S of area meter facing. General Noise is auto traffic on Hwy 56 & Carmel Valley Roads.

Noise Sources (circle all that apply): [distant aircraft] / [roadway traffic] / rail ops/landscaping/rustling leaves/children playing/dogs barking/birds vocalizing/insects/mechanical

Additional Notes and Sketches on Reverse or Indicated Separate Sheet(s)

Detailed Measurement Data

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-1	2019-12-19	16:00	50.7	43.2	59.5	54.6	46.6	43.6
ST-1	2019-12-19	16:01	43.8	42.9	45.7	44.7	43.6	43.1
ST-1	2019-12-19	16:02	44.0	43.0	46.9	44.8	43.7	43.1
ST-1	2019-12-19	16:03	47.5	43.0	57.7	49.6	43.9	43.2
ST-1	2019-12-19	16:04	48.4	43.7	54.1	51.9	46.6	43.8
ST-1	2019-12-19	16:05	48.0	43.4	55.3	51.5	45.0	43.8
ST-1	2019-12-19	16:06	46.8	43.5	53.4	48.8	45.5	43.8
ST-1	2019-12-19	16:07	52.5	47.0	56.3	55.5	51.6	47.7
ST-1	2019-12-19	16:08	47.8	44.9	52.0	49.6	47.6	45.8
ST-1	2019-12-19	16:09	49.0	45.4	53.6	51.8	47.5	46.1
ST-1	2019-12-19	16:10	47.0	44.5	51.3	49.7	46.3	45.2
ST-1	2019-12-19	16:11	49.6	45.3	55.0	52.8	48.5	45.8
ST-1	2019-12-19	16:12	51.8	45.6	55.5	54.8	50.5	46.4
ST-1	2019-12-19	16:13	47.1	44.1	56.0	50.1	44.7	44.1
ST-1	2019-12-19	16:14	44.8	43.2	48.9	46.5	44.3	43.3
ST-1	2019-12-19	16:15	48.8	45.1	54.4	51.1	47.9	45.7
ST-1	2019-12-19	16:16	52.4	46.1	57.6	55.2	51.6	48.0
ST-1	2019-12-19	16:17	46.7	43.5	52.1	49.8	44.8	43.5
ST-1	2019-12-19	16:18	46.8	43.9	56.4	47.7	44.7	44.1
ST-1	2019-12-19	16:19	48.3	45.4	56.2	49.8	47.3	45.5
ST-1	2019-12-19	16:20	48.3	45.1	51.7	50.5	48.0	45.6
ST-1	2019-12-19	16:21	51.7	46.4	65.7	51.5	48.4	46.9
ST-1	2019-12-19	16:22	54.4	45.6	65.4	57.7	51.0	46.1
ST-1	2019-12-19	16:23	46.9	43.8	60.1	47.2	45.0	43.8
ST-1	2019-12-19	16:24	52.9	44.2	61.5	58.1	45.9	44.3
ST-1	2019-12-19	16:25	45.7	44.6	48.0	46.8	45.5	44.6
ST-1	2019-12-19	16:26	51.8	44.3	62.6	54.4	46.4	44.8
ST-1	2019-12-19	16:27	51.0	44.5	58.8	55.7	46.8	44.5
ST-1	2019-12-19	16:28	44.2	43.1	49.0	45.0	43.7	43.1
ST-1	2019-12-19	16:29	44.8	43.6	46.7	45.7	44.6	44.0
ST-1	2019-12-19	16:30	52.4	44.3	62.5	55.1	48.4	44.7
ST-1	2019-12-19	16:31	52.8	45.5	60.6	57.0	48.8	46.4
ST-1	2019-12-19	16:32	48.8	44.2	59.0	51.6	44.8	44.2
ST-1	2019-12-19	16:33	45.4	44.0	48.2	46.3	45.3	44.3
ST-1	2019-12-19	16:34	52.8	45.1	62.4	57.9	46.9	45.4
ST-1	2019-12-19	16:35	53.1	44.7	62.1	58.3	48.1	45.1
ST-1	2019-12-19	16:36	51.6	44.2	61.8	54.0	45.9	44.3
ST-1	2019-12-19	16:37	47.8	44.1	55.2	52.1	44.9	44.2
ST-1	2019-12-19	16:38	49.5	43.9	59.9	52.4	44.9	44.2
ST-1	2019-12-19	16:39	44.8	43.9	46.2	45.7	44.7	44.1
ST-1	2019-12-19	16:40	44.7	43.8	46.4	45.7	44.7	44.1
ST-1	2019-12-19	16:41	52.5	45.0	64.4	54.6	46.0	45.2
ST-1	2019-12-19	16:42	52.8	45.0	59.0	56.6	50.8	45.8
ST-1	2019-12-19	16:43	50.9	44.4	62.0	54.5	46.0	44.4
ST-1	2019-12-19	16:44	47.0	43.9	54.5	49.2	45.2	44.2
ST-1	2019-12-19	16:45	50.8	44.4	60.9	53.7	46.5	44.9
ST-1	2019-12-19	16:46	50.0	43.8	60.4	53.1	44.8	44.0
ST-1	2019-12-19	16:47	50.0	43.5	61.2	52.9	44.7	43.5
ST-1	2019-12-19	16:48	45.0	43.9	49.4	45.9	44.7	44.1
ST-1	2019-12-19	16:49	57.3	44.7	70.9	58.4	47.7	45.7
ST-1	2019-12-19	16:50	49.1	43.9	58.4	52.8	44.8	44.1
ST-1	2019-12-19	16:51	53.2	44.1	61.0	58.1	48.4	44.8
ST-1	2019-12-19	16:52	47.2	44.0	54.9	49.1	45.4	44.3
ST-1	2019-12-19	16:53	46.8	44.1	53.6	49.4	45.4	44.3
ST-1	2019-12-19	16:54	46.7	43.6	52.8	50.4	44.8	44.0
ST-1	2019-12-19	16:55	48.3	43.6	57.8	51.2	44.6	43.6
ST-1	2019-12-19	16:56	46.9	44.1	53.6	50.4	44.9	44.2
ST-1	2019-12-19	16:57	44.7	44.0	46.1	45.5	44.6	44.1
ST-1	2019-12-19	16:58	51.9	44.4	60.9	57.0	47.3	44.7
ST-1	2019-12-19	16:59	51.5	44.3	62.6	54.2	45.7	44.3
ST-1	2019-12-19	17:00	58.5	45.2	71.5	59.6	50.6	48.6
ST-1	2019-12-19	17:01	48.8	45.1	54.2	52.1	46.9	45.4
ST-1	2019-12-19	17:02	49.6	44.2	60.0	52.0	45.4	44.3
ST-1	2019-12-19	17:03	57.2	44.4	69.6	59.7	51.9	44.8
ST-1	2019-12-19	17:04	53.5	46.2	60.0	57.0	52.1	47.2
ST-1	2019-12-19	17:05	52.0	44.6	61.0	57.3	47.5	45.2
ST-1	2019-12-19	17:06	49.0	44.4	58.7	51.8	45.7	44.5
ST-1	2019-12-19	17:07	48.7	44.4	57.2	51.9	45.6	44.4
ST-1	2019-12-19	17:08	47.1	44.7	49.6	48.9	46.7	45.0
ST-1	2019-12-19	17:09	52.9	46.7	65.4	56.4	49.1	47.2
ST-1	2019-12-19	17:10	57.4	44.6	66.2	62.8	51.5	45.3
ST-1	2019-12-19	17:11	55.0	44.6	65.2	59.0	50.5	45.1
ST-1	2019-12-19	17:12	52.6	45.7	59.7	56.8	49.7	46.4
ST-1	2019-12-19	17:13	49.0	44.5	58.1	51.5	46.2	44.5
ST-1	2019-12-19	17:14	52.0	44.2	64.2	50.8	47.9	45.0

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-1	2019-12-19	17:15	55.2	45.1	63.2	59.9	50.0	45.9
ST-1	2019-12-19	17:16	54.6	45.6	62.3	58.7	51.3	46.8
ST-1	2019-12-19	17:17	55.5	45.0	65.2	59.6	50.5	45.6
ST-1	2019-12-19	17:18	56.3	47.5	63.6	59.7	53.8	49.1
ST-1	2019-12-19	17:19	52.9	45.7	59.8	57.5	48.8	46.4
ST-1	2019-12-19	17:20	57.6	47.2	62.5	61.7	55.5	48.3
ST-1	2019-12-19	17:21	49.7	44.1	59.0	51.8	46.1	44.3
ST-1	2019-12-19	17:22	49.5	44.5	59.5	52.5	45.5	44.5
ST-1	2019-12-19	17:23	48.5	44.5	53.1	50.9	47.2	45.1
ST-1	2019-12-19	17:24	52.6	44.8	60.1	57.0	49.1	45.4
ST-1	2019-12-19	17:25	52.1	46.3	58.5	56.2	50.1	47.0
ST-1	2019-12-19	17:26	58.7	46.6	71.1	63.1	49.2	47.4
ST-1	2019-12-19	17:27	55.9	44.8	63.8	60.1	51.4	45.6
ST-1	2019-12-19	17:28	55.1	47.8	63.8	58.5	52.6	48.8
ST-1	2019-12-19	17:29	46.8	45.1	50.7	48.7	46.3	45.3
ST-1	2019-12-19	17:30	61.4	45.3	72.6	64.9	51.2	46.1
ST-1	2019-12-19	17:31	55.3	45.1	64.2	62.2	46.8	45.3
ST-1	2019-12-19	17:32	47.3	45.1	53.6	49.7	45.9	45.2
ST-1	2019-12-19	17:33	47.6	44.2	55.9	50.9	44.9	44.2
ST-1	2019-12-19	17:34	52.0	45.1	60.6	56.9	47.5	45.4
ST-1	2019-12-19	17:35	53.2	43.4	64.9	56.5	44.8	43.6
ST-1	2019-12-19	17:36	49.0	43.8	56.7	52.7	46.5	44.6
ST-1	2019-12-19	17:37	51.9	43.2	63.4	54.8	44.5	43.5
ST-1	2019-12-19	17:38	44.4	43.4	48.8	44.9	44.2	43.4
ST-1	2019-12-19	17:39	44.1	43.2	45.4	44.9	44.0	43.2
ST-1	2019-12-19	17:40	46.0	43.6	56.9	46.8	44.4	43.6
ST-1	2019-12-19	17:41	53.7	43.8	63.2	58.8	48.5	44.2
ST-1	2019-12-19	17:42	44.4	43.4	47.2	45.0	44.4	43.5
ST-1	2019-12-19	17:43	44.3	43.5	46.5	45.0	44.3	43.5
ST-1	2019-12-19	17:44	48.2	43.7	55.5	51.8	45.6	44.2
ST-1	2019-12-19	17:45	50.4	43.5	62.0	52.9	44.7	43.6
ST-1	2019-12-19	17:46	49.7	44.3	60.7	52.0	45.4	44.3
ST-1	2019-12-19	17:47	52.8	44.7	63.9	55.7	46.7	45.1
ST-1	2019-12-19	17:48	48.1	44.3	56.2	50.6	46.0	45.0
ST-1	2019-12-19	17:49	49.7	44.2	59.0	52.5	46.7	45.1
ST-1	2019-12-19	17:50	49.8	44.4	59.8	52.6	45.9	44.4
ST-1	2019-12-19	17:51	58.2	44.3	69.7	62.6	49.5	44.6
ST-1	2019-12-19	17:52	49.0	44.3	58.5	51.7	45.9	44.4
ST-1	2019-12-19	17:53	49.7	44.2	60.7	52.7	44.8	44.2
ST-1	2019-12-19	17:54	46.9	44.2	52.3	50.0	45.9	44.3
ST-1	2019-12-19	17:55	48.8	45.2	57.5	50.0	46.9	45.3
ST-1	2019-12-19	17:56	45.5	44.6	46.7	46.5	45.6	45.1
ST-1	2019-12-19	17:57	46.0	45.0	48.5	47.2	45.7	45.1
ST-1	2019-12-19	17:58	46.2	44.8	52.3	47.5	45.8	45.0
ST-1	2019-12-19	17:59	48.0	44.4	57.0	50.6	45.1	44.4
ST-1	2019-12-19	18:00	45.2	44.3	46.9	45.9	45.3	44.3
ST-1	2019-12-19	18:01	48.1	44.3	56.3	51.2	45.7	44.4
ST-1	2019-12-19	18:02	48.8	45.3	55.8	52.1	47.0	45.4
ST-1	2019-12-19	18:03	45.8	44.6	47.5	46.7	45.7	44.7
ST-1	2019-12-19	18:04	51.6	44.5	63.3	53.7	45.8	44.5
ST-1	2019-12-19	18:05	48.3	45.5	53.9	51.1	47.4	45.7
ST-1	2019-12-19	18:06	45.9	44.9	48.4	46.8	45.8	45.1
ST-1	2019-12-19	18:07	50.2	44.6	57.9	54.3	46.7	45.0
ST-1	2019-12-19	18:08	45.6	44.5	46.9	46.7	45.6	44.8
ST-1	2019-12-19	18:09	45.6	44.4	47.3	46.8	45.5	44.4
ST-1	2019-12-19	18:10	46.8	45.8	47.8	47.7	46.8	46.1
ST-1	2019-12-19	18:11	52.0	44.8	63.4	54.9	46.6	45.2
ST-1	2019-12-19	18:12	50.8	44.1	63.4	51.8	45.1	44.2
ST-1	2019-12-19	18:13	44.6	43.4	45.5	45.5	44.6	43.4
ST-1	2019-12-19	18:14	45.4	43.9	47.0	46.2	45.4	44.5
ST-1	2019-12-19	18:15	44.9	44.0	45.8	45.7	44.8	44.2
ST-1	2019-12-19	18:16	44.8	44.3	45.4	45.4	44.8	44.3
ST-1	2019-12-19	18:17	45.5	44.4	47.0	46.7	45.5	44.4
ST-1	2019-12-19	18:18	50.5	44.1	61.3	53.4	45.6	44.4
ST-1	2019-12-19	18:19	46.2	44.5	50.1	48.0	45.7	44.7
ST-1	2019-12-19	18:20	46.3	45.1	48.1	47.0	46.4	45.4
ST-1	2019-12-19	18:21	46.6	45.7	47.2	47.0	46.5	46.0
ST-1	2019-12-19	18:22	45.8	44.3	47.4	46.9	45.7	44.6
ST-1	2019-12-19	18:23	46.1	45.0	48.1	46.9	46.1	45.2
ST-1	2019-12-19	18:24	54.3	46.6	65.6	58.7	47.8	46.9
ST-1	2019-12-19	18:25	46.9	45.5	48.4	47.9	46.8	45.8
ST-1	2019-12-19	18:26	48.2	46.9	49.6	49.0	48.2	47.2
ST-1	2019-12-19	18:27	51.1	46.4	61.0	53.2	48.0	47.1
ST-1	2019-12-19	18:28	49.1	47.5	50.6	49.9	49.0	48.0
ST-1	2019-12-19	18:29	49.0	46.2	51.6	50.5	48.8	47.0
ST-1	2019-12-19	18:30	50.6	47.2	58.5	53.1	48.6	47.4
ST-1	2019-12-19	18:31	51.3	47.5	59.0	53.0	49.9	48.5

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-1	2019-12-19	18:32	57.4	49.7	64.4	62.1	54.7	51.2
ST-1	2019-12-19	18:33	53.7	48.1	61.4	56.4	51.7	49.0
ST-1	2019-12-19	18:34	55.7	47.1	63.6	60.9	50.4	47.6
ST-1	2019-12-19	18:35	49.4	47.9	51.6	50.1	49.3	48.2
ST-1	2019-12-19	18:36	49.8	48.4	54.1	51.3	49.1	48.4
ST-1	2019-12-19	18:37	49.8	48.4	51.4	50.8	49.7	48.4
ST-1	2019-12-19	18:38	52.5	50.2	59.1	53.9	51.5	50.5
ST-1	2019-12-19	18:39	50.4	48.6	57.0	51.2	49.7	48.6
ST-1	2019-12-19	18:40	54.6	50.2	60.6	57.3	53.6	50.6
ST-1	2019-12-19	18:41	51.6	49.0	56.9	53.3	51.1	49.2
ST-1	2019-12-19	18:42	49.7	48.0	52.0	50.7	49.5	48.5
ST-1	2019-12-19	18:43	53.3	48.3	64.1	55.3	49.4	48.3
ST-1	2019-12-19	18:44	54.6	47.6	63.8	58.6	50.5	47.6
ST-1	2019-12-19	18:45	51.2	47.5	59.2	54.3	49.2	47.5
ST-1	2019-12-19	18:46	55.3	48.7	63.8	60.1	50.6	49.1
ST-1	2019-12-19	18:47	50.9	48.8	55.5	51.9	50.3	49.1
ST-1	2019-12-19	18:48	51.0	49.5	55.3	52.9	50.1	49.5
ST-1	2019-12-19	18:49	51.0	49.7	52.3	51.8	50.8	50.1
ST-1	2019-12-19	18:50	52.0	50.3	54.2	53.1	51.8	50.8
ST-1	2019-12-19	18:51	52.6	50.7	54.6	53.7	52.5	51.2
ST-1	2019-12-19	18:52	53.3	51.2	54.7	54.6	53.3	51.7
ST-1	2019-12-19	18:53	52.4	51.0	53.5	53.0	52.3	51.4
ST-1	2019-12-19	18:54	52.3	50.1	54.0	53.6	52.2	50.5
ST-1	2019-12-19	18:55	52.3	49.5	60.8	53.4	50.6	49.6
ST-1	2019-12-19	18:56	52.6	50.2	58.6	54.5	51.6	50.4
ST-1	2019-12-19	18:57	51.2	48.7	52.7	52.3	51.2	49.6
ST-1	2019-12-19	18:58	51.4	49.8	53.7	52.9	51.1	50.1
ST-1	2019-12-19	18:59	53.0	50.8	54.5	54.0	53.0	51.5
ST-1	2019-12-19	19:00	53.1	52.1	54.1	53.8	53.1	52.2
ST-1	2019-12-19	19:01	53.4	52.5	54.1	53.9	53.4	52.7
ST-1	2019-12-19	19:02	53.9	52.7	55.3	54.8	53.8	53.1
ST-1	2019-12-19	19:03	53.1	51.7	54.7	54.2	53.1	52.0
ST-1	2019-12-19	19:04	54.0	51.3	59.3	55.5	53.1	52.0
ST-1	2019-12-19	19:05	53.4	52.1	54.3	54.2	53.4	52.4
ST-1	2019-12-19	19:06	53.2	51.1	54.3	53.9	53.2	52.1
ST-1	2019-12-19	19:07	51.0	49.5	52.2	51.8	51.0	50.1
ST-1	2019-12-19	19:08	53.3	52.1	54.2	53.9	53.3	52.4
ST-1	2019-12-19	19:09	53.2	51.2	59.6	54.5	52.4	51.4
ST-1	2019-12-19	19:10	52.7	51.5	53.8	53.6	52.6	51.6
ST-1	2019-12-19	19:11	52.4	51.1	53.6	52.9	52.4	51.6
ST-1	2019-12-19	19:12	53.7	51.8	55.5	54.8	53.6	52.2
ST-1	2019-12-19	19:13	54.2	53.5	55.0	54.8	54.2	53.5
ST-1	2019-12-19	19:14	53.3	51.1	55.0	54.6	53.4	51.5
ST-1	2019-12-19	19:15	53.3	52.0	54.6	54.2	53.2	52.2
ST-1	2019-12-19	19:16	53.0	51.7	54.2	53.8	53.0	52.1
ST-1	2019-12-19	19:17	53.7	52.5	54.7	54.5	53.6	53.0
ST-1	2019-12-19	19:18	55.2	51.3	62.8	59.3	53.2	52.1
ST-1	2019-12-19	19:19	53.1	52.1	54.1	53.8	53.1	52.2
ST-1	2019-12-19	19:20	54.3	53.1	55.6	55.0	54.3	53.4
ST-1	2019-12-19	19:21	56.8	53.9	62.9	59.1	55.8	54.3
ST-1	2019-12-19	19:22	53.8	51.6	58.7	55.9	52.7	51.7
ST-1	2019-12-19	19:23	52.0	51.2	52.7	52.7	52.0	51.2
ST-1	2019-12-19	19:24	56.3	51.1	63.4	59.7	53.7	51.6
ST-1	2019-12-19	19:25	57.2	54.3	64.1	59.7	55.6	54.4
ST-1	2019-12-19	19:26	56.0	53.9	62.2	57.6	55.5	54.4
ST-1	2019-12-19	19:27	61.4	52.4	73.3	65.1	56.1	54.2
ST-1	2019-12-19	19:28	54.2	52.3	56.2	55.5	54.0	52.6
ST-1	2019-12-19	19:29	52.6	50.6	55.4	54.4	52.1	51.2
ST-1	2019-12-19	19:30	54.8	51.1	63.2	56.4	53.2	51.9
ST-1	2019-12-19	19:31	52.2	49.9	54.3	53.8	52.0	50.5
ST-1	2019-12-19	19:32	54.3	52.8	55.6	54.9	54.3	53.3
ST-1	2019-12-19	19:33	54.7	50.8	64.2	56.7	52.1	51.2
ST-1	2019-12-19	19:34	51.5	49.5	58.8	52.5	51.2	50.0
ST-1	2019-12-19	19:35	51.4	48.8	52.6	52.6	51.5	49.9
ST-1	2019-12-19	19:36	52.0	50.6	52.9	52.8	51.9	51.1
ST-1	2019-12-19	19:37	52.6	50.6	56.8	53.7	52.3	51.1
ST-1	2019-12-19	19:38	52.3	50.6	53.9	53.6	52.2	51.2
ST-1	2019-12-19	19:39	52.9	50.6	62.1	52.9	52.1	51.1
ST-1	2019-12-19	19:40	56.5	49.7	70.7	54.3	51.2	50.2
ST-1	2019-12-19	19:41	52.0	50.9	53.1	52.8	51.9	51.2
ST-1	2019-12-19	19:42	51.5	49.6	53.6	52.9	51.2	50.1
ST-1	2019-12-19	19:43	52.0	51.3	53.1	52.8	52.0	51.3
ST-1	2019-12-19	19:44	53.1	52.1	54.3	53.9	53.1	52.2
ST-1	2019-12-19	19:45	52.8	51.3	54.1	53.7	52.6	51.7
ST-1	2019-12-19	19:46	52.6	50.8	53.8	53.7	52.6	51.4
ST-1	2019-12-19	19:47	52.0	51.2	53.2	52.8	52.1	51.2
ST-1	2019-12-19	19:48	52.2	51.1	53.1	52.8	52.1	51.2

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-1	2019-12-19	19:49	51.2	49.8	52.8	52.4	50.8	50.1
ST-1	2019-12-19	19:50	51.0	49.1	52.5	52.4	51.2	49.3
ST-1	2019-12-19	19:51	50.7	49.6	51.4	51.4	50.6	50.0
ST-1	2019-12-19	19:52	50.6	49.4	51.7	51.5	50.5	49.5
ST-1	2019-12-19	19:53	50.5	48.9	52.6	51.7	50.3	49.2
ST-1	2019-12-19	19:54	49.6	48.4	50.7	50.6	49.6	48.5
ST-1	2019-12-19	19:55	50.3	49.2	51.4	51.1	50.4	49.4
ST-1	2019-12-19	19:56	50.1	48.9	51.7	50.9	50.0	49.2
ST-1	2019-12-19	19:57	50.4	49.2	51.8	51.5	50.4	49.3
ST-1	2019-12-19	19:58	51.3	49.1	55.1	52.6	50.8	49.6
ST-1	2019-12-19	19:59	50.5	49.2	51.7	51.2	50.4	49.4
ST-1	2019-12-19	20:00	52.0	50.7	54.3	52.9	51.9	51.0
ST-1	2019-12-19	20:01	52.6	50.4	60.2	54.4	52.1	50.8
ST-1	2019-12-19	20:02	55.5	51.8	65.2	56.9	53.0	52.1
ST-1	2019-12-19	20:03	52.1	49.4	53.5	53.5	52.0	50.3
ST-1	2019-12-19	20:04	53.2	50.8	54.9	54.6	53.2	51.3
ST-1	2019-12-19	20:05	52.0	50.8	53.5	52.8	52.0	51.1
ST-1	2019-12-19	20:06	52.9	50.5	57.0	55.6	51.9	51.0
ST-1	2019-12-19	20:07	53.2	49.9	56.0	55.5	52.4	50.5
ST-1	2019-12-19	20:08	53.0	51.2	54.7	54.0	52.9	52.0
ST-1	2019-12-19	20:09	52.3	50.2	54.3	53.8	51.9	50.9
ST-1	2019-12-19	20:10	52.6	50.3	54.5	53.8	52.6	50.8
ST-1	2019-12-19	20:11	51.0	47.3	53.3	52.7	50.8	48.4
ST-1	2019-12-19	20:12	52.0	50.3	53.5	52.9	52.2	50.8
ST-1	2019-12-19	20:13	52.8	50.5	53.9	53.8	52.9	51.6
ST-1	2019-12-19	20:14	51.3	48.8	53.3	52.8	51.2	49.4
ST-1	2019-12-19	20:15	50.8	49.0	51.8	51.7	50.7	49.8
ST-1	2019-12-19	20:16	51.0	49.2	52.8	52.0	50.8	49.6
ST-1	2019-12-19	20:17	52.1	50.5	54.0	52.9	52.1	50.8
ST-1	2019-12-19	20:18	50.6	48.4	52.0	51.7	50.5	49.3
ST-1	2019-12-19	20:19	50.3	47.8	52.2	51.5	50.3	48.7
ST-1	2019-12-19	20:20	50.6	47.6	52.4	51.9	50.6	48.6
ST-1	2019-12-19	20:21	52.0	48.3	53.9	53.6	52.1	49.3
ST-1	2019-12-19	20:22	51.8	50.0	53.8	52.9	51.6	50.4
ST-1	2019-12-19	20:23	50.8	49.8	52.5	51.7	50.7	50.1
ST-1	2019-12-19	20:24	51.6	50.2	52.7	52.3	51.5	51.0
ST-1	2019-12-19	20:25	50.7	49.4	52.4	51.7	50.7	50.0
ST-1	2019-12-19	20:26	52.9	49.8	55.5	54.5	52.6	51.2
ST-1	2019-12-19	20:27	52.4	50.3	54.7	53.7	52.3	51.1
ST-1	2019-12-19	20:28	51.3	49.4	54.4	53.5	50.8	49.5
ST-1	2019-12-19	20:29	53.0	51.7	53.9	53.8	53.0	52.1
ST-1	2019-12-19	20:30	53.3	52.2	55.0	54.3	52.9	52.2
ST-1	2019-12-19	20:31	54.3	52.3	57.0	55.8	54.0	52.7
ST-1	2019-12-19	20:32	55.9	52.5	58.2	57.5	55.8	54.2
ST-1	2019-12-19	20:33	53.8	48.7	56.4	55.9	53.5	50.2
ST-1	2019-12-19	20:34	54.5	51.9	56.9	55.8	54.3	52.7
ST-1	2019-12-19	20:35	53.4	50.7	54.9	54.7	53.4	51.5
ST-1	2019-12-19	20:36	53.4	50.5	55.9	55.5	52.9	51.2
ST-1	2019-12-19	20:37	53.3	48.9	55.9	54.9	53.4	50.3
ST-1	2019-12-19	20:38	52.5	49.3	54.3	53.8	52.7	50.3
ST-1	2019-12-19	20:39	50.3	44.9	52.9	51.9	50.4	47.0
ST-1	2019-12-19	20:40	50.3	44.1	52.8	51.9	50.7	45.0
ST-1	2019-12-19	20:41	49.9	47.3	52.3	51.6	49.8	48.1
ST-1	2019-12-19	20:42	51.9	50.5	53.6	53.0	51.8	51.0
ST-1	2019-12-19	20:43	51.7	50.3	53.8	52.8	51.6	50.7
ST-1	2019-12-19	20:44	52.7	48.0	56.3	53.9	52.6	49.8
ST-1	2019-12-19	20:45	52.9	48.1	55.9	55.0	53.4	48.8
ST-1	2019-12-19	20:46	52.1	48.8	54.6	53.8	52.0	49.7
ST-1	2019-12-19	20:47	52.8	50.8	55.5	54.2	52.6	51.4
ST-1	2019-12-19	20:48	50.5	49.0	51.9	51.7	50.5	49.3
ST-1	2019-12-19	20:49	51.0	48.6	52.9	52.6	50.9	49.1
ST-1	2019-12-19	20:50	52.0	49.6	54.8	53.6	52.2	49.7
ST-1	2019-12-19	20:51	51.7	50.5	53.1	52.7	51.6	50.7
ST-1	2019-12-19	20:52	52.5	50.8	53.9	53.5	52.5	51.6
ST-1	2019-12-19	20:53	51.6	49.6	52.8	52.7	51.6	50.4
ST-1	2019-12-19	20:54	52.6	50.0	54.5	53.8	52.7	50.5
ST-1	2019-12-19	20:55	52.3	49.1	54.5	53.9	52.3	50.0
ST-1	2019-12-19	20:56	52.5	50.4	54.9	53.8	52.4	51.1
ST-1	2019-12-19	20:57	53.3	50.3	55.0	54.7	53.4	51.3
ST-1	2019-12-19	20:58	51.8	50.0	53.2	52.9	51.8	50.5
ST-2	2019-12-19	20:59	51.8	49.4	53.3	52.9	51.9	50.2
ST-2	2019-12-19	16:00	49.8	46.9	55.4	50.9	49.3	47.9
ST-2	2019-12-19	16:01	50.4	47.0	56.9	52.7	49.5	47.4
ST-2	2019-12-19	16:02	50.5	45.9	56.5	52.5	50.1	47.1
ST-2	2019-12-19	16:03	49.5	45.9	54.4	51.3	49.2	46.7
ST-2	2019-12-19	16:04	49.9	48.5	51.4	50.9	49.8	48.9
ST-2	2019-12-19	16:05	50.6	48.5	53.0	51.9	50.5	49.0

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-2	2019-12-19	16:06	50.9	49.2	52.4	51.9	51.0	49.5
ST-2	2019-12-19	16:07	56.0	51.2	59.9	59.0	55.1	51.8
ST-2	2019-12-19	16:08	50.2	46.3	52.4	51.8	50.4	47.4
ST-2	2019-12-19	16:09	50.0	47.3	53.0	50.9	49.9	48.4
ST-2	2019-12-19	16:10	51.3	48.9	53.5	52.8	51.0	49.3
ST-2	2019-12-19	16:11	51.3	48.2	53.7	52.8	51.3	49.3
ST-2	2019-12-19	16:12	54.6	49.7	59.3	58.0	52.0	50.2
ST-2	2019-12-19	16:13	49.4	47.8	51.5	50.7	49.3	48.1
ST-2	2019-12-19	16:14	50.6	48.7	53.2	51.9	50.4	49.1
ST-2	2019-12-19	16:15	51.6	49.9	53.5	52.8	51.5	50.3
ST-2	2019-12-19	16:16	53.3	50.9	56.2	55.3	52.8	51.4
ST-2	2019-12-19	16:17	52.9	51.0	55.4	54.1	52.6	51.3
ST-2	2019-12-19	16:18	53.3	50.8	55.3	54.5	53.2	52.1
ST-2	2019-12-19	16:19	52.7	50.5	54.8	53.8	52.7	51.3
ST-2	2019-12-19	16:20	52.9	50.8	54.4	53.9	52.9	52.0
ST-2	2019-12-19	16:21	53.1	50.8	55.9	54.8	52.9	51.3
ST-2	2019-12-19	16:22	52.1	48.5	60.5	53.3	51.4	49.6
ST-2	2019-12-19	16:23	51.2	47.5	53.8	52.9	51.0	48.5
ST-2	2019-12-19	16:24	52.7	49.8	54.8	54.0	52.7	51.1
ST-2	2019-12-19	16:25	52.3	49.3	57.0	54.9	51.4	50.0
ST-2	2019-12-19	16:26	51.2	47.2	55.2	53.9	50.5	48.2
ST-2	2019-12-19	16:27	51.7	48.8	57.2	53.8	51.0	49.5
ST-2	2019-12-19	16:28	51.8	49.3	54.4	53.4	51.6	49.8
ST-2	2019-12-19	16:29	52.9	50.3	55.4	54.6	52.6	51.1
ST-2	2019-12-19	16:30	51.1	49.0	53.2	52.6	50.8	49.6
ST-2	2019-12-19	16:31	50.6	47.2	52.8	52.4	50.6	48.2
ST-2	2019-12-19	16:32	51.5	48.5	53.3	52.7	51.5	49.6
ST-2	2019-12-19	16:33	54.0	51.5	55.8	55.0	54.1	52.0
ST-2	2019-12-19	16:34	54.0	51.3	55.8	55.0	54.0	52.4
ST-2	2019-12-19	16:35	51.7	49.6	54.0	53.2	51.6	50.2
ST-2	2019-12-19	16:36	49.7	47.3	52.0	51.3	49.3	48.1
ST-2	2019-12-19	16:37	50.9	48.3	52.8	52.0	51.1	48.9
ST-2	2019-12-19	16:38	50.8	48.5	53.2	52.6	50.0	48.9
ST-2	2019-12-19	16:39	51.0	49.4	52.6	52.2	50.9	50.0
ST-2	2019-12-19	16:40	52.9	50.5	55.4	54.6	52.7	50.8
ST-2	2019-12-19	16:41	55.4	53.4	57.3	56.7	55.4	53.9
ST-2	2019-12-19	16:42	55.7	51.4	61.9	58.6	54.6	52.1
ST-2	2019-12-19	16:43	51.4	49.8	52.9	52.1	51.4	50.4
ST-2	2019-12-19	16:44	54.1	49.8	66.1	54.7	51.5	50.3
ST-2	2019-12-19	16:45	58.0	50.3	70.0	61.8	52.7	50.9
ST-2	2019-12-19	16:46	67.3	48.3	80.8	71.4	57.1	49.5
ST-2	2019-12-19	16:47	55.5	48.1	67.8	57.4	52.3	49.5
ST-2	2019-12-19	16:48	54.3	50.3	62.8	57.5	52.6	51.1
ST-2	2019-12-19	16:49	51.6	49.8	53.9	52.8	51.4	50.3
ST-2	2019-12-19	16:50	53.0	51.0	55.8	54.6	52.9	51.5
ST-2	2019-12-19	16:51	51.9	50.6	53.5	52.9	51.7	51.1
ST-2	2019-12-19	16:52	51.1	48.8	54.3	52.6	51.0	49.4
ST-2	2019-12-19	16:53	48.9	46.4	51.1	50.2	48.8	47.2
ST-2	2019-12-19	16:54	50.6	48.0	53.6	51.9	50.5	49.0
ST-2	2019-12-19	16:55	50.4	48.0	52.6	51.8	50.4	48.5
ST-2	2019-12-19	16:56	49.8	48.4	51.9	50.9	49.8	48.6
ST-2	2019-12-19	16:57	53.0	49.6	54.6	54.6	53.0	50.9
ST-2	2019-12-19	16:58	52.1	48.5	54.3	53.7	52.3	49.1
ST-2	2019-12-19	16:59	49.8	48.3	51.6	51.3	49.6	48.3
ST-2	2019-12-19	17:00	53.2	49.4	55.5	54.8	53.3	50.6
ST-2	2019-12-19	17:01	55.9	50.5	62.0	59.2	54.4	51.7
ST-2	2019-12-19	17:02	53.0	51.3	55.4	54.1	53.0	51.8
ST-2	2019-12-19	17:03	52.2	50.1	54.3	53.6	52.2	50.5
ST-2	2019-12-19	17:04	53.2	49.3	58.1	55.8	52.6	50.2
ST-2	2019-12-19	17:05	52.1	49.5	53.9	53.5	52.2	50.5
ST-2	2019-12-19	17:06	53.7	48.8	63.4	55.4	53.1	49.4
ST-2	2019-12-19	17:07	53.9	52.1	55.7	54.8	53.7	52.4
ST-2	2019-12-19	17:08	54.0	52.0	55.4	54.9	53.9	52.6
ST-2	2019-12-19	17:09	54.1	52.2	56.4	55.0	53.9	52.8
ST-2	2019-12-19	17:10	54.5	52.5	57.4	55.9	54.3	53.1
ST-2	2019-12-19	17:11	54.9	52.4	60.5	56.0	54.6	53.0
ST-2	2019-12-19	17:12	54.6	52.2	55.9	55.6	54.5	52.8
ST-2	2019-12-19	17:13	52.9	48.7	55.9	54.7	52.6	49.5
ST-2	2019-12-19	17:14	55.0	51.1	64.2	54.7	52.7	51.5
ST-2	2019-12-19	17:15	54.7	47.9	62.5	59.1	51.4	49.0
ST-2	2019-12-19	17:16	52.3	47.4	57.0	55.1	51.4	48.6
ST-2	2019-12-19	17:17	51.9	47.8	55.8	53.8	51.4	48.8
ST-2	2019-12-19	17:18	53.4	51.6	55.1	54.7	53.2	52.1
ST-2	2019-12-19	17:19	55.0	52.3	57.5	56.8	54.6	53.0
ST-2	2019-12-19	17:20	58.9	54.5	62.5	61.5	57.9	55.2
ST-2	2019-12-19	17:21	54.9	52.6	57.1	56.4	54.4	53.1
ST-2	2019-12-19	17:22	53.9	51.9	55.6	54.8	53.8	52.9

Selected intervals removed from basel due to atypical skateboard roll-by on s measurement location.

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-2	2019-12-19	17:23	52.6	50.8	54.3	53.8	52.4	51.2
ST-2	2019-12-19	17:24	52.9	50.0	55.8	54.7	52.5	50.7
ST-2	2019-12-19	17:25	53.6	51.6	56.1	55.2	53.3	51.8
ST-2	2019-12-19	17:26	51.7	49.2	54.3	53.0	51.5	50.0
ST-2	2019-12-19	17:27	52.7	50.5	55.6	54.4	52.3	51.1
ST-2	2019-12-19	17:28	52.7	49.8	57.0	54.7	51.9	50.6
ST-2	2019-12-19	17:29	52.5	49.1	54.7	53.9	52.5	50.1
ST-2	2019-12-19	17:30	55.0	52.1	57.2	56.7	54.7	53.0
ST-2	2019-12-19	17:31	54.2	51.1	57.9	56.8	53.2	51.4
ST-2	2019-12-19	17:32	54.2	51.9	57.3	55.8	53.8	52.4
ST-2	2019-12-19	17:33	53.9	51.9	56.8	55.7	53.3	52.2
ST-2	2019-12-19	17:34	55.8	53.8	58.6	57.6	55.4	54.2
ST-2	2019-12-19	17:35	55.6	52.2	58.4	57.1	55.6	52.9
ST-2	2019-12-19	17:36	55.3	49.2	59.7	58.3	54.5	49.7
ST-2	2019-12-19	17:37	54.8	49.3	59.1	56.9	54.3	51.9
ST-2	2019-12-19	17:38	55.5	51.3	59.3	57.2	55.0	53.1
ST-2	2019-12-19	17:39	56.9	53.1	60.5	58.9	56.5	54.2
ST-2	2019-12-19	17:40	55.2	50.8	58.8	57.5	54.6	52.2
ST-2	2019-12-19	17:41	57.8	53.7	60.1	58.9	57.8	55.9
ST-2	2019-12-19	17:42	55.9	51.8	59.6	58.3	55.2	52.8
ST-2	2019-12-19	17:43	55.6	51.8	58.6	57.4	55.5	52.9
ST-2	2019-12-19	17:44	54.9	52.4	58.4	56.7	54.5	52.8
ST-2	2019-12-19	17:45	55.9	52.8	58.6	57.7	55.5	53.8
ST-2	2019-12-19	17:46	56.4	54.2	58.7	57.9	56.0	54.8
ST-2	2019-12-19	17:47	57.5	55.4	59.2	58.8	57.5	56.0
ST-2	2019-12-19	17:48	56.5	53.7	59.3	58.6	56.2	54.3
ST-2	2019-12-19	17:49	56.7	53.1	60.7	59.1	56.1	53.9
ST-2	2019-12-19	17:50	57.8	55.5	60.7	59.7	57.4	56.1
ST-2	2019-12-19	17:51	56.8	52.9	58.9	58.4	56.7	54.2
ST-2	2019-12-19	17:52	57.0	53.4	59.7	58.9	57.1	54.2
ST-2	2019-12-19	17:53	57.0	54.3	59.9	58.5	56.9	54.8
ST-2	2019-12-19	17:54	57.6	54.3	60.2	59.4	57.4	55.3
ST-2	2019-12-19	17:55	57.1	54.0	59.8	59.0	56.9	54.8
ST-2	2019-12-19	17:56	56.9	53.0	60.0	59.1	56.4	54.6
ST-2	2019-12-19	17:57	55.3	52.4	59.5	57.1	55.0	53.2
ST-2	2019-12-19	17:58	54.0	52.2	56.7	55.4	53.7	52.6
ST-2	2019-12-19	17:59	55.0	52.2	58.4	56.8	54.8	52.9
ST-2	2019-12-19	18:00	55.0	51.2	57.8	56.8	55.1	51.7
ST-2	2019-12-19	18:01	52.9	49.9	56.0	54.4	52.7	50.7
ST-2	2019-12-19	18:02	54.6	50.8	57.3	56.2	54.3	52.8
ST-2	2019-12-19	18:03	55.8	53.7	58.2	56.9	55.7	54.2
ST-2	2019-12-19	18:04	57.5	53.9	60.0	59.5	57.4	54.8
ST-2	2019-12-19	18:05	57.1	54.0	60.4	59.2	56.6	55.0
ST-2	2019-12-19	18:06	56.2	52.2	59.3	58.3	55.8	53.1
ST-2	2019-12-19	18:07	55.2	52.0	58.3	56.9	55.1	53.1
ST-2	2019-12-19	18:08	54.5	52.4	57.5	56.1	54.2	52.5
ST-2	2019-12-19	18:09	54.7	52.3	56.5	56.0	54.7	53.1
ST-2	2019-12-19	18:10	54.9	52.2	57.7	56.5	54.8	53.1
ST-2	2019-12-19	18:11	52.6	49.5	55.8	54.1	52.4	50.3
ST-2	2019-12-19	18:12	53.4	50.7	55.7	55.0	53.2	51.3
ST-2	2019-12-19	18:13	51.8	48.3	54.8	53.4	51.9	49.8
ST-2	2019-12-19	18:14	53.5	50.5	58.2	55.9	52.4	51.0
ST-2	2019-12-19	18:15	53.5	50.2	55.9	55.4	53.4	50.9
ST-2	2019-12-19	18:16	52.9	49.8	56.3	54.8	52.4	50.4
ST-2	2019-12-19	18:17	54.3	51.4	56.5	55.6	54.3	52.5
ST-2	2019-12-19	18:18	51.4	47.9	54.6	53.6	51.0	48.7
ST-2	2019-12-19	18:19	53.5	49.3	56.4	55.6	53.4	50.3
ST-2	2019-12-19	18:20	54.3	53.0	56.1	55.6	54.1	53.2
ST-2	2019-12-19	18:21	55.2	53.5	56.9	56.1	55.3	54.0
ST-2	2019-12-19	18:22	53.2	50.6	55.5	54.7	53.1	51.5
ST-2	2019-12-19	18:23	54.0	50.7	57.8	56.5	53.3	52.0
ST-2	2019-12-19	18:24	55.3	51.6	58.1	57.0	55.1	53.2
ST-2	2019-12-19	18:25	55.0	52.5	58.0	57.0	54.6	53.3
ST-2	2019-12-19	18:26	55.1	53.0	57.0	56.4	55.1	53.6
ST-2	2019-12-19	18:27	54.9	52.5	58.3	56.5	54.6	53.1
ST-2	2019-12-19	18:28	55.1	51.5	58.5	57.4	54.7	52.1
ST-2	2019-12-19	18:29	54.6	51.1	57.6	56.5	54.3	52.4
ST-2	2019-12-19	18:30	56.1	52.8	59.6	57.8	56.0	53.6
ST-2	2019-12-19	18:31	56.3	53.4	59.9	58.3	55.7	54.2
ST-2	2019-12-19	18:32	58.5	54.8	62.5	60.6	58.1	55.8
ST-2	2019-12-19	18:33	57.0	53.4	61.8	59.3	56.7	54.3
ST-2	2019-12-19	18:34	57.2	52.4	61.9	60.1	56.4	53.4
ST-2	2019-12-19	18:35	57.8	51.9	60.6	59.8	58.3	52.6
ST-2	2019-12-19	18:36	59.1	57.1	60.5	60.4	59.1	57.6
ST-2	2019-12-19	18:37	59.2	57.1	61.3	60.6	58.9	58.1
ST-2	2019-12-19	18:38	59.4	56.8	60.8	60.6	59.5	57.7
ST-2	2019-12-19	18:39	56.7	55.0	58.5	58.2	56.6	55.3

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-2	2019-12-19	18:40	57.2	54.6	59.9	59.2	56.8	55.2
ST-2	2019-12-19	18:41	58.2	55.6	60.0	59.5	58.2	56.8
ST-2	2019-12-19	18:42	57.6	55.8	59.7	59.2	57.4	56.3
ST-2	2019-12-19	18:43	56.6	54.0	60.3	58.0	56.3	54.6
ST-2	2019-12-19	18:44	55.3	52.3	58.6	57.6	54.6	52.8
ST-2	2019-12-19	18:45	57.2	53.3	60.1	59.0	57.1	54.3
ST-2	2019-12-19	18:46	58.4	55.1	60.8	60.0	58.0	56.6
ST-2	2019-12-19	18:47	59.7	55.0	63.8	61.9	59.1	57.0
ST-2	2019-12-19	18:48	59.9	56.0	62.1	61.4	60.0	57.9
ST-2	2019-12-19	18:49	61.2	58.5	63.9	62.8	61.2	59.2
ST-2	2019-12-19	18:50	62.6	58.6	65.6	64.6	62.2	60.4
ST-2	2019-12-19	18:51	62.0	58.1	64.4	63.6	62.1	59.5
ST-2	2019-12-19	18:52	62.0	57.8	64.4	63.8	61.7	59.6
ST-2	2019-12-19	18:53	61.4	58.8	63.3	62.8	61.4	59.8
ST-2	2019-12-19	18:54	62.1	59.5	64.4	63.6	62.1	60.3
ST-2	2019-12-19	18:55	62.5	60.4	65.6	64.4	62.1	61.1
ST-2	2019-12-19	18:56	62.2	60.5	64.1	63.5	61.9	61.1
ST-2	2019-12-19	18:57	60.9	59.0	63.1	62.0	60.9	59.5
ST-2	2019-12-19	18:58	59.9	56.7	62.1	61.6	59.9	58.1
ST-2	2019-12-19	18:59	60.4	55.9	62.8	62.3	60.3	58.0
ST-2	2019-12-19	19:00	60.5	57.2	62.8	62.1	60.5	59.0
ST-2	2019-12-19	19:01	59.9	55.7	62.5	61.4	59.7	58.1
ST-2	2019-12-19	19:02	59.8	56.6	62.2	61.0	60.0	57.7
ST-2	2019-12-19	19:03	60.0	55.0	61.9	61.4	60.0	58.3
ST-2	2019-12-19	19:04	59.5	56.4	62.2	61.3	59.3	57.5
ST-2	2019-12-19	19:05	59.8	55.5	62.7	61.7	59.6	57.7
ST-2	2019-12-19	19:06	59.6	56.9	61.2	60.8	59.6	58.2
ST-2	2019-12-19	19:07	57.9	52.6	61.5	60.0	58.2	54.3
ST-2	2019-12-19	19:08	61.1	58.5	63.4	62.4	61.0	59.5
ST-2	2019-12-19	19:09	59.3	51.6	63.9	61.4	59.0	55.5
ST-2	2019-12-19	19:10	59.8	56.6	62.4	61.6	59.6	57.8
ST-2	2019-12-19	19:11	59.7	55.2	62.6	61.8	59.6	56.6
ST-2	2019-12-19	19:12	59.0	55.0	61.6	60.8	59.0	57.0
ST-2	2019-12-19	19:13	60.2	57.4	62.9	61.9	60.1	58.3
ST-2	2019-12-19	19:14	59.0	54.1	62.9	60.7	58.7	56.6
ST-2	2019-12-19	19:15	60.5	56.9	63.1	62.1	60.6	57.9
ST-2	2019-12-19	19:16	60.0	53.9	63.6	62.0	59.9	56.2
ST-2	2019-12-19	19:17	60.9	55.2	63.1	62.1	61.0	59.1
ST-2	2019-12-19	19:18	58.0	51.5	61.5	60.5	57.9	52.9
ST-2	2019-12-19	19:19	59.7	56.4	62.7	61.1	59.5	57.6
ST-2	2019-12-19	19:20	60.1	55.2	62.6	61.6	60.0	57.6
ST-2	2019-12-19	19:21	60.3	55.4	63.5	62.6	60.0	56.6
ST-2	2019-12-19	19:22	59.5	54.4	63.1	61.4	59.2	57.0
ST-2	2019-12-19	19:23	59.5	50.9	63.3	61.0	59.5	55.7
ST-2	2019-12-19	19:24	58.8	52.2	62.0	60.7	58.5	55.6
ST-2	2019-12-19	19:25	59.1	54.4	61.6	60.7	58.8	56.8
ST-2	2019-12-19	19:26	59.2	54.7	61.9	61.2	59.3	55.5
ST-2	2019-12-19	19:27	58.0	52.7	61.6	59.9	57.7	55.5
ST-2	2019-12-19	19:28	58.5	51.0	62.6	60.5	58.2	55.2
ST-2	2019-12-19	19:29	55.9	48.7	59.5	58.4	55.4	52.2
ST-2	2019-12-19	19:30	56.1	49.7	59.0	57.9	56.3	52.4
ST-2	2019-12-19	19:31	56.8	51.6	59.7	58.7	56.5	53.1
ST-2	2019-12-19	19:32	57.6	52.6	60.1	59.4	57.6	53.8
ST-2	2019-12-19	19:33	57.5	53.2	61.1	59.2	57.2	55.4
ST-2	2019-12-19	19:34	56.3	49.9	59.5	58.4	55.9	53.1
ST-2	2019-12-19	19:35	57.0	47.5	60.5	59.4	57.1	51.1
ST-2	2019-12-19	19:36	58.4	54.4	61.6	60.8	58.0	55.2
ST-2	2019-12-19	19:37	57.9	50.2	61.7	59.9	57.8	52.7
ST-2	2019-12-19	19:38	58.3	54.6	60.5	59.7	58.4	56.3
ST-2	2019-12-19	19:39	58.2	53.5	62.2	60.7	57.4	55.1
ST-2	2019-12-19	19:40	61.2	55.2	64.0	63.0	61.0	58.3
ST-2	2019-12-19	19:41	61.7	57.1	64.5	63.6	61.5	58.8
ST-2	2019-12-19	19:42	59.5	56.1	63.5	60.9	59.3	57.4
ST-2	2019-12-19	19:43	60.1	52.1	63.0	61.7	60.2	56.6
ST-2	2019-12-19	19:44	59.3	56.3	61.7	61.1	59.2	56.6
ST-2	2019-12-19	19:45	58.4	55.7	61.6	60.0	57.8	56.2
ST-2	2019-12-19	19:46	58.2	50.6	60.9	60.0	58.4	52.7
ST-2	2019-12-19	19:47	57.7	53.5	60.6	59.5	57.5	54.5
ST-2	2019-12-19	19:48	58.8	55.2	61.5	60.2	58.9	56.3
ST-2	2019-12-19	19:49	57.2	52.7	60.1	58.8	57.1	53.9
ST-2	2019-12-19	19:50	56.7	53.5	59.6	58.4	56.4	54.3
ST-2	2019-12-19	19:51	58.0	53.6	60.0	59.6	58.1	55.7
ST-2	2019-12-19	19:52	58.9	54.8	62.1	60.3	58.7	56.4
ST-2	2019-12-19	19:53	57.7	51.8	60.2	59.4	57.8	54.3
ST-2	2019-12-19	19:54	57.8	51.8	60.0	59.3	57.9	55.0
ST-2	2019-12-19	19:55	58.4	54.1	61.2	60.5	58.1	55.9
ST-2	2019-12-19	19:56	59.5	55.6	62.8	61.5	59.2	56.6

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-2	2019-12-19	19:57	60.5	55.7	63.8	62.3	60.3	57.9
ST-2	2019-12-19	19:58	59.9	53.5	63.1	62.4	59.5	54.8
ST-2	2019-12-19	19:59	57.7	54.0	61.0	59.6	57.3	55.1
ST-2	2019-12-19	20:00	58.5	55.6	60.7	59.8	58.5	56.4
ST-2	2019-12-19	20:01	58.3	55.8	60.2	59.4	58.2	56.9
ST-2	2019-12-19	20:02	57.7	52.5	60.8	59.7	57.6	54.3
ST-2	2019-12-19	20:03	55.9	47.7	60.0	58.3	56.0	49.8
ST-2	2019-12-19	20:04	56.9	51.5	62.0	58.9	56.6	53.4
ST-2	2019-12-19	20:05	55.8	52.0	58.5	57.6	55.6	52.9
ST-2	2019-12-19	20:06	58.0	51.1	63.6	61.1	56.7	53.8
ST-2	2019-12-19	20:07	59.7	53.0	63.1	62.2	59.5	55.6
ST-2	2019-12-19	20:08	59.9	56.1	62.5	61.6	59.9	57.5
ST-2	2019-12-19	20:09	59.4	54.3	62.8	61.8	58.8	56.0
ST-2	2019-12-19	20:10	59.0	54.8	61.6	60.7	58.8	56.5
ST-2	2019-12-19	20:11	58.4	53.2	61.6	60.7	57.9	54.4
ST-2	2019-12-19	20:12	59.5	56.7	62.2	61.4	59.1	57.5
ST-2	2019-12-19	20:13	60.7	56.3	62.8	62.2	61.1	57.3
ST-2	2019-12-19	20:14	59.2	54.5	62.5	61.3	58.8	56.0
ST-2	2019-12-19	20:15	58.7	54.0	61.7	60.8	58.5	55.3
ST-2	2019-12-19	20:16	59.1	54.6	62.1	61.1	58.8	56.3
ST-2	2019-12-19	20:17	59.5	52.6	63.1	61.4	59.7	54.6
ST-2	2019-12-19	20:18	58.7	51.2	62.7	61.4	58.3	53.0
ST-2	2019-12-19	20:19	57.6	49.5	61.1	59.7	57.6	53.4
ST-2	2019-12-19	20:20	57.9	48.3	61.6	60.4	57.5	52.1
ST-2	2019-12-19	20:21	58.8	52.0	62.0	60.6	59.0	55.2
ST-2	2019-12-19	20:22	58.5	56.2	61.1	60.3	58.1	56.7
ST-2	2019-12-19	20:23	57.6	52.8	60.5	59.5	57.6	54.0
ST-2	2019-12-19	20:24	59.3	50.6	62.5	61.4	59.0	56.5
ST-2	2019-12-19	20:25	58.4	52.5	61.3	60.4	58.1	54.8
ST-2	2019-12-19	20:26	59.4	52.5	63.3	61.7	59.1	56.0
ST-2	2019-12-19	20:27	59.0	52.0	61.6	60.9	59.2	54.5
ST-2	2019-12-19	20:28	56.3	51.1	59.1	58.4	56.0	52.8
ST-2	2019-12-19	20:29	58.6	53.8	60.9	60.0	58.6	55.7
ST-2	2019-12-19	20:30	56.9	51.6	59.7	58.9	56.9	52.6
ST-2	2019-12-19	20:31	56.7	51.4	61.3	58.9	56.2	52.9
ST-2	2019-12-19	20:32	58.9	50.8	62.9	61.3	58.9	53.3
ST-2	2019-12-19	20:33	57.9	50.9	61.4	60.6	57.8	51.6
ST-2	2019-12-19	20:34	59.9	56.3	63.7	61.8	59.7	57.3
ST-2	2019-12-19	20:35	59.6	53.6	63.6	61.6	59.4	56.8
ST-2	2019-12-19	20:36	59.6	55.3	63.8	62.4	58.3	57.0
ST-2	2019-12-19	20:37	60.2	48.8	63.1	61.7	60.4	55.7
ST-2	2019-12-19	20:38	59.5	48.7	62.7	61.8	59.7	53.3
ST-2	2019-12-19	20:39	56.3	47.6	60.1	59.1	56.1	50.3
ST-2	2019-12-19	20:40	56.0	50.1	58.4	57.9	55.7	52.0
ST-2	2019-12-19	20:41	56.9	54.1	59.7	58.8	56.6	54.5
ST-2	2019-12-19	20:42	58.9	55.4	62.4	60.6	58.6	56.6
ST-2	2019-12-19	20:43	58.8	56.2	61.6	60.6	58.6	56.7
ST-2	2019-12-19	20:44	58.2	48.8	61.6	60.7	58.2	51.4
ST-2	2019-12-19	20:45	58.9	47.7	62.7	61.6	59.0	52.7
ST-2	2019-12-19	20:46	57.9	51.9	61.8	60.1	57.7	54.6
ST-2	2019-12-19	20:47	60.6	54.4	63.0	62.4	60.5	57.5
ST-2	2019-12-19	20:48	58.7	53.4	62.4	60.9	58.3	55.0
ST-2	2019-12-19	20:49	59.3	50.9	62.9	61.8	59.4	53.5
ST-2	2019-12-19	20:50	60.4	53.8	63.9	62.7	60.0	57.0
ST-2	2019-12-19	20:51	58.9	51.6	62.6	61.7	58.2	54.0
ST-2	2019-12-19	20:52	59.0	52.6	62.9	61.3	58.8	54.7
ST-2	2019-12-19	20:53	57.8	53.2	62.3	60.4	56.9	54.3
ST-2	2019-12-19	20:54	59.5	52.2	62.3	61.6	59.9	53.6
ST-2	2019-12-19	20:55	59.4	55.1	63.7	61.2	59.2	56.3
ST-2	2019-12-19	20:56	59.0	52.8	63.1	61.4	58.5	55.4
ST-2	2019-12-19	20:57	59.8	54.4	63.2	61.8	59.5	56.9
ST-2	2019-12-19	20:58	58.6	55.2	61.1	60.2	58.4	56.7
ST-2	2019-12-19	20:59	58.2	54.8	61.6	60.5	57.4	55.7
ST-3	2019-02-12	19:00	52.9	52.1	55.3	53.5	52.9	52.5
ST-3	2019-02-12	19:01	52.8	52.0	54.0	53.4	52.8	52.3
ST-3	2019-02-12	19:02	55.3	50.5	62.0	56.7	54.2	52.0
ST-3	2019-02-12	19:03	56.0	52.7	60.3	58.7	55.1	53.4
ST-3	2019-02-12	19:04	52.9	49.6	59.1	54.4	53.3	50.4
ST-3	2019-02-12	19:05	56.6	49.8	62.8	60.5	54.9	51.7
ST-3	2019-02-12	19:06	54.9	52.7	57.5	56.2	54.6	53.4
ST-3	2019-02-12	19:07	55.5	52.0	57.4	56.5	55.6	54.0
ST-3	2019-02-12	19:08	55.7	53.8	57.3	56.3	55.6	54.9
ST-3	2019-02-12	19:09	56.6	53.8	59.0	58.1	56.2	54.9
ST-3	2019-02-12	19:10	57.0	53.8	58.7	58.3	57.0	55.2
ST-3	2019-02-12	19:11	56.7	53.9	60.0	58.4	56.5	54.6
ST-3	2019-02-12	19:12	56.3	54.9	57.6	57.1	56.3	55.3
ST-3	2019-02-12	19:13	55.6	53.4	58.6	56.9	55.3	54.1

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-3	2019-02-12	19:14	57.0	55.2	59.0	58.4	56.5	55.6
ST-3	2019-02-12	19:15	58.8	56.8	61.2	60.4	58.6	57.3
ST-3	2019-02-12	19:16	58.1	56.7	59.6	59.0	58.1	57.3
ST-3	2019-02-12	19:17	57.1	55.4	58.5	58.0	57.1	56.2
ST-3	2019-02-12	19:18	55.7	52.9	57.8	57.2	55.6	54.1
ST-3	2019-02-12	19:19	55.3	52.9	60.6	57.1	54.1	53.5
ST-3	2019-02-12	19:20	53.7	50.0	60.5	56.0	52.3	50.5
ST-3	2019-02-12	19:21	52.3	50.8	54.0	53.3	52.2	51.3
ST-3	2019-02-12	19:22	52.7	51.1	55.1	53.5	52.5	51.5
ST-3	2019-02-12	19:23	52.6	49.7	59.3	54.6	51.9	50.5
ST-3	2019-02-12	19:24	51.3	50.3	52.6	52.0	51.2	50.6
ST-3	2019-02-12	19:25	55.7	51.6	63.2	57.6	54.0	52.0
ST-3	2019-02-12	19:26	56.4	53.1	58.1	57.5	56.4	55.0
ST-3	2019-02-12	19:27	58.3	52.3	63.9	60.9	57.6	53.8
ST-3	2019-02-12	19:28	58.3	53.8	63.9	60.9	56.8	55.0
ST-3	2019-02-12	19:29	56.2	52.0	61.5	59.3	55.2	53.1
ST-3	2019-02-12	19:30	56.7	51.6	60.2	59.3	56.2	52.7
ST-3	2019-02-12	19:31	58.9	53.0	66.1	61.6	56.7	54.0
ST-3	2019-02-12	19:32	56.8	52.3	64.2	57.8	56.2	53.3
ST-3	2019-02-12	19:33	58.3	54.8	64.9	60.1	57.6	56.0
ST-3	2019-02-12	19:34	54.5	50.0	58.2	57.1	54.6	51.2
ST-3	2019-02-12	19:35	56.3	53.5	58.6	57.7	56.2	54.5
ST-3	2019-02-12	19:36	55.1	51.8	60.4	56.2	54.4	52.9
ST-3	2019-02-12	19:37	54.6	52.1	59.7	56.6	54.1	52.6
ST-3	2019-02-12	19:38	54.8	51.9	60.5	58.1	53.4	52.3
ST-3	2019-02-12	19:39	54.7	51.9	56.7	55.9	54.6	52.9
ST-3	2019-02-12	19:40	55.0	52.7	57.7	56.7	54.6	53.4
ST-3	2019-02-12	19:41	56.4	53.2	62.3	58.1	55.4	54.3
ST-3	2019-02-12	19:42	55.5	51.8	63.0	57.1	54.2	52.6
ST-3	2019-02-12	19:43	54.4	51.8	57.4	55.4	54.3	53.0
ST-3	2019-02-12	19:44	55.6	51.7	58.2	57.4	55.2	53.9
ST-3	2019-02-12	19:45	56.0	53.6	58.8	57.5	55.8	54.3
ST-3	2019-02-12	19:46	58.7	55.1	61.8	60.4	58.6	55.6
ST-3	2019-02-12	19:47	58.3	55.9	60.3	59.7	58.2	56.7
ST-3	2019-02-12	19:48	59.0	55.5	64.1	60.7	58.4	56.7
ST-3	2019-02-12	19:49	57.5	54.9	60.2	59.2	57.3	55.3
ST-3	2019-02-12	19:50	58.9	57.2	60.8	60.1	58.7	57.9
ST-3	2019-02-12	19:51	59.3	57.1	60.6	60.1	59.3	58.2
ST-3	2019-02-12	19:52	59.5	56.2	61.8	61.1	59.4	57.3
ST-3	2019-02-12	19:53	57.9	55.3	61.1	59.1	57.9	56.3
ST-3	2019-02-12	19:54	56.7	53.5	60.7	58.5	56.1	54.2
ST-3	2019-02-12	19:55	60.4	57.1	68.9	62.9	58.7	57.6
ST-3	2019-02-12	19:56	58.4	54.9	61.2	59.9	58.4	56.2
ST-3	2019-02-12	19:57	59.6	57.3	61.5	60.6	59.4	58.5
ST-3	2019-02-12	19:58	59.1	57.2	61.1	60.0	59.1	57.9
ST-3	2019-02-12	19:59	57.5	54.4	59.5	58.8	57.6	55.4
ST-3	2019-02-12	20:00	56.9	52.6	59.5	58.6	57.1	53.2
ST-3	2019-02-12	20:01	57.1	52.6	60.6	59.6	56.3	53.8
ST-3	2019-02-12	20:02	56.5	52.5	61.0	58.9	55.8	54.4
ST-3	2019-02-12	20:03	55.8	52.3	57.8	57.0	55.8	53.8
ST-3	2019-02-12	20:04	54.8	51.6	59.9	57.4	54.2	52.1
ST-3	2019-02-12	20:05	53.8	51.7	58.4	55.8	53.1	52.1
ST-3	2019-02-12	20:06	52.2	50.5	56.1	52.9	52.2	51.2
ST-3	2019-02-12	20:07	52.9	50.9	53.9	53.6	53.1	51.3
ST-3	2019-02-12	20:08	52.9	50.5	57.8	54.4	52.8	51.4
ST-3	2019-02-12	20:09	52.2	50.4	53.9	53.1	52.2	51.1
ST-3	2019-02-12	20:10	51.2	48.8	53.7	52.8	51.1	49.7
ST-3	2019-02-12	20:11	50.1	48.1	52.7	51.1	50.0	49.0
ST-3	2019-02-12	20:12	49.6	47.8	52.1	50.8	49.2	48.4
ST-3	2019-02-12	20:13	52.1	47.5	56.2	54.7	51.2	48.8
ST-3	2019-02-12	20:14	52.9	48.9	56.9	54.8	52.6	50.4
ST-3	2019-02-12	20:15	53.0	49.4	56.4	54.8	52.8	50.5
ST-3	2019-02-12	20:16	53.0	49.6	55.8	54.5	52.9	50.9
ST-3	2019-02-12	20:17	54.1	50.5	57.0	55.4	54.2	51.9
ST-3	2019-02-12	20:18	55.0	50.9	58.7	57.6	53.9	51.7
ST-3	2019-02-12	20:19	62.8	52.5	70.4	67.1	57.9	53.1
ST-3	2019-02-12	20:20	53.2	50.0	57.6	54.6	53.0	51.1
ST-3	2019-02-12	20:21	52.2	48.5	58.4	54.6	50.9	49.1
ST-3	2019-02-12	20:22	55.3	48.4	63.3	58.7	51.1	49.3
ST-3	2019-02-12	20:23	70.6	52.3	80.3	74.6	62.3	52.6
ST-3	2019-02-12	20:24	56.8	51.1	65.3	60.7	54.1	52.9
ST-3	2019-02-12	20:25	52.6	49.1	57.2	55.2	51.9	50.1
ST-3	2019-02-12	20:26	52.2	50.2	53.5	53.1	52.3	50.9
ST-3	2019-02-12	20:27	51.7	49.4	54.9	52.8	51.5	50.1
ST-3	2019-02-12	20:28	54.1	51.1	57.7	55.3	53.6	52.5
ST-3	2019-02-12	20:29	60.4	51.9	71.4	65.7	54.1	52.5
ST-3	2019-02-12	20:30	52.6	50.9	54.1	53.5	52.6	51.8

			A-Weighted Sound Pressure Level (SPL, dBA)					
Measurement ID	Date	Time	Leq	Lmin	Lmax	L10	L50	L90
ST-3	2019-02-12	20:31	52.4	49.3	54.2	53.4	52.6	50.8
ST-3	2019-02-12	20:32	52.5	49.5	55.4	54.5	52.1	50.4
ST-3	2019-02-12	20:33	54.1	50.7	58.0	56.1	53.1	51.8
ST-3	2019-02-12	20:34	56.3	52.2	59.4	58.3	56.0	53.8
ST-3	2019-02-12	20:35	56.8	53.1	61.6	59.1	56.0	54.4
ST-3	2019-02-12	20:36	57.5	52.8	61.5	59.2	57.3	54.2
ST-3	2019-02-12	20:37	55.6	51.6	58.6	57.5	55.8	52.7
ST-3	2019-02-12	20:38	55.9	51.6	58.1	57.4	55.9	52.7
ST-3	2019-02-12	20:39	57.4	54.5	60.1	59.0	57.2	55.5
ST-3	2019-02-12	20:40	54.9	51.7	57.8	56.6	54.5	53.2
ST-3	2019-02-12	20:41	56.0	52.6	58.3	57.7	56.0	53.6
ST-3	2019-02-12	20:42	55.7	52.8	58.5	57.6	55.3	53.8
ST-3	2019-02-12	20:43	57.0	53.3	59.7	58.3	57.1	55.1
ST-3	2019-02-12	20:44	56.9	54.5	58.7	58.1	56.8	55.6
ST-3	2019-02-12	20:45	55.9	52.5	59.5	57.4	55.6	53.9
ST-3	2019-02-12	20:46	56.8	52.3	62.5	59.5	55.1	53.2
ST-3	2019-02-12	20:47	55.9	53.1	57.7	57.0	55.9	54.3
ST-3	2019-02-12	20:48	54.7	51.7	57.4	56.3	54.3	52.8
ST-3	2019-02-12	20:49	56.1	51.0	60.1	58.6	55.7	51.7
ST-3	2019-02-12	20:50	56.7	53.0	60.0	58.2	56.5	54.1
ST-3	2019-02-12	20:51	56.8	52.5	62.9	59.1	55.9	53.7
ST-3	2019-02-12	20:52	56.6	53.2	59.1	58.1	56.5	54.4
ST-3	2019-02-12	20:53	57.6	52.5	60.9	59.7	57.2	54.4
ST-3	2019-02-12	20:54	57.1	51.4	63.4	59.2	56.4	53.7
ST-3	2019-02-12	20:55	56.2	52.8	59.3	58.4	55.4	53.6
ST-3	2019-02-12	20:56	58.7	52.8	64.0	60.9	57.9	55.5
ST-3	2019-02-12	20:57	57.1	52.9	60.9	59.6	56.3	54.0
ST-3	2019-02-12	20:58	58.3	52.9	63.8	61.4	57.4	55.3
ST-3	2019-02-12	20:59	57.2	53.7	62.0	59.5	56.4	54.6

ATTACHMENT C

CONSTRUCTION SOUND LEVEL AND AUF VALUES

RCNM Construction Noise References

	Equipment Description	No. of Units	RCNM acoustical usage factor (%)	RCNM Lmax @ 50ft Spec 721.560	RCNM Lmax @ 50ft Measured	Single Unit L_{eq} (at 50ft)	Aggregate L_{eq} (at 50ft)	Hours of Ops	12-Hr L_{eq}, dBA (at 50ft)
Phase 1	Air Compressor	1	0.4	80.0	78.0	76.0	76	8	74.3
	Generator	1	0.5	82.0	81.0	79.0	79	8	77.2
	No Other Equipment	-	-	-	-	-	-	-	-
Phase 2	Drill Rig	1	0.5	80	N/A	77.0	77	8	75.2
	Excavator	1	0.4	85	81	81.0	81	8	79.3
	Forklift (Backhoe)	1	0.4	80.0	78.0	76.0	76	4	71.2
Phase 3	Crane	1	0.16	85	81	77.0	77	8	75.3
	Forklift (Backhoe)	1	0.4	80	78	76.0	76	4	71.2
	Welder	1	0.4	73.0	74.0	69.0	69	8	67.3

APPENDIX D

TRIP GENERATION STUDY

CHEN RYAN

January 17, 2019

Meghan Haggblade
AECOM
401 West A Street, Suite 1200
San Diego, CA 92101

SUBJECT: Canyon Crest Academy Trip Generation Study

Dear Ms. Haggblade:

As per your request, Chen Ryan Associates prepared this technical letter to document the trip generation study performed at Canyon Crest Academy (CCA), a public charter school located within the City of San Diego.

BACKGROUND

The CCA Stadium Lighting Project (proposed project) includes the construction of four stadium lighting poles around the multi-sport field at CCA. The poles would be placed outside of the track, at the four corners of the multi-sport field. The maximum height of the pole and light fixture at the southwest corner of the multi-sport field would be 80 feet above the ground, while the other three poles and light fixtures would reach 90 feet above the ground level. All project features would occur within the existing footprint of the multi-sport field.

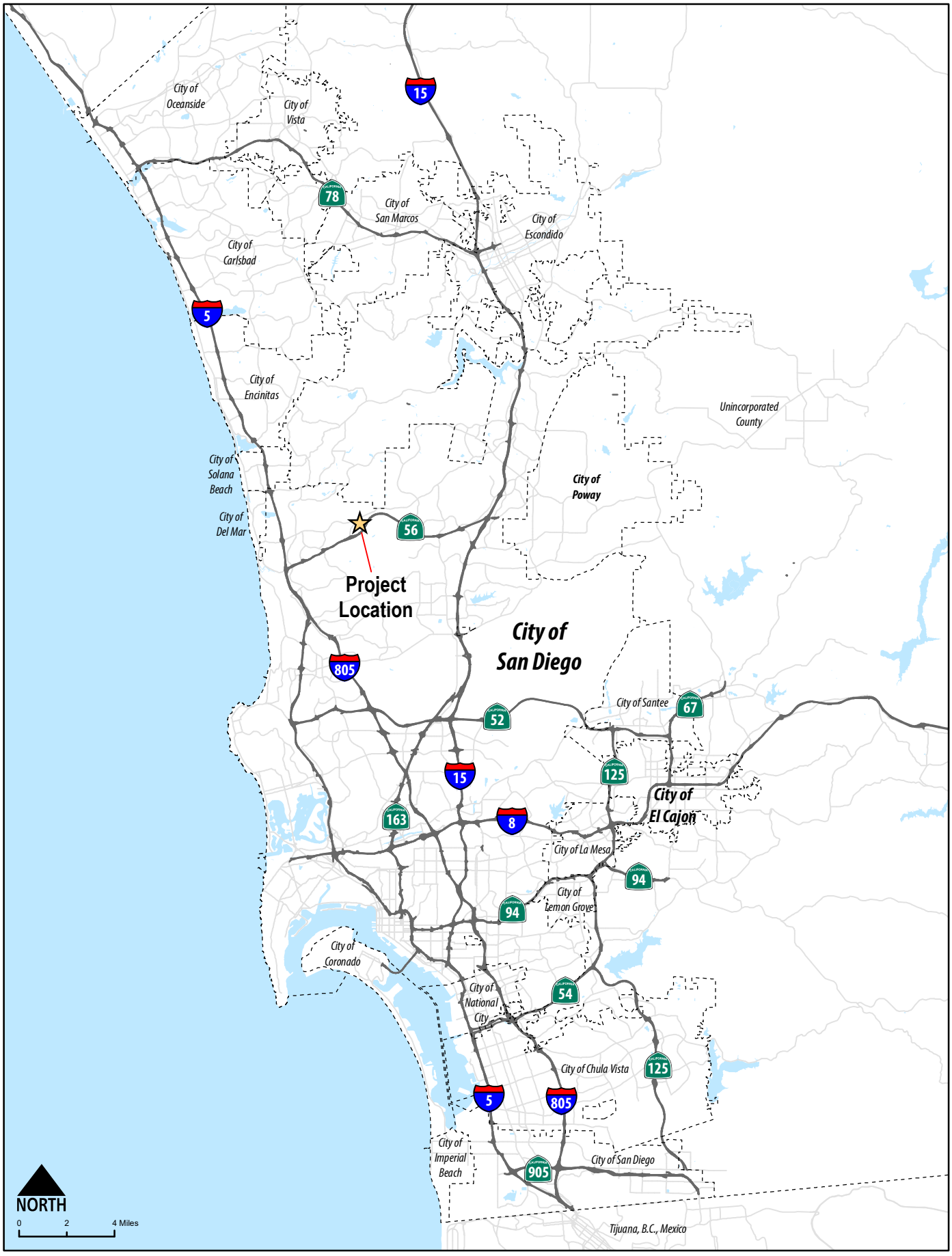
The light fixtures would be equipped with LED lights. On the southwest pole, two fixtures would be placed at 10 feet above the ground level for uplighting purposes to ensure there are no gaps in the lighting on the field. Two fixtures at 50 feet and two at 55 feet above the ground level would be placed on the southwest for egress illumination, to ensure a safe exit from the bleachers. This lighting does not extend into the parking lot, as there is already lighting underneath the solar panels installed in the parking lots. There would be 15 light fixtures placed at 80 feet above ground level on the southwest pole directed at the field and track to light the field. On the northwest pole, two uplighting fixtures would be placed at 15 feet above ground level. Two egress lighting fixtures would be placed at 60 feet and two at 65 feet above the ground level. 15 light fixtures would be placed at 90 feet above ground level for field lighting. For the two poles on the east side of the field, two uplighting fixtures would be placed at 15 feet above ground level, two egress lighting fixtures would be placed at 60 feet above ground level, and 14 lighting fixtures would be placed at 90 feet above ground level.

It is anticipated that construction of the proposed project would take roughly six to eight weeks and would occur during the summer when school is not in session. All light fixtures would be turned off by 9:30 PM.

The City of San Diego Trip Generation Manual (May 2003) Table 1 employs an industry standard trip generation rate for high schools. It is not anticipated that addition of the lighting would increase visitation at the sporting events, however, a trip generation study is warranted to examine if existing afternoon outdoor athletics events are presently incurring more vehicle traffic than non-event days. It should be noted that, high trip generation sports such as football are currently not offered at this time at CCA. If it is determined that vehicle traffic is significantly higher on game days compared to non-game days, a Transportation Impact Study would be required as stated in the City of San Diego Traffic Impact Study Manual (July 1998).

Figure 1 displays the location of Canyon Crest Academy. Access to this school are provided via three (3) driveways, as displayed in **Figure 2**. Descriptions of each individual driveway are provided below:

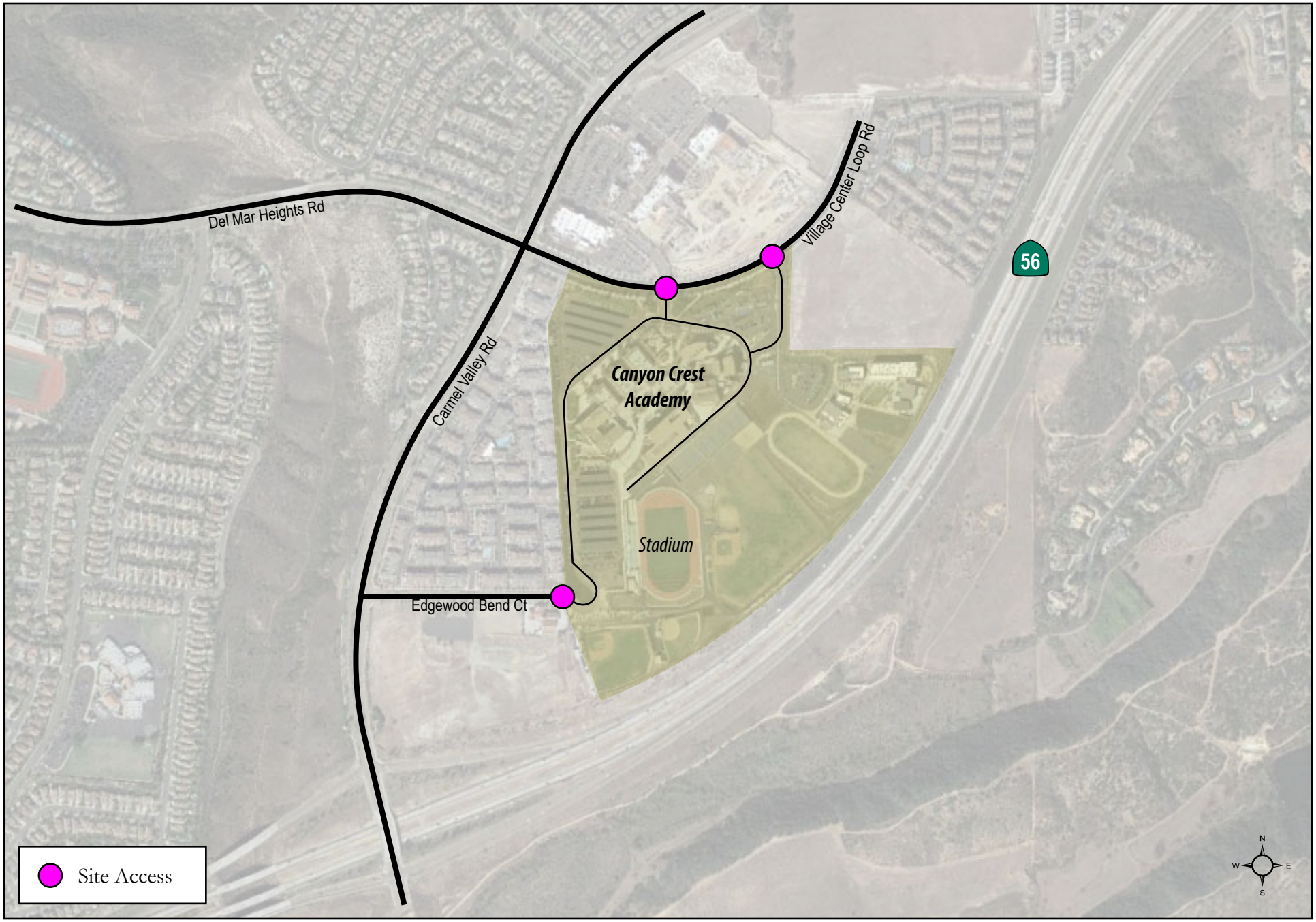
- *Driveway #1* is located off of Village Center Loop Road providing primary access to the northwestern parking lot area and the student drop-off/pick-up area during arrival and dismissal. This driveway serves as both an entrance and an exit for the school site.
- *Driveway #2* is located near Driveway #1 and also takes access off of Village Center Loop Road. However, Driveway #2 functions as the primary access for the northeastern parking lot area. This driveway too serves as both an entrance and an exit for the school site.
- *Driveway #3* is located off of Edgewood Bend Court providing access to the southwestern parking lot area. This driveway serves as both an entrance and an exit for the school site.



Canyon Crest Academy Trip Generation Study

CHEN RYAN

Figure 1
Regional Location



Canyon Crest Academy Trip Generation Study

Figure 2
Site Map

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DATA COLLECTION

Traffic entering and leaving the CCA site was collected at the three project driveways using 24-hour video recording technology, in which average daily traffic (ADT) and PM peak hour traffic volumes were obtained. The data collection process was conducted over three (3) different week days, including two (2) days in which outdoor athletics sporting events occurred (Boys Soccer) and one day in which no athletic sporting events occurred. These games typically begin at 3:00 PM and end at 4:30 PM.

Based upon the CCA schedule (**Attachment A**), the soccer games have a scheduled start time at 3 PM, which would anticipate that game-related trips would arrive between 30 minutes to 1 hour (2:00 – 3:00) before game time. Based upon the schedule and review of the counts, the ending of the game would be at 4:30, which would anticipate that game-related trips would depart the campus between 30 minutes to 1 hour (4:30 – 5:30) after the games' conclusion. Based on our review of the data, it was determined that the conclusion of outdoor athletics game times coincide with the overall campus's PM peak hour, between 4:30 PM and 5:30 PM.

Table 1 summarizes the data collected from the CCA site. Traffic counts are provided in **Attachment B**.

TABLE 1
CANYON CREST ACADEMY TRIP GENERATION

Count Date	Outdoor Event Day?	Schoolwide ADT	Hour before game time (in/out)	Hour after game time (in/out)
11/28/2018 (Wednesday)	Boys Soccer	10,689	912 (543 / 369)	952 (315 / 637)
12/18/2018 (Tuesday)	Boys Soccer	9,598	771 (494 / 277)	757 (212 / 545)
Event Day Average		10,144	842 (519 / 323)	855 (264 / 591)
12/13/2018 (Thursday)	No	10,062	757 (490 / 267)	781 (334 / 447)
Difference[1]		82	85 (29 / 56)	74 (-70 / 144)

Source: Bearcat Enterprises, Chen Ryan Associates, January 2019

Note:
[1] = Nominal difference between the Event Day Average and the Non-Event Day (12/13/18)

As shown in Table 1, the following conclusions were made regarding the data collected:

- CCA event days generate an average of 10,144 daily trips, with 842 trips occurring one hour before the game, and 855 trips occurring during the hour after the game.
- The Non-Event Day (December 13th, 2018) generated of 10,062 daily trips, with 757 trips occurring one hour before the game, and 781 trips occurring during the hour after the game.
- Event days incurred 82 more total daily trips with 85 additional trips (29 inbound / 56 outbound) during the hour period before games, and 74 additional trips (-70 inbound / 144 outbound) during the hour period after games.

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CONCLUSION

The installation of the proposed lightings project will result a later starting time for outdoor sports that utilized the athletic fields such as soccer and lacrosse. High trip generation sports such as football are currently not offered at this time at CCA. Due to the shift in starting time, it is anticipated that the 85 pre-game trips shown in Table 1 would occur between 4 PM and 6 PM. Whereas, the 74 post game trips would occur after the PM peak hour.

In accordance to the City of San Diego Traffic Impact Study Manual (July 1998), the Traffic Impact Study (TIS) Requirement Flow Chart (provided in **Attachment C**) states that projects that conforms to the Community Plan Land Use and do not generate greater than 1,000 ADT or more than 100 trips during the peak hour (based on driveway rates) are not required to conduct a Transportation Impact Study.

As shown above, the total trips generated by the outdoor events would not exceed 1,000 ADT or more than 100 trips during the PM peak hour. Thus, it can be concluded that a TIS would not be required for the proposed project.

Please feel free to contact me at (619) 756-3868 with any questions and/or comments.

Sincerely,

Phuong Nguyen, PE
Project Manager

ATTACHMENT A – CANYON CREST ACADEMY SCHEDULE

CCA College Visit Calendar, CCA Counseling, CCA Grading Periods, CCA School Events, CCA Testing, Canyon Crest Academy Foundation Calendar, Home Campus Schedules, CCA Envision Master Calendar Public 2018-2019

Dec 2018 (Pacific Time - Los Angeles)

Girls Soccer match took place off campus at Escondido Charter

Girls Soccer matches took place off campus

Girls Soccer matches took place at San Pasqual

Sun	Mon	Tue	Wed	Th		Sat
25	26	27	28	29	30	1
	3pm - Wrestling	GIVING TUESDAY	7pm - ETA Conservatory Cabaret @ Black Box Theater			9am - Wrestling
		12pm - UC Santa	2:15pm - SCAD -	7pm - Fall All-Envision Dance Production		9:30am - Soccer,
		3pm - Wrestling	3pm - Soccer, Boys	6pm - Wrestling All	8:15am - Coffee	9:30am - Wrestling
		3:30pm - Water	3pm - Wrestling		3pm - Basketball,	11am - Soccer, Girls
		4:30pm - Water	3:45pm - Soccer,		3pm - Wrestling	2pm - Soccer, Girls
		5:30pm - Basketball,	5:30pm - Basketball,		3:15pm - Soccer,	3:30pm - Basketball,
2	3	4	5	6	7	8
2pm - Cross	3pm - Soccer, Girls	3pm - Wrestling	Late Start	3pm - Wrestling	ETA Fall Play (BB)	
2pm - Cross	3pm - Soccer, Girls	4:30pm - Soccer,	4:30pm - Soccer,	3:15pm - Campus	12pm - Wrestling	9am - Wrestling
	3pm - Wrestling	5:30pm - Basketball,	4:30pm - Wrestling	4pm - Basketball,	4pm - Basketball,	9:30am - Water
	5:15pm - Water Polo	5:30pm - Basketball,	5:15pm - Water Polo	4:30pm - Soccer,	4pm - Water Polo,	10am - Water Polo,
	5:30pm - Basketball,	6pm - Basketball,	6pm - Wrestling	5:20pm - Water	5:30pm - Water	11am - Water Polo,
	6:30pm - Water	7pm - Basketball,		5:30pm - Basketball,	7pm - Water Polo,	2pm - Water Polo,
9	10	11	12	13	14	15
	Initialize M3 Grade	7:30am - Monthly	10am - 10th Grade	ETA Fall Play (BB)		
	10am - Student	10am - 10th Grade	3pm - Wrestling	3pm - Wrestling	10am - Wrestling	9am - Wrestling
	3pm - Soccer, Boys	3pm - Soccer, Boys	4pm - Basketball,	3:15pm - Soccer,	12pm - University of	10am - Wrestling
	3pm - Wrestling	3pm - Soccer, Boys	4:40pm - Soccer,	5pm - Basketball,	3pm - Wrestling	10:30am - Basketbal
	3:30pm - Soccer,	3pm - Wrestling	5:15pm - Water Polo	6pm - Soccer, Girls	3:15pm - Soccer,	4pm - Soccer, Boys
	3:30pm - Soccer,	3:30pm - Soccer,	5:30pm - Basketball,		4pm - Basketball,	5:30pm - Basketball,
	5:15pm - Water Polo	3:30pm - Soccer,	6:30pm - Water		5:30pm - Basketball,	7pm - Basketball,
16	17	18	19	20	21	22
	3pm - Basketball,	3pm - Soccer, Boys	8am - Late Start	Last day to drop a	3pm - Wrestling	8am - Water Polo,
	3pm - Soccer, Girls	3pm - Soccer, Boys	3pm - Wrestling	Last day to drop a	3:50pm - Water	9am - Wrestling
	3pm - Soccer, Girls	3pm - Soccer, Boys	5pm - Basketball,	12pm - Cambridge &	4pm - Basketball,	9am - Wrestling
	3pm - Wrestling	3pm - Wrestling	5pm - December	3pm - Soccer, Boys	4:30pm - Basketball,	11am - Water Polo,
	3:15pm - Soccer,	3:15pm - Water	5:15pm - Water Polo	3pm - Soccer, Girls	5:30pm - Basketball,	12pm - Basketball,
	5:15pm - Water Polo	3:30pm - Soccer,		3pm - Soccer, Girls	5:30pm - Basketball,	4pm - Water Polo,
23	24	25	26	27	28	29
	Winter Break--No School					
			11am - Field Hockey	5pm - Basketball,	6:30pm - Basketball,	
30	31	1	2	3	4	5
Winter Break--No School						

ATTACHMENT B – TRAFFIC COUNTS

Chen Ryan Associates

3900 Fifth Avenue, Suite 310 San Diego, CA 92103

Average Daily Traffic

Location: **Canyon Crest Academy Pointe**

Date: **Wednesday, November 28, 2018** Total Daily Volume: **4899** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	0	68	1359	218	245	86	332	88	445	342	597	408	413	138	2	158	0	0	0
0	0	0	0	0	0	0	69	146	19	19	34	17	34	41	248	56	152	53	0	14	0	0	0
0	0	0	0	0	0	5	258	26	80	15	156	26	179	49	195	81	133	26	2	93	0	0	0
0	0	0	0	0	0	14	488	25	123	30	84	20	172	82	94	106	79	27	0	50	0	0	0
0	0	0	0	0	0	49	544	21	23	22	58	25	60	170	60	165	49	32	0	1	0	0	0

Date: **Wednesday, November 28, 2018** Total Daily Volume: **2167** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	0	17	340	92	97	40	169	41	290	92	346	222	230	59	2	130	0	0	0
0	0	0	0	0	0	0	10	68	5	5	13	7	7	22	143	32	77	34	0	9	0	0	0
0	0	0	0	0	0	0	57	8	18	8	126	10	99	16	113	39	92	11	2	76	0	0	0
0	0	0	0	0	0	2	121	10	65	15	10	11	144	18	53	64	39	7	0	45	0	0	0
0	0	0	0	0	0	15	152	6	9	12	20	13	40	36	37	87	22	7	0	0	0	0	0

Date: **Wednesday, November 28, 2018** Total Daily Volume: **2732** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	0	51	1019	126	148	46	163	47	155	250	251	186	183	79	0	28	0	0	0
0	0	0	0	0	0	0	59	78	14	14	21	10	27	19	105	24	75	19	0	5	0	0	0
0	0	0	0	0	0	5	201	18	62	7	30	16	80	33	82	42	41	15	0	17	0	0	0
0	0	0	0	0	0	12	367	15	58	15	74	9	28	64	41	42	40	20	0	5	0	0	0
0	0	0	0	0	0	34	392	15	14	10	38	12	20	134	23	78	27	25	0	1	0	0	0

Chen Ryan Associates

3900 Fifth Avenue, Suite 310 San Diego, CA 92103

Average Daily Traffic

Location: **Canyon Crest Academy Pointe**

Date: **Thursday, December 13, 2018** Total Daily Volume: **4387** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
7	0	0	0	0	3	43	1052	324	238	68	367	89	439	295	506	256	408	204	86	2	0	0	0
0	0	0	0	0	0	0	55	236	27	8	59	24	59	31	197	54	134	43	29	2	0	0	0
1	0	0	0	0	0	9	173	24	87	27	124	18	196	31	167	80	141	19	14	0	0	0	0
6	0	0	0	0	0	12	373	27	87	18	105	27	134	71	98	69	97	70	23	0	0	0	0
0	0	0	0	0	3	22	451	37	37	15	79	20	50	162	44	53	36	72	20	0	0	0	0

Date: **Thursday, December 13, 2018** Total Daily Volume: **1627** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
3	0	0	0	0	0	8	230	102	80	17	136	38	224	44	265	95	219	119	47	0	0	0	0
0	0	0	0	0	0	0	6	73	6	3	17	15	15	14	102	26	47	17	13	0	0	0	0
0	0	0	0	0	0	3	34	10	14	7	97	2	88	9	85	22	90	11	9	0	0	0	0
3	0	0	0	0	0	2	88	7	43	5	7	15	96	9	52	34	59	43	19	0	0	0	0
0	0	0	0	0	0	3	102	12	17	2	15	6	25	12	26	13	23	48	6	0	0	0	0

Date: **Thursday, December 13, 2018** Total Daily Volume: **2760** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
4	0	0	0	0	3	35	822	222	158	51	231	51	215	251	241	161	189	85	39	2	0	0	0
0	0	0	0	0	0	0	49	163	21	5	42	9	44	17	95	28	87	26	16	2	0	0	0
1	0	0	0	0	0	6	139	14	73	20	27	16	108	22	82	58	51	8	5	0	0	0	0
3	0	0	0	0	0	10	285	20	44	13	98	12	38	62	46	35	38	27	4	0	0	0	0
0	0	0	0	0	3	19	349	25	20	13	64	14	25	150	18	40	13	24	14	0	0	0	0

Chen Ryan Associates

3900 Fifth Avenue, Suite 310 San Diego, CA 92103

Average Daily Traffic

Location: **Canyon Crest Academy Pointe**

Date: **Tuesday, December 18, 2018** Total Daily Volume: **4151** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	2	4	4	74	1095	239	177	86	307	84	406	293	467	276	297	154	74	92	20	0	0
0	0	0	2	0	0	5	47	170	17	12	56	19	55	33	215	42	82	55	20	15	17	0	0
0	0	0	0	0	0	6	199	39	65	19	117	27	161	36	103	56	137	37	15	34	3	0	0
0	0	0	0	4	0	20	374	14	72	12	79	20	132	89	87	104	50	36	29	43	0	0	0
0	0	0	0	0	4	43	475	16	23	43	55	18	58	135	62	74	28	26	10	0	0	0	0

Date: **Tuesday, December 18, 2018** Total Daily Volume: **1892** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	1	1	3	17	279	110	73	36	149	39	248	69	260	182	190	87	51	84	13	0	0
0	0	0	1	0	0	3	6	74	8	2	24	9	13	18	120	29	54	35	13	11	10	0	0
0	0	0	0	0	0	1	52	27	14	14	91	18	91	18	51	35	91	20	10	33	3	0	0
0	0	0	0	1	0	9	96	4	37	0	12	9	104	19	51	75	27	20	20	40	0	0	0
0	0	0	0	0	3	4	125	5	14	20	22	3	40	14	38	43	18	12	8	0	0	0	0

Date: **Tuesday, December 18, 2018** Total Daily Volume: **2259** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	1	3	1	57	816	129	104	50	158	45	158	224	207	94	107	67	23	8	7	0	0
0	0	0	1	0	0	2	41	96	9	10	32	10	42	15	95	13	28	20	7	4	7	0	0
0	0	0	0	0	0	5	147	12	51	5	26	9	70	18	52	21	46	17	5	1	0	0	0
0	0	0	0	3	0	11	278	10	35	12	67	11	28	70	36	29	23	16	9	3	0	0	0
0	0	0	0	0	1	39	350	11	9	23	33	15	18	121	24	31	10	14	2	0	0	0	0

Chen Ryan Associates

3900 Fifth Avenue, Suite 310 San Diego, CA 92103

Average Daily Traffic

Location: **Community Park Pointe**

Date: **Wednesday, November 28, 2018** Total Daily Volume: **3388** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
7	0	0	0	0	4	35	824	641	68	55	92	178	190	410	460	134	137	76	19	47	5	0	6
7	0	0	0	0	0	5	120	511	17	10	25	17	73	33	280	17	65	3	0	21	3	0	0
0	0	0	0	0	0	1	84	111	23	18	28	35	50	39	96	20	46	27	3	13	2	0	3
0	0	0	0	0	0	9	280	7	21	12	21	98	48	81	56	24	18	38	3	5	0	0	0
0	0	0	0	0	4	20	340	12	7	15	18	28	19	257	28	73	8	8	13	8	0	0	3

Date: **Wednesday, November 28, 2018** Total Daily Volume: **2149** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
6	0	0	0	0	0	9	438	352	46	37	62	94	150	227	394	120	128	36	3	38	5	0	4
6	0	0	0	0	0	3	45	261	12	4	17	8	50	21	247	15	59	1	0	16	3	0	0
0	0	0	0	0	0	0	61	80	17	12	21	6	44	22	79	16	46	9	1	13	2	0	2
0	0	0	0	0	0	3	167	4	14	8	14	69	43	16	44	23	18	21	0	3	0	0	0
0	0	0	0	0	0	3	165	7	3	13	10	11	13	168	24	66	5	5	2	6	0	0	2

Date: **Wednesday, November 28, 2018** Total Daily Volume: **1239** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	4	26	386	289	22	18	30	84	40	183	66	14	9	40	16	9	0	0	2
1	0	0	0	0	0	2	75	250	5	6	8	9	23	12	33	2	6	2	0	5	0	0	0
0	0	0	0	0	0	1	23	31	6	6	7	29	6	17	17	4	0	18	2	0	0	0	1
0	0	0	0	0	0	6	113	3	7	4	7	29	5	65	12	1	0	17	3	2	0	0	0
0	0	0	0	0	4	17	175	5	4	2	8	17	6	89	4	7	3	3	11	2	0	0	1

Chen Ryan Associates

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Average Daily Traffic

Location: **Community Park Pointe**

Date: **Thursday, December 13, 2018** Total Daily Volume: **3331** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
3	0	0	0	2	0	18	623	535	44	64	78	82	139	307	458	151	336	115	315	51	7	2	1
0	0	0	0	0	0	2	83	378	5	15	20	8	32	18	290	14	33	63	34	24	4	2	0
0	0	0	0	0	0	5	91	141	10	19	26	23	48	18	71	37	102	4	78	20	3	0	0
1	0	0	0	2	0	2	179	10	16	17	14	39	41	71	54	63	129	9	164	6	0	0	0
2	0	0	0	0	0	9	270	6	13	13	18	12	18	200	43	37	72	39	39	1	0	0	1

Date: **Thursday, December 13, 2018** Total Daily Volume: **2027** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
2	0	0	0	2	0	5	333	305	27	41	54	47	105	163	372	91	192	78	169	33	7	1	0
0	0	0	0	0	0	0	38	194	3	6	11	4	14	13	245	8	21	47	15	16	4	1	0
0	0	0	0	0	0	2	55	102	8	12	22	10	43	9	63	15	67	2	16	13	3	0	0
0	0	0	0	2	0	0	105	6	10	12	9	27	39	10	36	45	72	4	114	4	0	0	0
2	0	0	0	0	0	3	135	3	6	11	12	6	9	131	28	23	32	25	24	0	0	0	0

Date: **Thursday, December 13, 2018** Total Daily Volume: **1304** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	0	13	290	230	17	23	24	35	34	144	86	60	144	37	146	18	0	1	1
0	0	0	0	0	0	2	45	184	2	9	9	4	18	5	45	6	12	16	19	8	0	1	0
0	0	0	0	0	0	3	36	39	2	7	4	13	5	9	8	22	35	2	62	7	0	0	0
1	0	0	0	0	0	2	74	4	6	5	5	12	2	61	18	18	57	5	50	2	0	0	0
0	0	0	0	0	0	6	135	3	7	2	6	6	9	69	15	14	40	14	15	1	0	0	1

Chen Ryan Associates

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Average Daily Traffic

Location: **Community Park Pointe**

Date: **Tuesday, December 18, 2018** Total Daily Volume: **2796** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	2	0	1	72	588	523	76	57	85	118	127	296	395	142	137	68	84	19	4	1	1
0	0	0	0	0	0	37	82	377	18	23	23	18	36	13	250	31	19	38	11	4	0	0	0
0	0	0	2	0	0	4	95	131	25	12	29	28	42	22	66	25	57	13	27	4	3	0	1
0	0	0	0	0	0	5	160	8	13	5	14	56	31	64	40	48	20	3	26	11	1	0	0
0	0	0	0	0	1	26	251	7	20	17	19	16	18	197	39	38	41	14	20	0	0	1	0

Date: **Tuesday, December 18, 2018** Total Daily Volume: **1656** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	2	0	0	4	296	286	43	33	54	70	96	160	313	97	89	25	71	12	3	1	1
0	0	0	0	0	0	0	30	197	10	8	12	11	20	6	198	22	16	11	7	1	0	0	0
0	0	0	2	0	0	2	59	84	14	6	24	9	38	4	58	19	51	4	22	2	2	0	1
0	0	0	0	0	0	0	82	3	8	4	9	39	27	14	33	28	16	2	25	9	1	0	0
0	0	0	0	0	0	2	125	2	11	15	9	11	11	136	24	28	6	8	17	0	0	1	0

Date: **Tuesday, December 18, 2018** Total Daily Volume: **1140** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	1	68	292	237	33	24	31	48	31	136	82	45	48	43	13	7	1	0	0
0	0	0	0	0	0	37	52	180	8	15	11	7	16	7	52	9	3	27	4	3	0	0	0
0	0	0	0	0	0	2	36	47	11	6	5	19	4	18	8	6	6	9	5	2	1	0	0
0	0	0	0	0	0	5	78	5	5	1	5	17	4	50	7	20	4	1	1	2	0	0	0
0	0	0	0	0	1	24	126	5	9	2	10	5	7	61	15	10	35	6	3	0	0	0	0

Chen Ryan Associates

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Average Daily Traffic

Location: **Edgewood Bend Ct**

Date: **Wednesday, November 28, 2018** Total Daily Volume: **2402** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	13	36	404	207	372	36	92	83	227	160	415	133	126	34	17	42	3	0	2
0	0	0	0	0	0	2	21	106	166	3	4	5	10	13	290	17	67	15	8	2	3	0	1
0	0	0	0	0	1	7	59	43	183	9	70	54	88	10	72	25	32	10	5	15	0	0	1
0	0	0	0	0	1	11	141	17	20	20	5	19	107	37	28	36	15	6	1	10	0	0	0
0	0	0	0	0	11	16	183	41	3	4	13	5	22	100	25	55	12	3	3	15	0	0	0

Date: **Wednesday, November 28, 2018** Total Daily Volume: **1194** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	2	17	140	177	360	32	13	76	43	110	112	48	38	8	13	3	1	0	1
0	0	0	0	0	0	1	15	85	165	3	1	4	3	2	62	5	20	3	6	2	1	0	0
0	0	0	0	0	1	5	28	39	181	7	1	53	11	5	23	9	11	2	3	0	0	0	1
0	0	0	0	0	1	7	37	13	12	19	4	16	18	28	14	11	4	2	1	1	0	0	0
0	0	0	0	0	0	4	60	40	2	3	7	3	11	75	13	23	3	1	3	0	0	0	0

Date: **Wednesday, November 28, 2018** Total Daily Volume: **1208** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	11	19	264	30	12	4	79	7	184	50	303	85	88	26	4	39	2	0	1
0	0	0	0	0	0	1	6	21	1	0	3	1	7	11	228	12	47	12	2	0	2	0	1
0	0	0	0	0	0	2	31	4	2	2	69	1	77	5	49	16	21	8	2	15	0	0	0
0	0	0	0	0	0	4	104	4	8	1	1	3	89	9	14	25	11	4	0	9	0	0	0
0	0	0	0	0	11	12	123	1	1	1	6	2	11	25	12	32	9	2	0	15	0	0	0

Chen Ryan Associates

3900 Fifth Avenue, Suite 310 San Diego, CA 92103

Average Daily Traffic

Location: **Edgewood Bend Ct**

Date: **Thursday, December 13, 2018** Total Daily Volume: **2353** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	19	58	848	70	51	9	171	23	226	155	418	72	156	20	36	12	5	3	0
0	0	0	0	0	0	8	19	57	5	1	15	5	12	11	265	18	60	2	5	8	3	1	0
1	0	0	0	0	0	16	117	6	26	2	81	9	113	22	88	17	52	6	18	1	0	0	0
0	0	0	0	0	0	20	327	3	16	2	54	4	81	37	38	19	35	4	4	0	1	1	0
0	0	0	0	0	19	14	385	4	4	4	21	5	20	85	27	18	9	8	9	3	1	1	0

Date: **Thursday, December 13, 2018** Total Daily Volume: **1153** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	11	41	600	20	37	6	80	12	49	95	106	27	40	5	20	4	0	0	0
0	0	0	0	0	0	5	14	12	3	0	10	4	9	2	55	8	22	1	3	0	0	0	0
0	0	0	0	0	0	14	95	4	23	1	2	4	24	11	27	6	7	1	10	1	0	0	0
0	0	0	0	0	0	12	228	1	8	1	51	1	10	30	12	7	8	1	0	0	0	0	0
0	0	0	0	0	11	10	263	3	3	4	17	3	6	52	12	6	3	2	7	3	0	0	0

Date: **Thursday, December 13, 2018** Total Daily Volume: **1200** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	8	17	248	50	14	3	91	11	177	60	312	45	116	15	16	8	5	3	0
0	0	0	0	0	0	3	5	45	2	1	5	1	3	9	210	10	38	1	2	8	3	1	0
1	0	0	0	0	0	2	22	2	3	1	79	5	89	11	61	11	45	5	8	0	0	0	0
0	0	0	0	0	0	8	99	2	8	1	3	3	71	7	26	12	27	3	4	0	1	1	0
0	0	0	0	0	8	4	122	1	1	0	4	2	14	33	15	12	6	6	2	0	1	1	0

Chen Ryan Associates

3900 Fifth Avenue, Suite 310 San Diego, CA 92103

Average Daily Traffic

Location: **Edgewood Bend Ct**

Date: **Tuesday, December 18, 2018** Total Daily Volume: **2651** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	1	50	864	65	59	18	161	17	239	182	451	162	127	90	60	78	23	0	4
0	0	0	0	0	0	4	23	52	2	2	17	4	8	22	274	18	58	28	18	10	18	0	3
0	0	0	0	0	0	13	119	5	31	3	67	2	121	23	114	32	28	30	18	28	4	0	1
0	0	0	0	0	0	17	366	5	23	4	49	4	81	37	42	74	24	13	21	33	1	0	0
0	0	0	0	0	1	16	356	3	3	9	28	7	29	100	21	38	17	19	3	7	0	0	0

Date: **Tuesday, December 18, 2018** Total Daily Volume: **1287** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	1	32	599	22	40	10	74	7	55	134	138	45	39	46	29	8	8	0	0
0	0	0	0	0	0	2	20	14	2	2	7	2	8	10	69	10	8	16	9	3	7	0	0
0	0	0	0	0	0	11	91	2	25	0	5	1	22	13	43	13	9	4	10	2	1	0	0
0	0	0	0	0	0	10	250	5	10	1	47	3	14	31	19	14	11	9	7	2	0	0	0
0	0	0	0	0	1	9	238	1	3	7	15	1	11	80	7	8	11	17	3	1	0	0	0

Date: **Tuesday, December 18, 2018** Total Daily Volume: **1364** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0	0	0	0	0	0	18	265	43	19	8	87	10	184	48	313	117	88	44	31	70	15	0	4
0	0	0	0	0	0	2	3	38	0	0	10	2	0	12	205	8	50	12	9	7	11	0	3
0	0	0	0	0	0	2	28	3	6	3	62	1	99	10	71	19	19	26	8	26	3	0	1
0	0	0	0	0	0	7	116	0	13	3	2	1	67	6	23	60	13	4	14	31	1	0	0
0	0	0	0	0	0	7	118	2	0	2	13	6	18	20	14	30	6	2	0	6	0	0	0

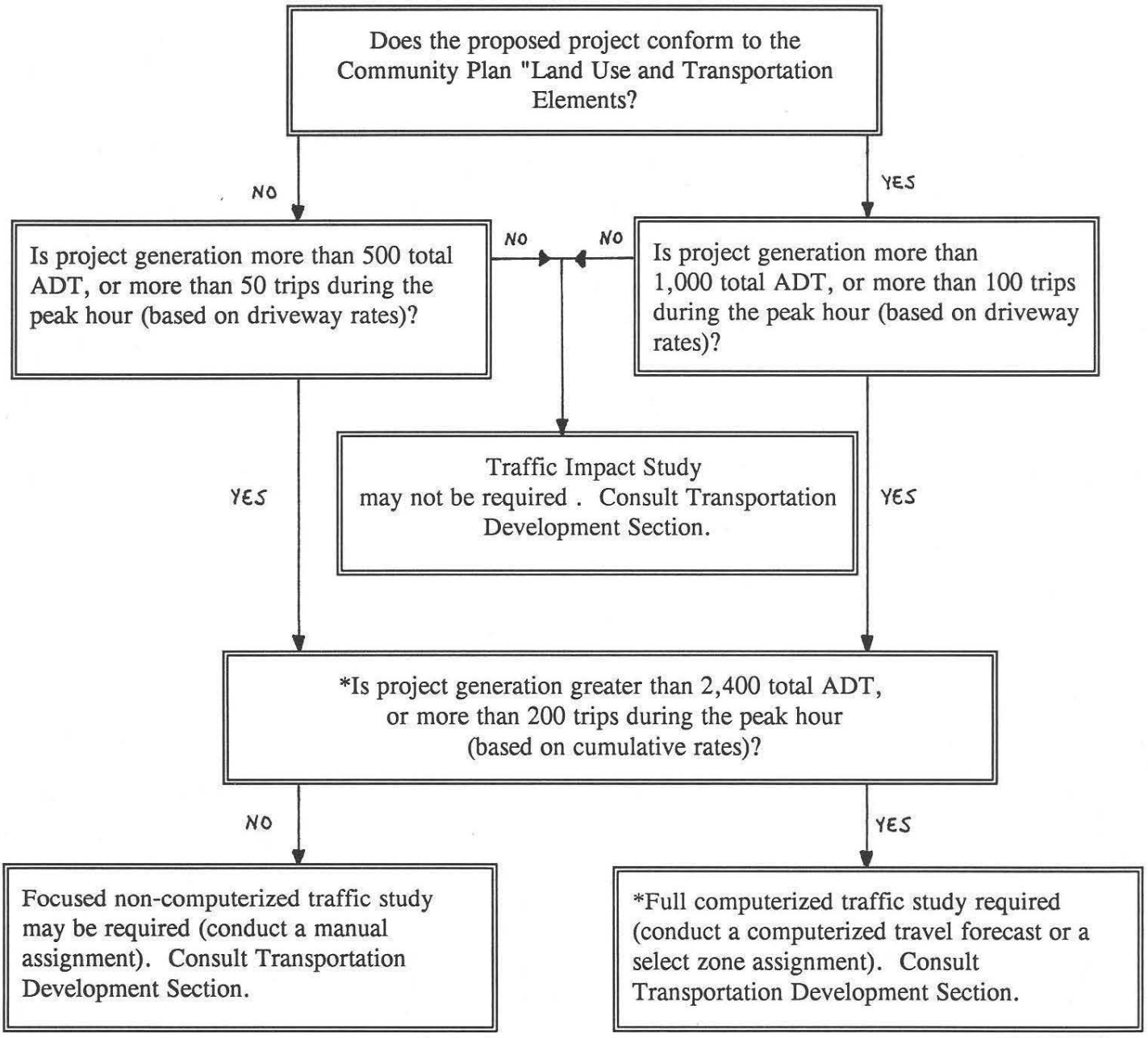
ATTACHMENT C – SAN DIEGO TRAFFIC IMPACT STUDY MANUAL FLOW CHART

Figure 1 - Traffic Impact Study Requirement Flow Chart

FIGURE 1

October 1997

TRAFFIC IMPACT STUDY
REQUIREMENT FLOW CHART



*To conform with the 1991 Congestion Management Program Enhanced California Environmental Quality Act (CEQA) review process for traffic analysis.