February 2022 | Draft Environmental Impact Report
State Clearinghouse No. 2021110378

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM PROJECT

for Redlands Unified School District

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PLACEWORKS

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ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ACM	asbestos-containing materials
ADT	average daily traffic
amsl	above mean sea level
AQMP	air quality management plan
AST	aboveground storage tank
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CAA	Clean Air Act
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfs	cubic feet per second
CGS	California Geologic Survey
CMP	congestion management program

Abbreviations and Acronyms

CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Corps	US Army Corps of Engineers
CSO	combined sewer overflows
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCM	Highway Capacity Manual
HQTA	high quality transit area
HVAC	heating, ventilating, and air conditioning system
IPCC	Intergovernmental Panel on Climate Change
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LBP	lead-based paint
LCFS	low-carbon fuel standard
LOS	level of service
LST	localized significance thresholds
M_W	moment magnitude
MCL	maximum contaminant level
MEP	maximum extent practicable

Abbreviations and Acronyms

mgd	million gallons per day
MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OES	California Office of Emergency Services
PM	particulate matter
POTW	publicly owned treatment works
ppm	parts per million
PPV	peak particle velocity
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RMP	risk management plan
RMS	root mean square
RPS	renewable portfolio standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	state implementation plan
SLM	sound level meter
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SQMP	stormwater quality management plan
SRA	source receptor area [or state responsibility area]
SUSMP	standard urban stormwater mitigation plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board

Abbreviations and Acronyms

TAC	toxic air contaminants
TNM	transportation noise model
tpd	tons per day
TRI	toxic release inventory
TTCP	traditional tribal cultural places
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	urban water management plan
V/C	volume-to-capacity ratio
VdB	velocity decibels
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
WSA	water supply assessment

1. Executive Summary

1.1 INTRODUCTION

This draft environmental impact report (DEIR) addresses the environmental effects associated with the implementation of the proposed Redlands East Valley High School Stadium Project (proposed project). The California Environmental Quality Act (CEQA) requires that local government agencies consider the environmental consequences before taking action on projects over which they have discretionary approval authority. An environmental impact report analyzes potential environmental consequences in order to inform the public and support informed decisions by local and state governmental agency decision makers. This document focuses on impacts determined to be potentially significant in the Initial Study completed for this project (see Appendix A).

This DEIR has been prepared pursuant to the requirements of CEQA and the Redlands Unified School District's (RUSD or District) CEQA procedures. The District, as the lead agency, has reviewed and revised all submitted drafts, technical studies, and reports as necessary to reflect its own independent judgment, including reliance on technical personnel and review of technical subconsultant reports.

Data for this DEIR derive from onsite field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature; and specialized environmental assessments (aesthetics, air quality, energy, greenhouse gas emissions, hydrology and water quality, noise, transportation, and tribal cultural resources).

1.2 ENVIRONMENTAL PROCEDURES

This DEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. CEQA established six main objectives for an EIR:

1. Disclose to decision makers and the public the significant environmental effects of proposed activities.
2. Identify ways to avoid or reduce environmental damage.
3. Prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
4. Disclose to the public reasons for agency approval of projects with significant environmental effects.
5. Foster interagency coordination in the review of projects.
6. Enhance public participation in the planning process.

1. Executive Summary

An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis and full disclosure of the environmental consequences of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the lead agency must consider the information in the EIR; determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the project's significant environmental impacts and alternatives; and adopt a statement of overriding considerations if significant impacts cannot be avoided.

1.2.1 EIR Format

Chapter 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the proposed project.

Chapter 2. Introduction: Describes the purpose of this DEIR, background on the project, the notice of preparation, the use of incorporation by reference, and Final EIR certification.

Chapter 3. Project Description: A detailed description of the project, including its objectives, its area and location, approvals anticipated to be required as part of the project, necessary environmental clearances, and the intended uses of this DEIR.

Chapter 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the notice of preparation was published, from local and regional perspectives. These provide the baseline physical conditions from which the lead agency determines the significance of the project's environmental impacts.

Chapter 5. Environmental Analysis: Each environmental topic is analyzed in a separate section that discusses: the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance after mitigation is incorporated; and the potential cumulative impacts of the proposed project and other existing, approved, and proposed development in the area.

Chapter 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Chapter 7. Alternatives to the Proposed Project: Describes the alternatives and compares their impacts to the impacts of the proposed project. Alternatives include the No Project Alternative and a Reduced Intensity Alternative.

Chapter 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this DEIR.

Chapter 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the project.

Chapter 10. Growth-Inducing Impacts of the Project: Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Chapter 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this DEIR.

Chapter 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this DEIR for the proposed project.

Chapter 13. Bibliography: The technical reports and other sources used to prepare this DEIR.

Appendices: The appendices for this document consist of these supporting documents:

- Appendix A: Initial Study/Notice of Preparation (NOP) and Comments
- Appendix B: Air Quality, Greenhouse Gas Emissions, and Energy Analysis
- Appendix C: Noise and Vibration Analysis
- Appendix D: Public Service Letters
- Appendix E: Transportation Impact Assessment

1.2.2 Type and Purpose of This DEIR

This DEIR has been prepared as a "Project EIR," defined by § 15161 of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3). This type of EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation.

1.3 PROJECT LOCATION

Redlands East Valley High School (Redlands East Valley HS) is at 31000 East Colton Avenue (Assessor's Parcel Numbers [APN] 0299-031-30) in the Mentone community of unincorporated San Bernardino County, California. The proposed project would be developed on 6.95 acres of the western portion of the existing 60.1-acre Redlands East Valley HS campus (project site). Regional access to the Redlands East Valley HS campus is provided by SR-38, 0.5 miles north of the campus, and Interstate 10 (I-10), approximately 3 miles west and south. Redlands East Valley HS is bounded by East Colton Avenue to the north, Opal Avenue to the west, King Street to the east, and agricultural uses to the south. The project site is bound by Colton Avenue to the north,

buildings and academic uses of the Redlands East Valley HS to the east, agricultural uses and a single-family residential unit to the south, and Opal Avenue to the west.

1.4 PROJECT SUMMARY

The District intends to develop the project site over three phases. As shown in Table 1-1, *Proposed Stadium and Athletic Field Improvements*, the proposed project would replace the existing football field and track and field facilities. The proposed project includes a new track and synthetic grass football field (including scoreboard and competitive-level lighting); new home and visitor bleachers (3,000-seat capacity); new home and visitor ticketing booth, concessions, and custodial and restroom buildings; landscaping; new fencing; pedestrian and vehicle access and circulation improvements; and emergency access and entryway improvements. RUSD is the lead agency for the proposed project in accordance with the CEQA Guidelines, § 15051(c).

The proposed project would allow Redlands East Valley HS to hold home games at its own campus. The high school currently conducts its football home games and track and field meets at various locations, including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. The proposed project would eliminate the need to bus event participants, including coaches, athletes, and band members, to home games. The proposed project would also serve as a source of school and community pride by providing the high school with a state-of-the art facility and increasing the quality of the high school's athletic curriculum.

Table 1-1 Proposed Stadium and Athletic Field Improvements

Component	Description
Sport Field	California Interscholastic Federation-specification synthetic sport field
Track and Field facilities	Nine-lane synthetic track Long- and triple-jump zones High jump and discus zones
Home Bleachers	2,000 seating capacity
Visitor Bleachers	1,000 seating capacity
Public Address System	Four speakers on the home bleachers side at 42 feet tall Two speakers on the visitor bleachers at 37 feet tall
Visitor ticket booth, concessions, custodial and restroom building	One story 1,711 total square footage
Home ticket booth, concessions, custodial, and restroom building	Two stories high 5,417 total square footage
Scoreboard	Steel and support structure 35-foot flagpole
Field Lighting (4)	Four new Musco stadium lights ▪ Two on the east side at the top of the slope (90 feet tall) ▪ Two on the west side adjacent to the existing hardtop courts (80 feet tall, set 12 feet above grade) • Each stadium light pole would include 11 lighting fixtures at the maximum height

1.5 SUMMARY OF PROJECT ALTERNATIVES

CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to a project that could feasibly attain the basic objectives of a project and avoid or lessen the environmental effects of a project. While the District considered various options and recommendations during the scoping process, the final selection of alternatives was based on the CEQA Guidelines § 15126.6(f), which states that the selection of alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.

Based on the criteria listed in Section 7.1.1 of this DEIR, the following two alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project, but may avoid or substantially lessen significant effects of the project. These alternatives are analyzed in detail in the following sections.

- No Project Alternative
- Siting Alternative

1.6 NO PROJECT ALTERNATIVE

CEQA Guidelines § 15126.6(e) requires that a "No Project" Alternative be evaluated. This analysis must discuss the existing site conditions as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved. Under the No Project Alternative, the proposed bleachers; ticketing booths, concessions, custodial and restroom buildings; scoreboard; field lighting; fencing; landscaping; and access and circulation improvements would not be constructed. The project site would continue to be used for up to 30 games and events per year, and Redlands East Valley HS students would continue to travel to other facilities for 30 games and events per year that are held off site. This alternative would not meet any of the project objectives.

1.6.1 SITING ALTERNATIVE

The EIR identifies one significant and unavoidable impact, which is event noise at the one residence located immediately south of the project site. While mitigation measures have been identified, it has been determined that they are insufficient to reduce the impact to a less than significant level. The impact is significant at this one residence because of its proximity to the noise-producing activities at the project site. An alternative moving the stadium to northerly and easterly that provides additional distance between this sensitive receptor and the project site, would reduce the impact to a less than significant level.

1.7 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to:

1. Whether this DEIR adequately describes the environmental impacts of the project.

2. Whether the benefits of the project override the environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance.

3. Whether there are other mitigation measures that should be applied to the project in addition to the mitigation measures identified in the DEIR.

4. Whether there are any alternative to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.8 AREAS OF CONTROVERSY

The proposed project may generate areas of controversy, but at the date of publication, none have been raised by the community, public agencies, or other organizations. Comments received during circulation of the IS/NOP are included in Appendix A.

1.9 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-2, Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation, summarizes the conclusions of the environmental analysis contained in this DEIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also presented.

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 AESTHETICS			
Impact 5.1-1: The Proposed Project would not substantially degrade the existing visual character or quality of public views of the Project Site and its surroundings. [Threshold AE-3]	LTS		LTS
Impact 5.1-2: The proposed project would generate additional light and glare. [Threshold AE-4]	PS	**AE-1**: The Redlands Unified School District shall minimize the effects of new sources of nighttime lighting by incorporating the following measures into project design and operation: ▪ All lighting shall be shielded and directed downward onto the athletic fields to minimize potential light escape and/or spillover onto adjacent properties. ▪ The new athletic field lights shall be shut off by or before 10:30 p.m.	LTS
5.3 AIR QUALITY			
Impact 5.2-1: The proposed project would not conflict with the South Coast AQMD AQMP. [Threshold AQ-1]	LTS		LTS
Impact 5.2-2: Construction activities associated with the proposed project would not generate short-term emissions in exceedance of the South Coast AQMD's regional threshold criteria. [Thresholds AQ-2 and AQ-3]	LTS		LTS
Impact 5.2-3: Long-term operation of the proposed project would not generate emissions in exceedance of the South Coast AQMD's regional threshold criteria. [Thresholds AQ-2 and AQ-3]	LTS		LTS
Impact 5.2-4: Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-3]	PS	**AQ-1:** Construction bids for the project site shall specify use of equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 (Interim) emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for site preparation activity. Any emissions control device used by the	LTS

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 emissions standards for a similarly sized engine, as defined by the California Air Resources Board's regulations. Prior to construction, the project engineer shall ensure that all plans clearly show the requirement for EPA Tier 4 emissions standards for construction equipment over 50 horsepower for the specific activities stated above. During construction, the construction contractor shall maintain a list of all operating equipment associated with building demolition in use on the site for verification by the District. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. **AQ-2:** Construction bids for the project site shall specify that the construction contractor shall prepare a dust control plan for site preparation that—in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District (AQMD) Rule 403—includes the following measures to further reduce PM10 and PM2.5 emissions: ▪ Following all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering. ▪ During all construction activities, the construction contractor shall sweep streets with South Coast AQMD Rule 1186–compliant, PM10-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling. ▪ During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day. ▪ During all construction activities, the construction contractor shall limit on-site vehicle speeds on unpaved roads to no more than 15 miles per hour. ▪ During all ground-disturbing activities, the construction contractor shall apply nontoxic soil stabilizers to minimize fugitive dust. Construction contractors shall be responsible for ensuring that these requirements are met. Prior to construction activities, the construction contractor shall ensure that all construction plans submitted to the District clearly show the watering and soil stabilizer requirement to control fugitive dust. During construction activities, the District shall verify that these measures have been implemented during normal construction site inspections.	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.2-5: Operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-3]	LTS		LTS
Impact 5.2-6: The proposed project would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. [Threshold AQ-4]	LTS		LTS
5.6 ENERGY			
Impact 5.3-1: The proposed project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. [Threshold E-1]	LTS		LTS
Impact 5.3-2: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. [Threshold E-2]	NI		NI
5.8 GREENHOUSE GAS EMISSIONS			
Impact 5.4-1: Implementation of the proposed project would not generate a net increase in GHG emissions, either directly or indirectly, that would have a significant impact on the environment. [Threshold GHG-1]	LTS		LTS
Impact 5.4-2: Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation	LTS		LTS

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
adopted for the purpose of reducing the emissions of GHGs. [Threshold GHG-2]			
5.10 HYDROLOGY AND WATER QUALITY			
Impact 5.5-1: The proposed project would not violate any water quality standards or waste discharge requirements. [Threshold HYD-1]	LTS		LTS
Impact 5.5-2: The proposed project would not 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 result in a substantial erosion or siltation on- or off-site. [Threshold HYD-3i]	LTS		LTS
Impact 5.5-3: The proposed project would not 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. [Threshold HYD-3ii]	LTS		LTS
Impact 5.5-4: The proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional	LTS		LTS

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
sources of polluted runoff. [Threshold HYD-3(iii)]			
Impact 5.5-5: The proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would impede or redirect flood flows. [Threshold HYD-3(iv)]	LTS		LTS
5.13 NOISE			
Impact 5.6-1: Construction activities would result in temporary noise increases in the vicinity of the proposed project that would not exceed standards. [Threshold N-1]	LTS		LTS
Impact 5.6-2: Project implementation would result in long-term operation-related noise that would cause substantial increases in ambient noise levels. [Threshold N-1]	PS	**N-1:** Prior to holding the first spectator event, the District shall develop and enforce a good-neighbor policy for sports field events. Signs shall be erected at entry points that state prohibited activities during an event (e.g., use of air horns, unapproved audio amplification systems, bleacher foot-stomping, loud activity in parking lots upon exiting the field), and events shall be monitored by the District staff. During subsequent design phases of the bleachers and PA system, the District's sound system contractor shall create a Stadium Sound System Design Plan. The project's sound system design goal should be to optimize conveying information to the event attendees while minimizing off-site spill-over effects. Prior to the first sports field event, the public address system contractor shall perform a system check to verify appropriate sound levels in the seating areas, as well as minimized spill-over sound levels into the adjacent community areas. **N-2:** Three months prior to holding the first spectator event, the School District shall have completed an offer to the homeowner of 10637 Opal Avenue for the installation of upgraded windows (first and second story windows) to provide additional noise attenuation. Additional acoustic investigations shall be conducted to define the house and windows that would substantially benefit from the installation of upgraded windows (e.g., existing double-paned windows would not warrant replacement). Working with qualified contractor(s), the District shall complete cost estimates for the house, and deposit such funds in an escrow account. The homeowner will be responsible for contracting with	SU

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		qualified contractors and funds not exceeding the cost estimate shall be released by the escrow company upon receipt of a signed improvement contract.	
Impact 5.6-3: The project would not create excessive groundborne vibration and groundborne noise. [Threshold N-2]	LTS		LTS
Impact 5.6-4: The proximity of the project site to an airport or airstrip would not result in exposure of future workers to excessive airport-related noise. [Threshold N-3]	NI		NI
5.15 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
Impact 5.7-1: The proposed project would not affect response times or other performance objectives that would result in the need for new or physically altered fire protection facilities, the construction of which would cause significant environmental impacts. [Threshold PS-1(i)]	LTS		LTS
POLICE PROTECTION			
Impact 5.7-2: The Proposed Project would not affect response times or other performance objectives that result in the need for new or physically altered police protection facilities, the construction of which would cause significant environmental impacts. [Threshold PS-1(ii)]	LTS		LTS
5.17 TRANSPORTATION			
Impact 5.8-1: The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system,	LTS		LTS

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
including transit, roadway, bicycle, and pedestrian facilities. [Threshold T-1]			
Impact 5.8-2: The proposed project would not conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b). [Threshold T-2]	LTS		
Impact 5.8-3: Project circulation improvements have been designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access. [Thresholds T-3 and T-4]	LTS		LTS
Impact 5.8-4: The proposed project would result in inadequate parking capacity. [Threshold T-5]	PS	**T-1:** Construction contractor shall provide an off-street staging area that would be used for parking/storage of construction vehicles and equipment. This staging area should be within the school property.	LTS
5.18 TRIBAL CULTURAL RESOURCES			
Impact 5.9-1: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). [Threshold TCR-1.i]	PS	**TCR-1:** If tribal cultural resources are inadvertently discovered during ground disturbing activities for this project, the following procedures will be carried out for treatment and disposition of the discoveries: ▪ Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 50 feet) until the find can be assessed. ▪ All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist. If the resources are Native American in origin, the proper Tribe(s) will retain it/them in the form and/or manner the Tribe(s) deems appropriate, for educational, cultural and/or historic purposes. ▪ If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).	LTS

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		▪ Work may continue on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources. ▪ Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the San Bernardino County Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.	
Impact 5.9-2: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant pursuant to criteria in Public Resources Code section 5024.1(c). [Threshold TCR-1.ii]	PS	**TCR-1:** If tribal cultural resources are inadvertently discovered during ground disturbing activities for this project, the following procedures will be carried out for treatment and disposition of the discoveries: ▪ Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 50 feet) until the find can be assessed. ▪ All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist. If the resources are Native American in origin, the proper Tribe(s) will retain it/them in the form and/or manner the Tribe(s) deems appropriate, for educational, cultural and/or historic purposes. ▪ If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).	LTS

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		▪ Work may continue on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources. ▪ Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the San Bernardino County Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.	

1. Executive Summary

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. This draft environmental impact report (DEIR) has been prepared to satisfy CEQA and the CEQA Guidelines. The EIR is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

The lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (CEQA § 21067). The Redlands Unified School District (RUSD or District) has the principal responsibility for approval of the Redlands East Valley High School Stadium Project (proposed project). For this reason, the RUSD is the CEQA lead agency for this project.

The intent of the DEIR is to provide sufficient information on the potential environmental impacts of the proposed project to allow the RUSD to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the District are described in Section 3.4, *Intended Uses of the EIR*.

This DEIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code, §§ 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (CEQA Guidelines), as amended (California Code of Regulations, §§ 15000 et seq.)

The overall purpose of this DEIR is to inform the lead agency, responsible agencies, decision makers, and the general public about the environmental effects of the development and operation of the proposed project. This DEIR addresses effects that may be significant and adverse; evaluates alternatives to the project; and identifies mitigation measures to reduce or avoid adverse effects.

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

The RUSD determined that an EIR would be required for this project and issued a Notice of Preparation (NOP) and Initial Study on November 24, 2021 (see Appendix A). Comments received during the initial study's

public review period, from November 24, 2021 to December 23, 2021 (see Table 2-1, *Initial Study/Notice of Preparation Comments*), as well as a summary of the comments presented at the scoping meeting, are provided in Appendix A of this DEIR.

Table 2-1. Initial Study/Notice of Preparation Comments

Commenter	Agency	Date Received
Brian Foote, City Planner/Planning Manager	City of Redlands	December 20, 2021
Adam A. Panos, Deputy Fire Marshall	San Bernardino County Fire Protection District	December 21, 2021
Ryan Nordness, Cultural Resource Analyst	San Manuel Band of Mission Indians	December 21, 2021
Andrew Green, Cultural Analyst	Native American Heritage Commission	November 24, 2021
Michael M. Nakagaki, Branch Chief	Federal Emergency Management Agency	January 6, 2022

The NOP process helps determine the scope of the environmental issues to be addressed in the DEIR. Based on this process and the Initial Study for the proposed project, certain environmental categories were identified as having the potential to result in significant impacts. Environmental issues that were considered to have potentially significant impacts are addressed in this DEIR, and issues identified to result in less than significant impacts or no impacts are addressed in the IS/NOP. Refer to the IS/NOP in Appendix A for discussion of how these initial determinations were made.

2.3 SCOPE OF THIS DEIR

The scope of the DEIR was determined based on the IS/NOP, comments received in response to the NOP, and comments received at the scoping meeting conducted by the RUSD. Pursuant to §§ 15126.2 and 15126.4 of the CEQA Guidelines, the DEIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

2.3.1 Impacts Considered Less Than Significant

During preparation of the Initial Study, RUSD determined that 11 environmental impact categories were not significantly affected by or did not affect the proposed project. These categories are not discussed in detail in this DEIR.

- Agriculture/Forestry Resources
- Biological Resources
- Cultural Resources
- Geology/Soils
- Hazards and Hazardous Materials
- Land Use/Planning
- Mineral Resources
- Population/Housing
- Recreation
- Utilities/Service Systems

- Wildfire

2.3.2 Potentially Significant Adverse Impacts

Through the IS/NOP process, RUSD determined that further analysis was needed for nine environmental topics to determine whether the proposed project would result in potentially significant impacts. These topics are evaluated in detail in Chapter 5, *Environmental Analysis*, of this DEIR.

- Aesthetics
- Air Quality
- Energy
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Noise
- Public Services
- Transportation
- Tribal Cultural Resources

2.3.3 Unavoidable Significant Adverse Impacts

This DEIR identifies one significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. The District must prepare a "statement of overriding considerations" before it can approve the project, attesting that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits outweigh the adverse effects, and therefore the adverse effects are considered acceptable. The impacts that were found in the DEIR to be significant and unavoidable are:

- Long-term Operational Noise: Project implementation would result in long-term operation-related noise that would cause substantial increases in ambient noise levels to the residence located at 10637 Opal Avenue

2.4 INCORPORATION BY REFERENCE

The following documents are incorporated herewith by reference into this DEIR, consistent with § 15150 of the CEQA Guidelines, and they are available for review at the RUSD Office.

- San Bernardino County General Plan, October 2020

2.5 FINAL EIR CERTIFICATION

This DEIR is being circulated for a 45-day review period, from February 4, 2022 to March 23, 2022. Interested agencies and members of the public are invited to provide written comments on the DEIR. In compliance with §§ 15085(a) and 15087(a)(1) of the CEQA Guidelines, the RUSD, serving as the lead agency, has published a

Notice of Completion (NOC) and Notice of Availability (NOA) of the DEIR, which indicates that the DEIR and all associated technical appendices can be viewed at the following locations:

- Redlands Unified School District, 20 W. Lugonia Avenue, Redlands, CA 92374
- Redlands East Valley High School, 31000 E Colton Ave, Redlands, CA 92374

In addition, the DEIR is available on line at the Redlands Unified School District website: https://www.redlandsusd.net/domain/5513.

Any public agency or members of the public wishing to comment on the DEIR must submit their comments in writing or via email with the subject heading "Redlands East Valley High School Stadium Project" to one the following addresses prior to the end of the public review period:

- **Mail:** Ken Morse
  Redlands Unified School District
  20 W. Lugonia Avenue
  Redlands, CA 92374
- **Email:** revstadium@redlands.k12.ca.us
- **Voicemail:** (909) 389-2730

Upon completion of the 45-day review period, RUSD will review all written comments received and prepare written responses for each. The Final EIR (FEIR) will include all received comments, RUSD's responses to those comments, and any changes to the DEIR that result from comments. The FEIR will be presented to the RUSD's Board of Education for potential certification as the environmental document for the proposed project. All persons who comment on the DEIR will be notified of the availability of the FEIR and the date of the public hearing.

2.6 MITIGATION MONITORING

Public Resources Code § 21081.6 requires that an agency adopt a mitigation monitoring and reporting program (MMRP) for any project for which it has made findings pursuant to Public Resources Code § 21081. Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of the EIR.

The MMRP for the proposed project will be completed as part of the FEIR, prior to consideration of the project by the District's Board of Education.

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3. Project Description

3.1 PROJECT LOCATION

Redlands East Valley High School (Redlands East Valley HS) is located at 31000 East Colton Avenue (Assessor's Parcel Numbers [APN] 0299-031-30) in unincorporated San Bernardino County, California (see Figure 3-1, *Regional Location*). The Redlands East Valley High School Stadium project (proposed project) would be developed within approximately 6.95 acres of the western portion of the existing 60.1-acre high school campus (project site).

Regional access to the Redlands East Valley HS campus is provided by State Route (SR) 38, 0.5 mile north of the campus, and Interstate 10, approximately 3 miles west and south. Redlands East Valley HS campus is bounded by East Colton Avenue to the north, Opal Avenue to the west, King Street to the east, and agricultural uses to the south. The project site bound by East Colton Avenue to the north, the Redlands East Valley HS campus to the east, agricultural uses to the south, and Opal Avenue to the west (see Figure 3-2, *Local Vicinity*, and Figure 3-3, *Aerial Photograph*).

3.2 STATEMENT OF OBJECTIVES

Section 15124(b) of CEQA Guidelines requires a project description to include a statement of the objectives of a project that address the underlying purpose. The following specific objectives have been identified for the proposed project:

1. Provide adequate stadium facilities at the Redlands East Valley High School to accommodate school sport games and school events at the campus.

2. Provide lighting to allow night use of the track and field to accommodate school-related events and activities.

3. Provide bleachers with adequate capacity to accommodate various spectator events currently held on and off campus.

4. Utilize existing space to enhance opportunities for after-school athletic and extracurricular activities.

5. Enhance sense of community by allowing home games on campus.

6. Upgrade the athletic fields to boost school pride.

3. Project Description

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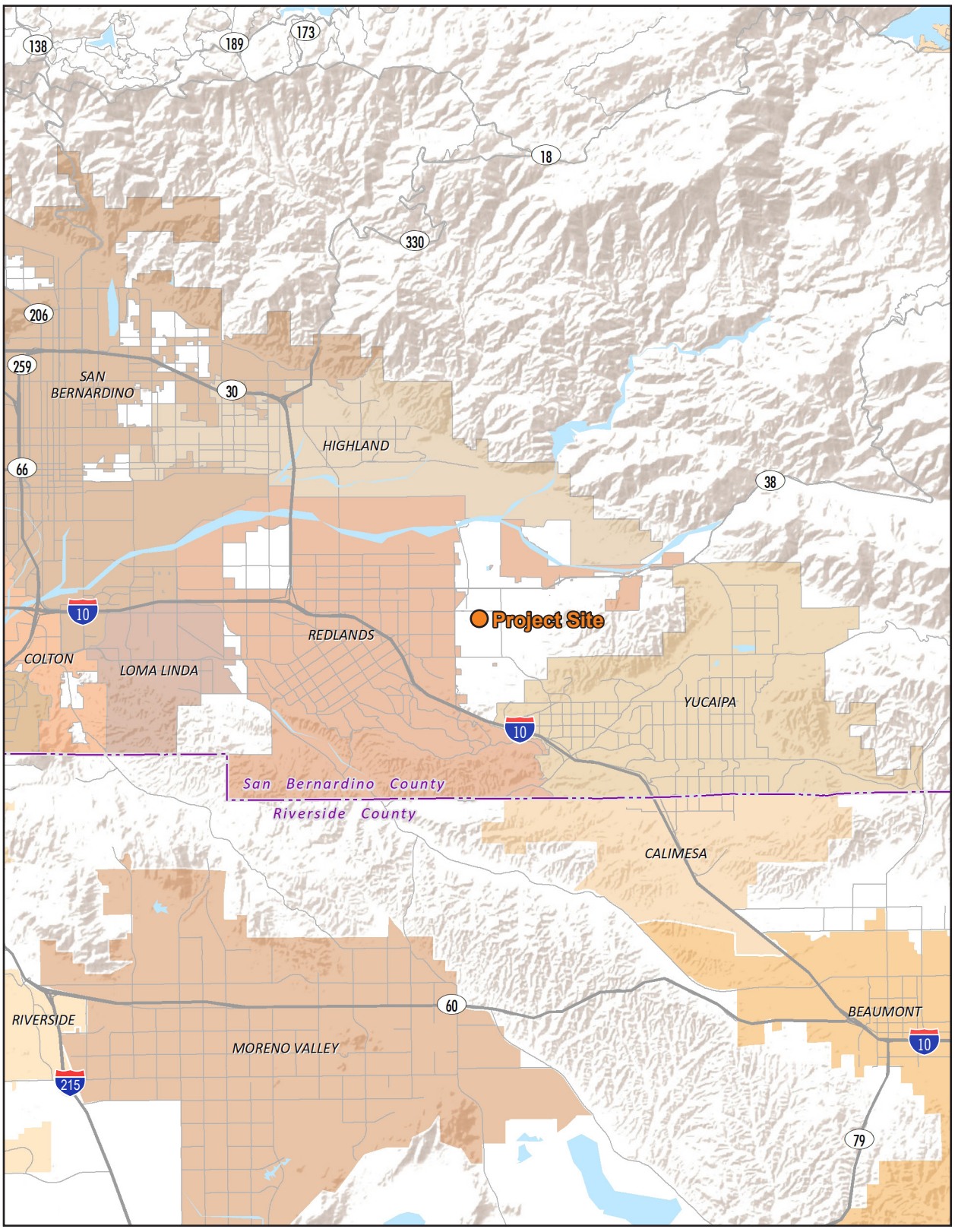
Figure 3-1 - Regional Location



Note: Unincorporated county areas are shown in white.

Source: ESRI, 2021

0 3
Scale (Miles)

3. Project Description

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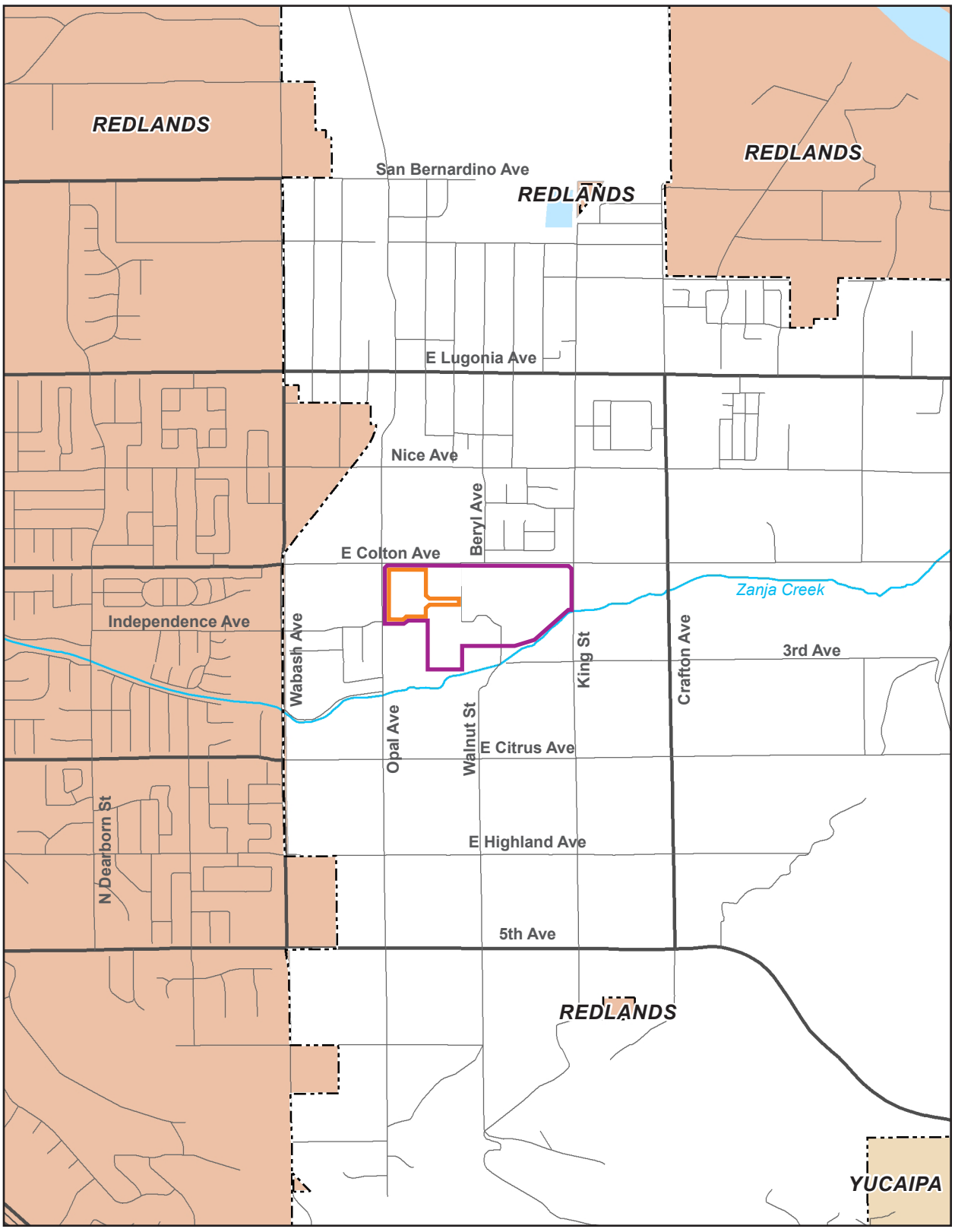
Figure 3-2 - Local Vicinity



Note: Unincorporated county areas are shown in white.

Source: ESRI, 2021

3. Project Description

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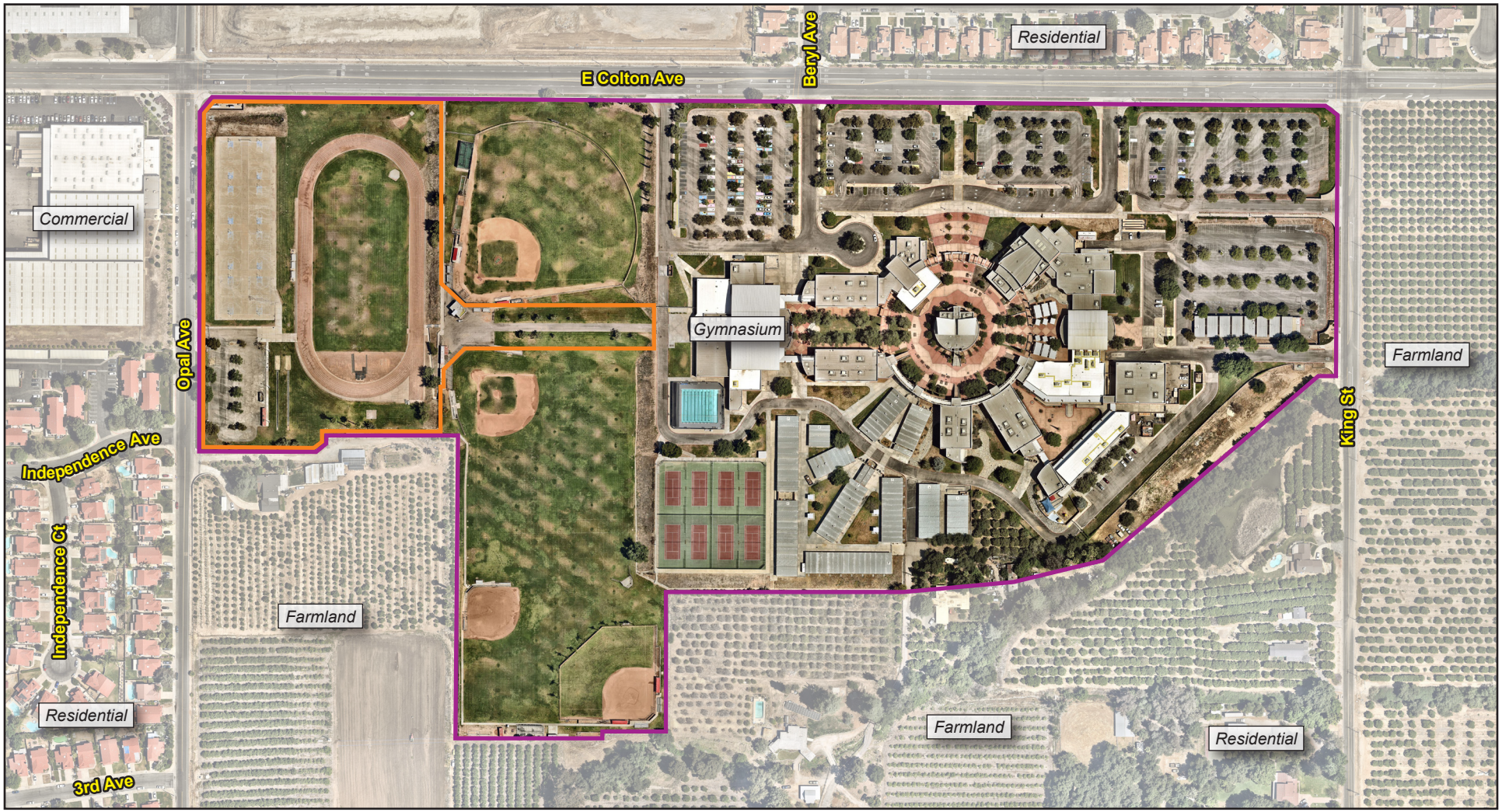
Figure 3-3 - Aerial Photograph



Source: Nearmap, 2021

3. Project Description

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3.3 PROJECT CHARACTERISTICS

"Project," as defined by the CEQA Guidelines, means:

> ... the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700. (14 Cal. Code of Reg. § 15378[a])

3.3.1 Proposed Project

Redlands Unified School District (RUSD or District) intends develop a stadium at Redlands East Valley HS over three phases. The proposed project would include a new track and field facilities and synthetic grass sport field (including scoreboard and competitive-level lighting); new home and visitor bleachers, new home and visitor ticketing booths, concessions, custodial and restroom buildings, landscaping; and pedestrian and vehicle circulation access and entryway improvements. RUSD serves as the lead agency for the proposed project in accordance with the California Environmental Quality Act (CEQA), Section 15051(c).

3.3.1.1 PROJECT DEVELOPMENT

The proposed new sport stadium, track and field facilities, and associated improvements would replace the existing football field and track and field facilities. The proposed project would include bleacher seating for 3,000 people, lighting, a home ticket booth and restroom/concession building, and visitor ticket booth and restroom/concession building. The proposed project would also include various improvements to landscaping, new fencing, access and circulation, and emergency access.

The proposed project would allow Redlands East Valley HS to hold home games and school events at its own campus. The high school currently conducts its sport home games and track and field meets at various locations, including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. The proposed project would eliminate the need to bus event participants, including coaches, athletes, and band members, to home games. The proposed project would also serve as a source of school and community pride by providing the high school with a state-of-the art facility and increasing the quality of the high school's athletic curriculum.

3.3.1.2 PROPOSED STADIUM AND ATHLETIC FIELD IMPROVMENTS

The proposed project would demolish the existing football field and track and field facilities and regrade and recompact the project site to allow for the proper base and slope for the proposed project. Project site demolition would include removal of associated concrete and hard surfaces and five trees along the eastern side of the project site. The proposed project would relocate the metal storage container that currently sits on the southeast corner of the parking lot along Opal Avenue.

The proposed sport field and track and field facilities would be sited approximately 45 feet south of Colton Avenue (approximately 48 feet north of the footprint of the existing football field and track and field facilities).

3. Project Description

Compared to existing conditions, the proposed sport field and track and field facilities would be approximately 49 feet closer to Colton Avenue. The new field would be synthetic turf for soccer and football. The new track would be synthetic and contain nine lanes. Long- and triple-jump zones and a new vehicle access gate to the track would be on the south side of the new track. High jump and discus zones would be on the north side of the track. The sports field and track would be surrounded by a new four-foot-high chain-link fence and an eight-foot-wide concrete walkway. A new scoreboard with steel support structure and a 35-foot flagpole would be installed on the north end of the track and walkway. Four new Musco stadium lights would be installed around the track and field, two on the east side at the top of the slope and two on the west side adjacent to the existing hardtop courts. The eastern stadium lights would be 90 feet tall, located on either side of the stadium seats facing west toward the sport field. The western stadium lights would be 80 feet tall, set 12 feet above grade for a total height of 92 feet, located behind the stadium seats on either end facing east to the sport field. Each stadium light pole would include 11 lighting fixtures on each pole.

Table 3-1 Proposed Stadium and Athletic Field Improvements

Component	Description
Sport Field	California Interscholastic Federation-specification synthetic sport field
Track and Field facilities	Nine-lane synthetic track Long- and triple-jump zones High jump and discus zones
Home Bleachers	2,000 seating capacity
Visitor Bleachers	1,000 seating capacity
Public Address System	Four speakers on the home bleachers side at 42 feet tall Two speakers on the visitor bleachers at 37 feet tall
Visitor ticket booth, concessions, custodial and restroom building	One story Approximately 1,711 total square footage
Home ticket booth, concessions, custodial, and restroom building	Two stories Approximately 5,417 total square footage
Scoreboard	Steel and support structure 35-foot flagpole
Field Lighting (4)	Four new Musco stadium lights: • Two on the east side at the top of the slope (90 feet tall) • Two on the west side adjacent to the existing hardtop courts (80 feet tall, set 12 feet above grade) ▪ Each stadium light pole would include 11 lighting fixtures at the maximum height

As shown in Table 3-1, *Proposed Stadium and Athletic Field Improvements*, the proposed project's development would include the installation of bleacher seating and a public address system. The public address system includes six EV. S x 600 high-output indoor/outdoor speakers. Four speakers would be at the back of the bleachers on the home side at 42 feet high, and two additional speakers would be at the middle of the visitor side bleachers at 37 feet high. All speakers would point at a downward angle. As shown in Figure 3-4, *Conceptual Stadium Site Plan*, the project site would include separate bleachers for home and visiting team spectators, with a combined seating capacity for 3,000 spectators. The 2,000-seat home team bleachers and a press box would be installed on the east side of the sport field, and the 1,000-seat visiting team bleachers would be installed on the west side of the playing field. The proposed bleacher structures would be constructed of aluminum and installed on a concrete foundation.

The proposed project would construct a new visitor ticket booth, concessions, and custodial and restroom building that would be approximately 1,711 square feet and one story (approximately 14.5 feet above grade) to the southwest side of the project site (see Figure 3-5, *Visitor Building Elevations*). The proposed project would also construct a new home ticket booth, concessions, and custodial and restroom building that would be approximately 5,417 square feet, two stories high (approximately 16.5 feet relative to upper grade and 28 feet relative to field grade), and to the southeast side of the project site (see Figure 3-6, *Home Building Elevations*).

3. Project Description

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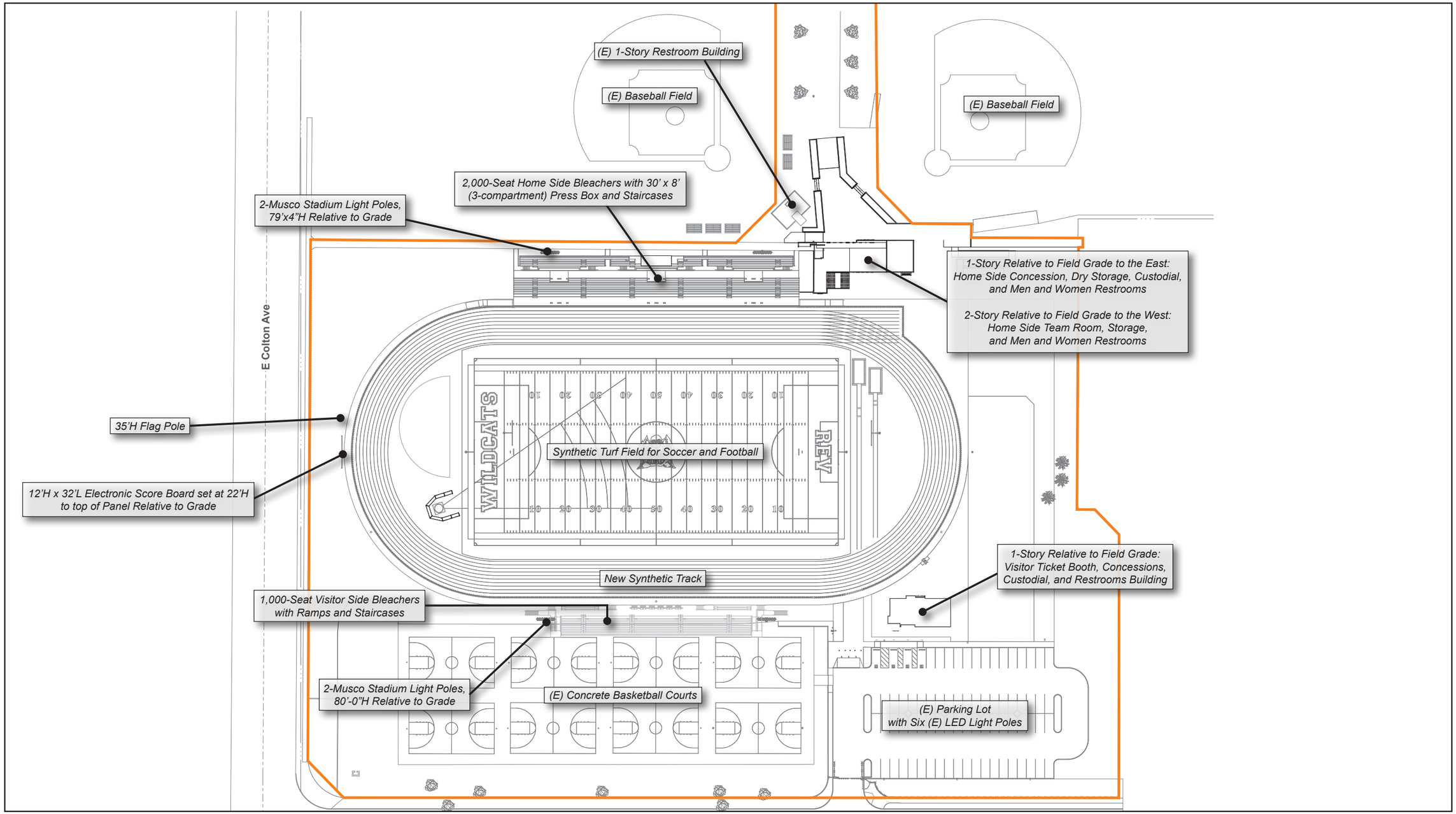
Figure 3-4 - Conceptual Stadium Site Plan



Project Site Boundary

0 100
Scale (Feet)

Source: PCH Architects, 2021

3. Project Description

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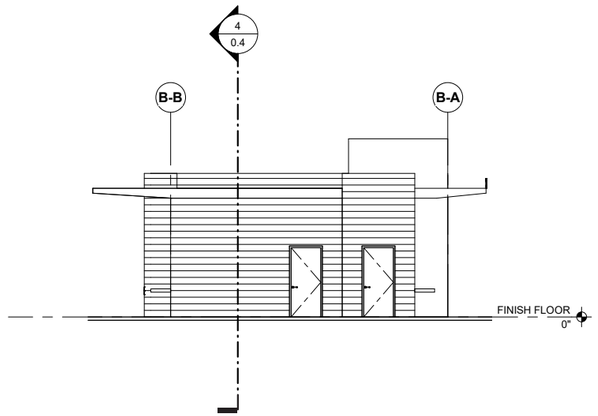
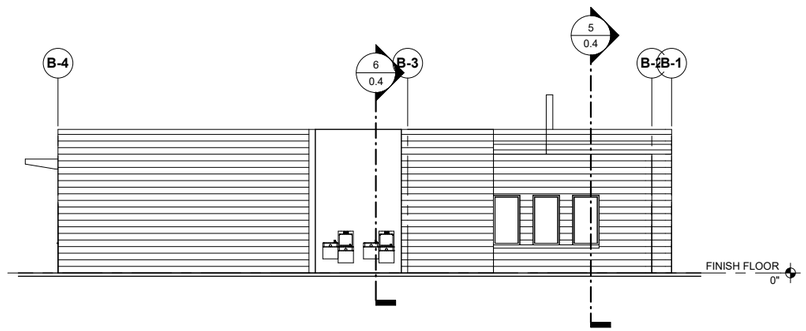
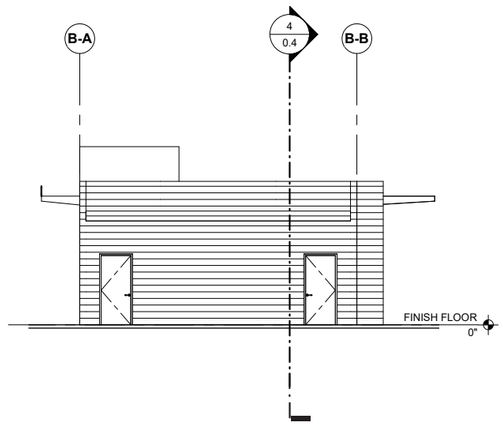
Figure 3-5 - Visitor Building Elevations



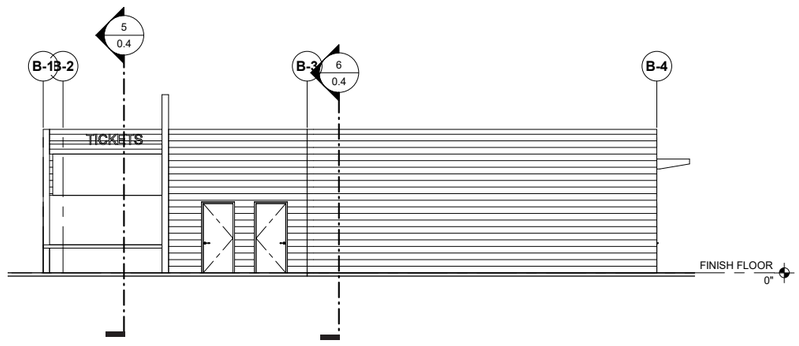
1 VISITOR - NORTH ELEVATION



2 VISITOR - EAST ELEVATION



3 VISITOR - SOUTH ELEVATION



4 VISITOR - WEST ELEVATION

0 15
Scale (Feet)

Source: PCH Architects, 2021

3. Project Description

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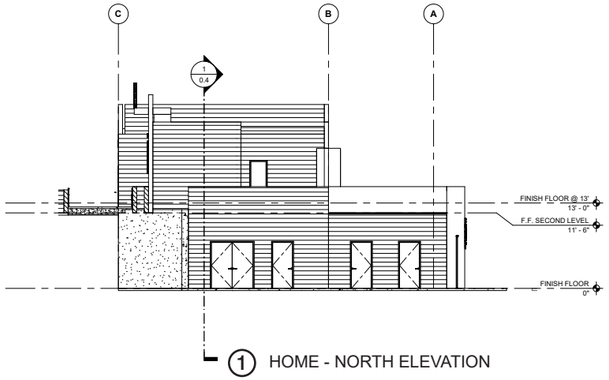
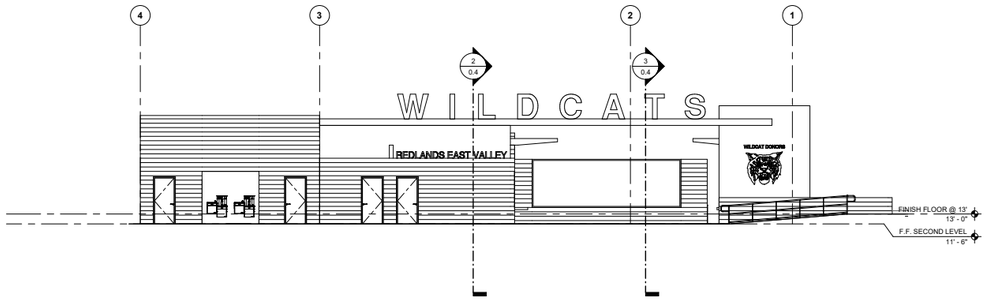
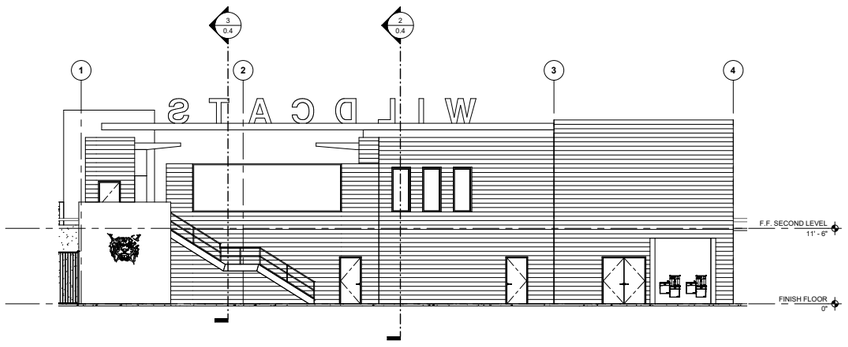
Figure 3-6 - Home Building Elevations



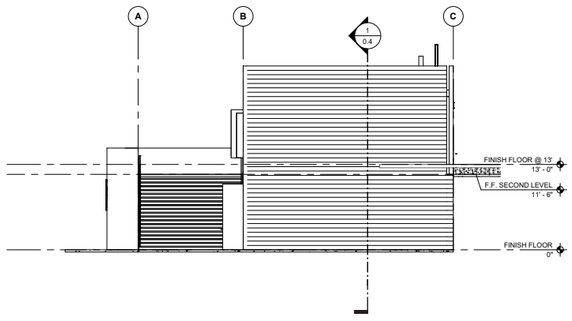
1 HOME - NORTH ELEVATION



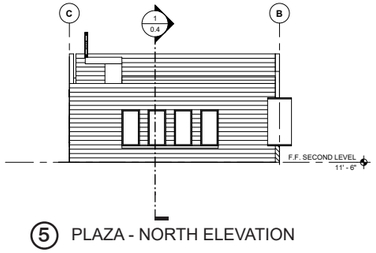
2 HOME - EAST ELEVATION



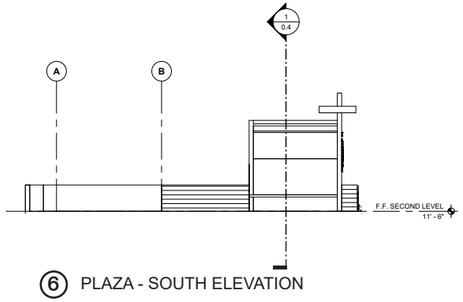
3 HOME - WEST ELEVATION



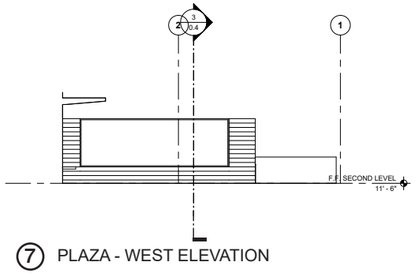
4 HOME - SOUTH ELEVATION



5 PLAZA - NORTH ELEVATION



6 PLAZA - SOUTH ELEVATION



7 PLAZA - WEST ELEVATION

0 15
Scale (Feet)

Source: PCH Architects, 2021

3. Project Description

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3.3.1.3 PEDESTRIAN ACCESS

The proposed project would include pedestrian access improvements along both the west (visitor side) and east (home side) side of the project site. A new 20-foot wide rolling gate located adjacent to the new visitor ticket booth and restroom/concession building, and south of the basketball courts, would provide pedestrian access to the visitor side of the proposed project. Additionally, access to the home side of the proposed project would be provided through three new four-foot wide chain link pedestrian gates, located on the southeastern portion of the project site, adjacent to the baseball fields. The access gates would lead to new paved walkways located east of the home ticket booth and restroom/concession building, which would be widened to enhance pedestrian and ADA access.

3.3.1.4 FENCING

The proposed sport field and track and field facilities would be surrounded by a chain link fence. New chain link fencing and gated access points will also be installed along Opal Avenue, Colton Avenue, and along the southern side of the project site. Fencing will be further installed throughout the project site to control vehicle and pedestrian access.

3.3.1.5 VEHICULAR PARKING

The existing parking lot on the southwest corner of the project site would be used as visitor parking. The parking lot contains 78 parking spaces; however, the existing hardtop basketball court would be used for overflow event parking, when necessary, with access via the parking lot on the west side of the project site. The overflow parking would be able to accommodate up to 150 additional vehicles.

Home parking would be provided in the existing parking lots on the campus, which provide a total of 858 parking spaces.

3.3.1.6 EMERGENCY ACCESS

The proposed project would provide emergency access to the field with a fire access road from the southwest parking lot to provide access to the field along the south end.

3.3.1.7 LANDSCAPING

New landscaping will be provided throughout the project site and include new trees, turf, and irrigation. Trees along the walkway/fire lane that connects the project site to the rest of the campus will also have new trees.

3.3.1.8 STORMWATER INFRASTRUCTURE

Under the proposed project, stormwater would flow through the existing stormwater infrastructure and be directed towards concrete gutters onsite and in the public rights-of-way similar to existing conditions. New catch basins and slot channel trench drain system will be installed for the proposed sport field. These stormwater improvements will discharge to the existing drainage area on the northwest corner of the project site.

3.3.2 Use and Scheduling

The proposed project is primarily intended to facilitate interscholastic athletic events and competitions, including football and soccer games and track meets. The facility would also be used for athletic team practices; band and color guard practices; and occasional classroom activities, rallies, assemblies, and other academic functions. The proposed project would allow the District to host varsity games onsite. As scheduling permits, the proposed project may also accommodate a variety of community-sponsored events in accordance with the Civic Center Act (Education Code Sections 38130 to 38139) and District policy.

The District anticipates the scheduling of approximately 60 events/games per year that require the use of the proposed project's public address and/or field lighting systems, 5 of which have the potential to be full capacity. All of the 60 events/games that would be held at the project site are existing events; no new events would take place as a result of the proposed project. Of these 60 events/games, 30 events/games currently take place onsite, and 30 events/games would be relocated from other facilities. The most heavily attended stadium events would be football games. Additional games—likely no more than two—could be scheduled depending on playoff status. Homecoming, games between local school rivals, and possible playoff games could draw maximum-capacity crowds. Occasional special events, such as rallies, may also draw capacity-sized crowds. Approximately five capacity events—crowds of over 2,000 spectators—are anticipated per year (consistent with existing conditions).

As shown in Table 3-2, *Redlands East Valley High School Sports Field Proposed Event Schedule*, the District anticipates the scheduling of approximately three home football games per year each for varsity and junior varsity (JV) teams. High school football season generally extends from the end of August through the middle of November, depending on team playoff status. Varsity games would generally be scheduled on Thursday and Friday evenings between the hours of 7:00 pm and 9:30 pm. JV games would be scheduled immediately following the end of the school day on Thursday or Friday afternoons. The stadium's field lights would be in operation for approximately four hours during any single evening, with lights being turned off by 10:30 pm. Football practice sessions at the stadium would take place on a regular basis and may, when necessary, use the stadium's lighting system, with lights being shut off before 9:00 pm.

Track and field season takes place during the late winter and spring. The District anticipates the scheduling of approximately three home track meets during the average school year. Track and field meets would generally be conducted on Thursday after school until 6:00 pm, and cross-county competitions would be held on Saturdays starting at approximately 7:30 am. Track and field meets are usually held during daylight hours and generally do not require the use of stadium lights. However, there a possibility that some meets may require use of the lighting system. Lights would be turned off prior to 10:30 pm.

Soccer season takes place during the late winter and spring. Home games generally occur Wednesday immediately after school until 6:30 pm for boys teams and Fridays immediately after school until 6:30 pm for girls teams, with JV playing before varsity for both teams. Each team (Girls JV, Girls varsity, Boys JV, and Boys varsity) has 5 home games per year, for a total of 20 homes games—typically with JV and varsity games occurring consecutively. Soccer games at the stadium may, when necessary, use the stadium's lighting system, with lights shut off before 9:00 pm.

Other school uses may include band and color guard practices and competitions, classroom activities, and possibly rallies and assemblies, most of which would be conducted during daylight hours. The high school's band would use the stadium and lighting system one or two nights a week during football season for practice. Band practice would conclude by approximately 9:00 pm. It is anticipated that daily physical education classes would not normally use the stadium facility. Some summer events may occur at the project site and would be shown in the school's event schedule.

In addition to scholastic-related uses, the proposed project may also accommodate a variety of community-sponsored events and activities, potentially including youth soccer practices and youth football. Stadium use by community organizations would be subject to approval by the District and the Civic Center Act. Community events would generally be scheduled on weekends and would conclude by 10:00 pm. Currently, one community-sponsored event (a fundraiser walk) uses the facilities once a year.

Table 3-2 Redlands East Valley High School Sports Field Proposed Event Schedule

Activity/Use	Anticipated Number of Home Events	Days of Week	Time		Outdoor Lighting?
			Start	End	
Football (Fall - August to November)					
Freshman Football	3 per year	Thursday/Friday	3:15 pm	5:45 pm	Yes
Varsity Football	3 per year	Thursday/Friday	7:00 pm	9:30 pm	Yes[1]
Track and Field (Winter and Spring)					
Cross-County	3 per year	Saturday	7:30 am	-	No
Track and Field	3 per year	Thursday	3:15 pm	6:00 pm	Yes[2]
Soccer (Winter and Spring)					
Girls JV Soccer	5 per year	Friday	3:15 pm	4:45 pm	No
Girls Varsity Soccer	5 per year	Friday	5 pm	6:30 pm	Yes[3]
Boys JV Soccer	5 per year	Wednesday	3:15 pm	4:45 pm	No
Boys Varsity Soccer	5 per year	Wednesday	5 pm	6:30 pm	Yes[3]

1. Lights would be shut off before 9:00 pm after varsity football games.
2. If necessary, and lights would be shut off before 10:30 pm after track and field meets.
3. If necessary, and lights would be shut off before 9:00 pm after varsity girls/boys soccer games.

3.3.3 Project Phasing and Construction

The proposed project would be constructed in three phases, with construction activities anticipated to begin in March 2022 and be completed in November 2026. Figures 3-7 to 3-9 show site plans for each phase.

3.3.3.1 PHASE 1

Phase 1 of the proposed project includes installing an artificial turf sport field, a nine-lane synthetic track and other track and field spaces, four Musco stadium lights, and a public address system. This phase includes installation of the scoreboard and flag pole, trenching and installation of underground utilities, construction of concrete walking path around the track, installation of stadium fencing, parking lot restriping, and relocation of the metal storage container on the southeastern corner of the parking lot (see Figure 3-7, *Phase 1 Site Plans*). Following the completion of this phase, the project site would host home track and field events and varsity soccer for boys and girls teams without bleachers.

3.3.3.2 PHASE 2

Phase 2 would include the installation of a 1,000-person bleacher on the visitor team side and a 2,000-person bleacher on the home team side. Phase 2 would include construction of the new visitor concessions/restroom/ticket booth building and pedestrian entry improvements as well as emergency access improvements such as access gate, roadway, and fire hydrant. This phase also includes new fencing, trees, irrigation, and turf surrounding the project site and basketball courts, landscape improvements and fencing around the baseball fields and the walking path to the project site, and several new concrete pavement areas (see Figure 3-8, *Phase 2 Site Plans*). Following completion of phase 2, the school would have full use of the stadium for football games and other events.

3.3.3.3 PHASE 3

During Phase 3, the construction of the home concession/restroom buildings and entry improvements would occur. The new home concession/restroom building would include a ticket booth, concessions, custodial space, and restrooms. Additionally, new masonry and landscaping would occur between the access point near the baseball fields to the home concession building. This phase also includes upgrades to the walking path on the home side to allow fire access and staircase to the project site for direct fire access (see Figure 3-9, *Phase 3 Site Plans*).

3.3.4 Discretionary Approvals

3.3.4.1 LEAD AGENCY

The Redlands Unified School District is the Lead Agency under CEQA and has the approval authority over the proposed project. Discretionary actions for the proposed project would include: (1) certification of the environmental document and (2) approval of the proposed project.

3.3.4.2 OTHER AGENCY ACTION REQUESTED

The Redlands Unified School District is the Lead Agency under CEQA and has the approval authority over the proposed project. The District would require approval and/or coordination from the following agencies to implement the proposed project.

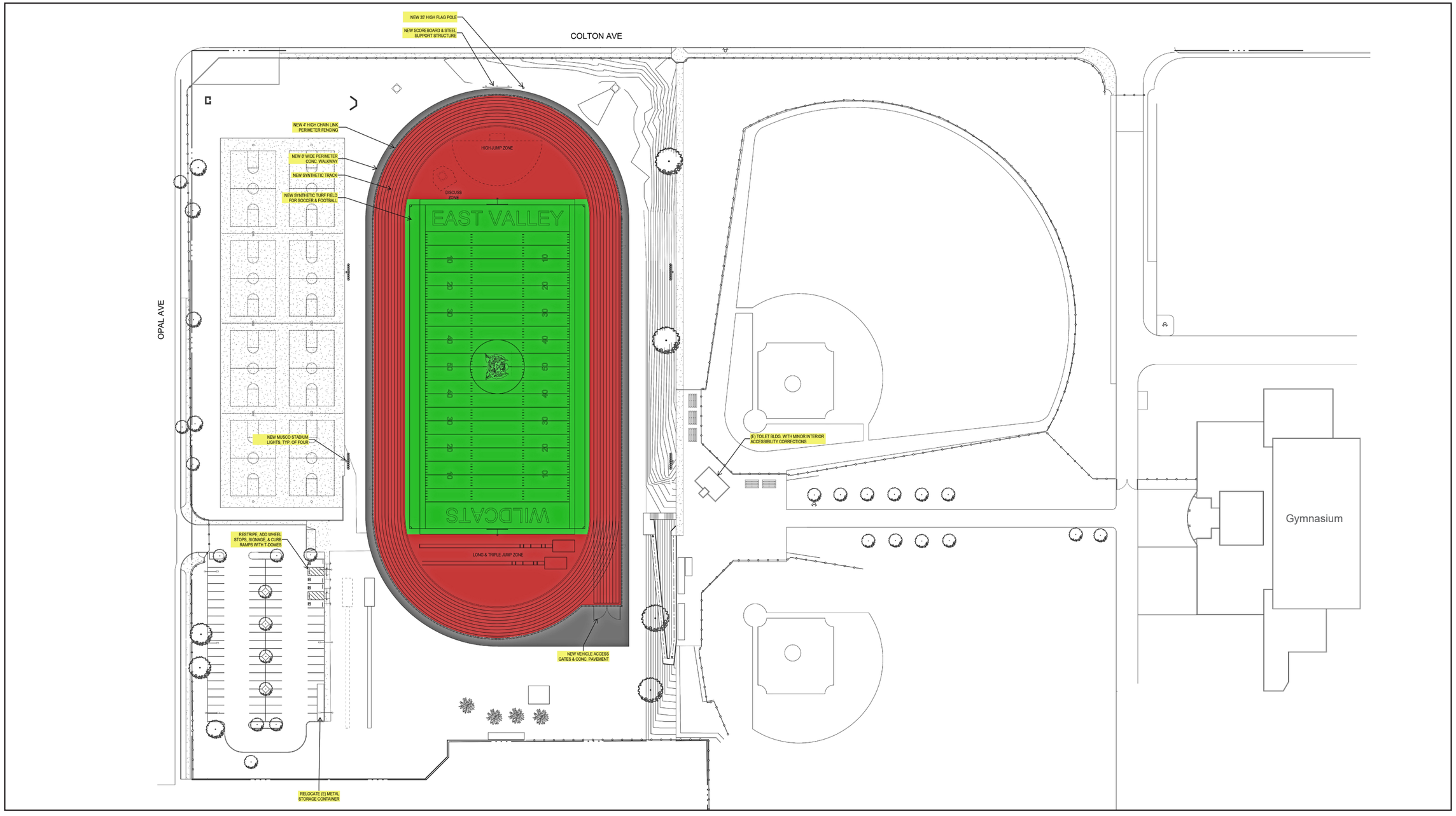
State Agencies

The District will seek approval of the proposed project from the Division of the State Architect (DSA). The District will seek approval of a construction stormwater runoff and NPDES permits from Santa Ana Regional Water Quality Control Board and construction permit from South Coast Air Quality Management District. Since the project will not receive state funding, California Department of Education (CDE) and DTSC approvals are not required.

Local Agencies

The District would require approval of the addition of a new fire hydrant from San Bernardino County Fire Department.

Figure 3-7 - Phase 1 Site Plan



Source: PCH Architects, 2021

3. Project Description

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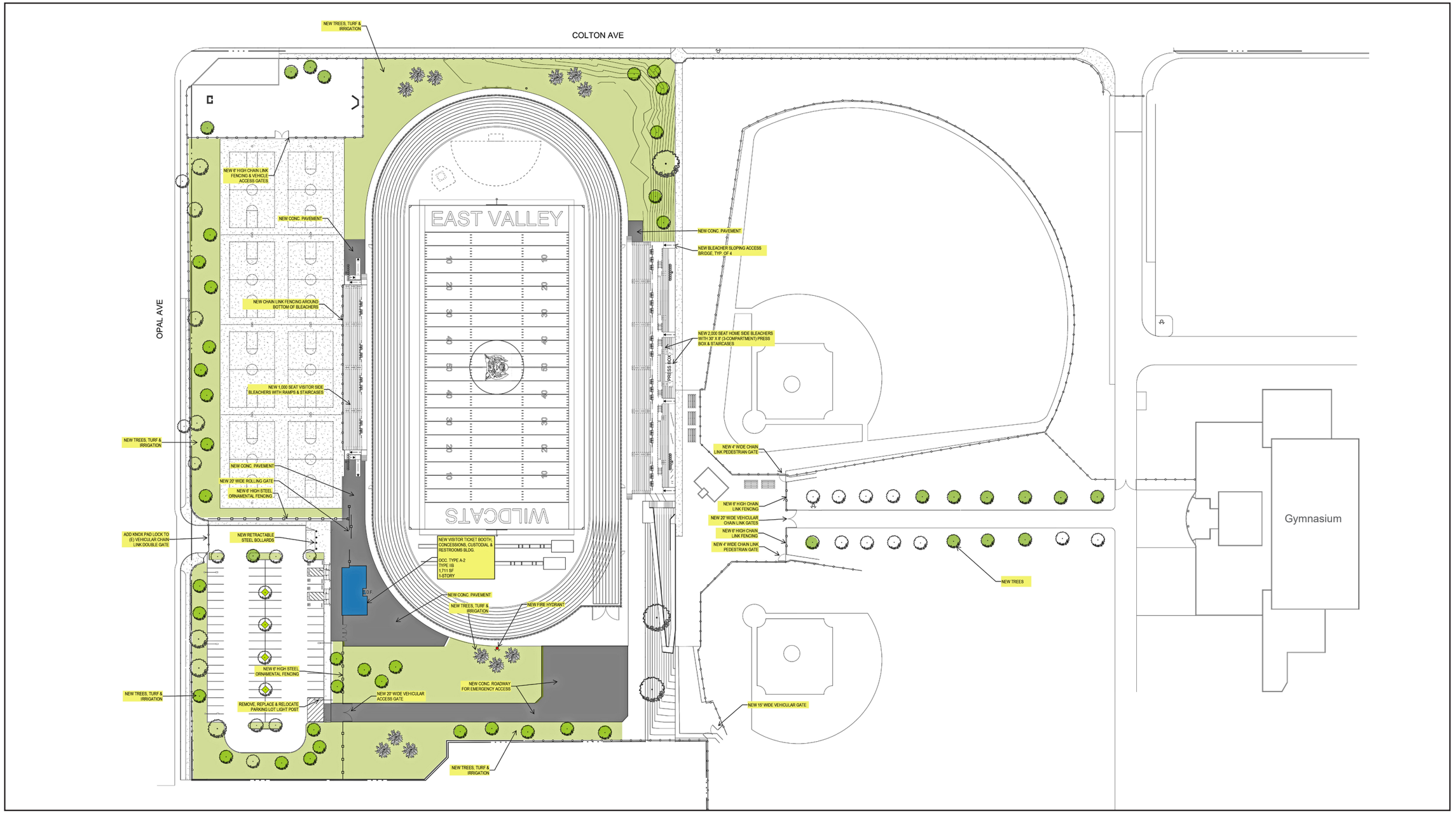
Figure 3-8 - Phase 2 Site Plan



Source: PCH Architects, 2021

3. Project Description

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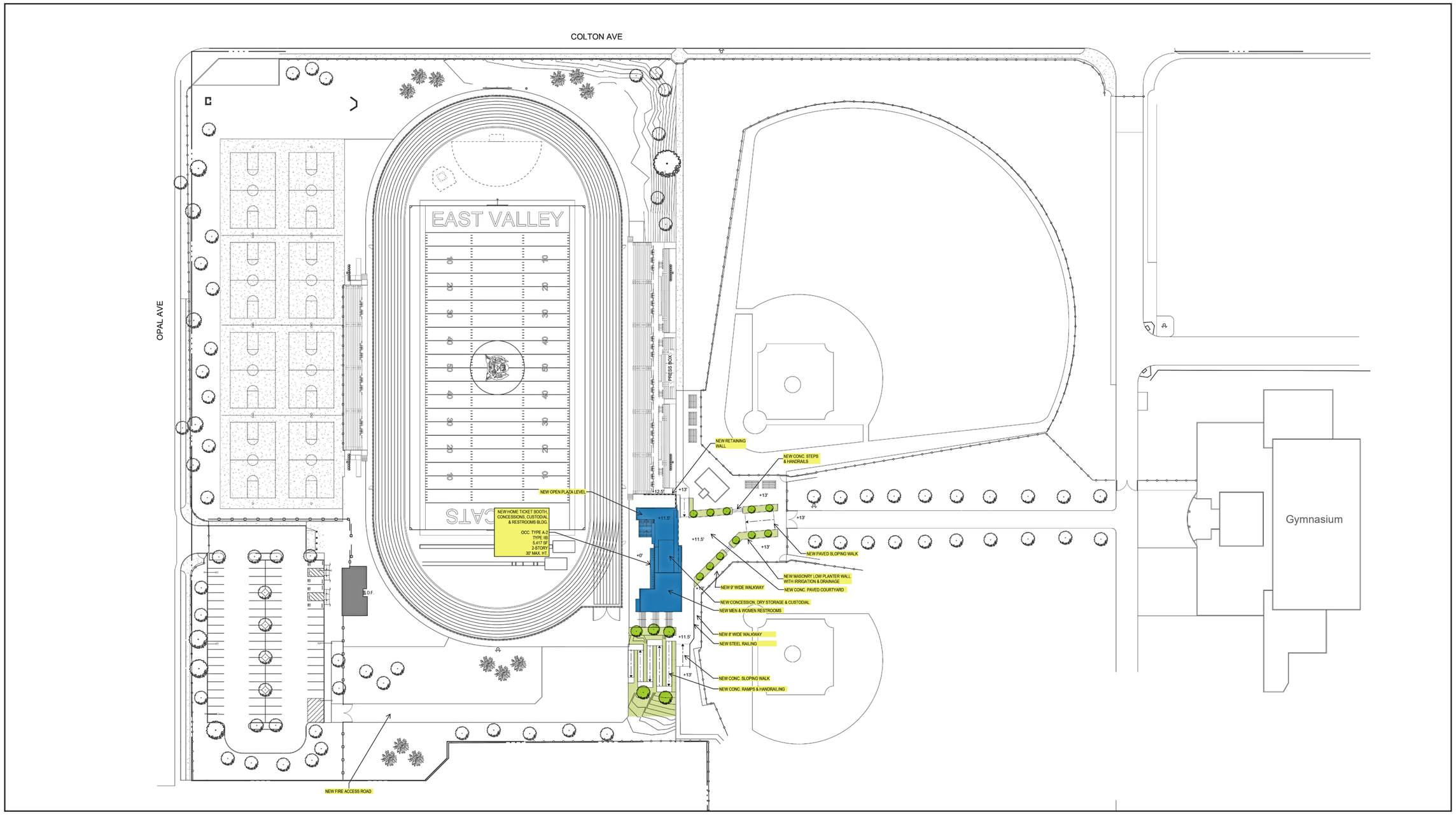
Figure 3-9 - Phase 3 Site Plan



Source: PCH Architects, 2021

3. Project Description

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3.4 INTENDED USES OF THE EIR

This Draft EIR examines the environmental impacts of the proposed project. This DEIR also addresses various actions by the District and others to adopt and implement the proposed project. It is the intent of this DEIR to evaluate the environmental impacts of the proposed project, thereby enabling the Redlands Unified School District, other responsible agencies, and interested parties to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are:

Lead Agency	Action
Redlands Unified School District	Consider Final EIR for certification and project approval
Responsible Agencies	**Action**
Department of General Services, Division of State Architect	Approval of construction drawings
Santa Ana Regional Water Quality Control Board	Construction stormwater runoff permits, NPDES Permit
South Coast Air Quality Management District	Construction Permit
San Bernardino County Fire Department	Fire and emergency access and new fire hydrant

3.4.1 Lead Agency Approval

RUSD is the lead agency under CEQA and is carrying out the proposed project; to approve the proposed project, the RUSD Board of Education must first certify the Final EIR (FEIR). The board will consider the information in the EIR when making its decision to approve or deny the proposed project, or in directing modifications to the proposed project in response to the EIR's findings and mitigation measures. The EIR is intended to disclose to the public the proposed project's details, analyses of the proposed project's potential environment impacts, and identification of feasible mitigation or alternatives that would lessen or reduce significant impacts to less than significant levels.

3. Project Description

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4. Environmental Setting

4.1 INTRODUCTION

This section provides a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, ... from both a local and a regional perspective" (Guidelines § 15125[a]), pursuant to provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The environmental setting provides the baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project.

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

Redland East Valley High School (Redlands East Valley HS), including the project site, is located in south-central portion of unincorporated San Bernardino County, near the community unincorporated community of Mentone, at the base of the foothills bordering the San Bernardino National Forest (San Bernardino County 2019). Redlands East Valley HS is near the cities of Redlands to the west, Highland to the north, and Yucaipa to the south, and the San Bernardino National Forest is located to the east. Regional access to the Redlands East Valley HS is provided by State Route (SR) 38, approximately 0.5 miles north of the campus, and Interstate 10 (I-10), approximately 3 miles west and south of the campus (see Figure 3-1, *Regional Location*).

4.2.2 Regional Planning Considerations

4.2.2.1 SOUTH COAST AIR BASIN AIR QUALITY MANAGEMENT PLAN

Redlands East Valley HS area, including the project site, is in the South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (South Coast AQMD) (SCAQMD 2021). Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law and standards are detailed in the SoCAB Air Quality Management Plan (AQMP). Air pollutants for which ambient air quality standards (AAQS) have been developed are known as criteria air pollutants—ozone (O_3), carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide, coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead. VOC and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants, such as O_3, through chemical and photochemical reactions in the atmosphere. Air basins are classified as attainment/nonattainment areas for particular pollutants depending on whether they meet AAQS for that pollutant. Based on the SoCAB AQMP, the SoCAB is designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead under the California and National AAQS and nonattainment for NO_2 under the California AAQS (USEPA 2021). The proposed project's consistency with the applicable AAQS is discussed in Section 5.2, *Air Quality*.

4.2.2.2 GREENHOUSE GAS EMISSIONS REDUCTION LEGISLATION

Current State of California guidance and goals for reductions in greenhouse gas (GHG) emissions are generally embodied in Executive Order S-03-05; Executive Order B-30-15; Assembly Bill 32 (AB 32), the Global Warming Solutions Act (2008); and Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act.

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for California:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

AB 32 was passed by the state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the emissions reduction targets established in Executive Order S-3-05. Based on the GHG emissions inventory conducted for its 2008 Scoping Plan, the California Air Resources Board (CARB) approved a 2020 emissions limit of 427 million metric tons of carbon dioxide-equivalent emissions ($MMTCO_2e$) for the state (CARB 2008). CARB is required to update the Scoping Plan every five years. In 2015, the governor signed Executive Order B-30-15 into law, establishing a GHG reduction target for year 2030, which was later codified under SB 32 (2016). The 2016-2017 update to the Scoping Plan addresses the 2030 target of a 40 percent below 1990 levels. The proposed project's consistency with CARB's Scoping Plan is analyzed in Section 5.4, *Greenhouse Gas Emissions*.

In 2008, SB 375 was adopted to connect GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled and vehicle trips. SB 375 required CARB to establish GHG emissions reduction targets for each of the 17 regions in California managed by a metropolitan planning organization (MPO). In addition, SB 375 requires CARB to update the targets for the MPOs every eight years. The targets as set by CARB in 2010 for the SCAG region are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). In 2017, SCAG's targets were updated to an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018).

The 2020-2045 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), known as Connect SoCal, projects that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. It is also projected that implementation of the plan would reduce VMT per capita for year 2045 by 4.1 percent compared to baseline conditions for the year.

4.2.2.3 SCAG REGIONAL TRANSPORTATION PLAN / SUSTAINABLE COMMUNITIES STRATEGY

SCAG is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is the federally recognized MPO for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning

transportation, the economy, community development, and the environment. It is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the southern California region's MPO, SCAG cooperates with the South Coast AQMD, the California Department of Transportation, and other agencies in preparing regional planning documents. SCAG has developed regional plans to achieve specific regional objectives, as discussed below.

The RTP/SCS is updated periodically to allow for the consideration and inclusion of new transportation strategies and methods. On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt Connect SoCal (2020–2045 RTP/SCS) and the addendum to the Connect SoCal Program EIR. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. The 2020-2045 RTP/SCS includes a "core vision" that centers on better maintaining and managing the transportation network for moving people and goods; expanding mobility choices by locating housing, jobs, and transit closer together; and increasing investments in transit and complete streets (SCAG 2020).

The RTP/SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The RTP/SCS does not require that local general plans, specific plans, or zoning be consistent, but provides incentives to governments and developers for consistency. The proposed project's consistency with the applicable 2020-2045 RTP/SCS policies is analyzed in detail in Section 5.4, *Greenhouse Gas Emissions.*

4.2.2.4 SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

In 2016, SB 1305 consolidated the County Transportation Commission, local transportation authority, service authority for freeway emergencies, and local congestion management agency into a single entity, San Bernardino County Transportation Authority (SBTCA). The SBCTA is responsible for cooperative regional planning and furthering an efficient multimodal transportation system countywide. The SBCTA administers Measure I, the half-cent transportation sales tax approved by county voters in 1989 that supports freeway construction projects, regional and local road improvements, train and bus transportation, railroad crossings, call boxes, ridesharing, congestion management efforts, and long-term planning studies (SBCTA 2021).

4.3 LOCAL ENVIRONMENTAL SETTING

4.3.1 Existing Development and Use

Redlands East Valley HS campus is approximately 60.1 acres. The eastern part of the campus is generally configured with classroom and school buildings and student, staff, and visitor parking lots. The western part is configured with athletic fields and amenities, including baseball and softball fields, tennis courts, hardcourts, a track and field, restrooms, and an additional surface parking lot. The northwest corner, north of the hard courts, includes an at grade drainage area and above-grade utility infrastructure that is fenced off.

4. Environmental Setting

Redlands East Valley HS was built in the mid-1990s and had a 2020-21 enrollment of 1,892 students in grades nine through twelve (CDE 2021). The school operates a "collaboration day" schedule on Monday, which has six 48-minute periods, and regular day schedules Tuesday through Friday, which have six 55-minute periods. Collaboration-day school hours are Monday from 8:30 am to 2:30 pm, and regular day school hours are Tuesday through Friday from 8:30 am to 3:15 pm. After-school activities may conclude as late as 9:30 pm, including use of sport fields on the west side of the campus. The school also provides optional "period 0" or "period 7" on Monday through Friday one hour before and after the school hours.

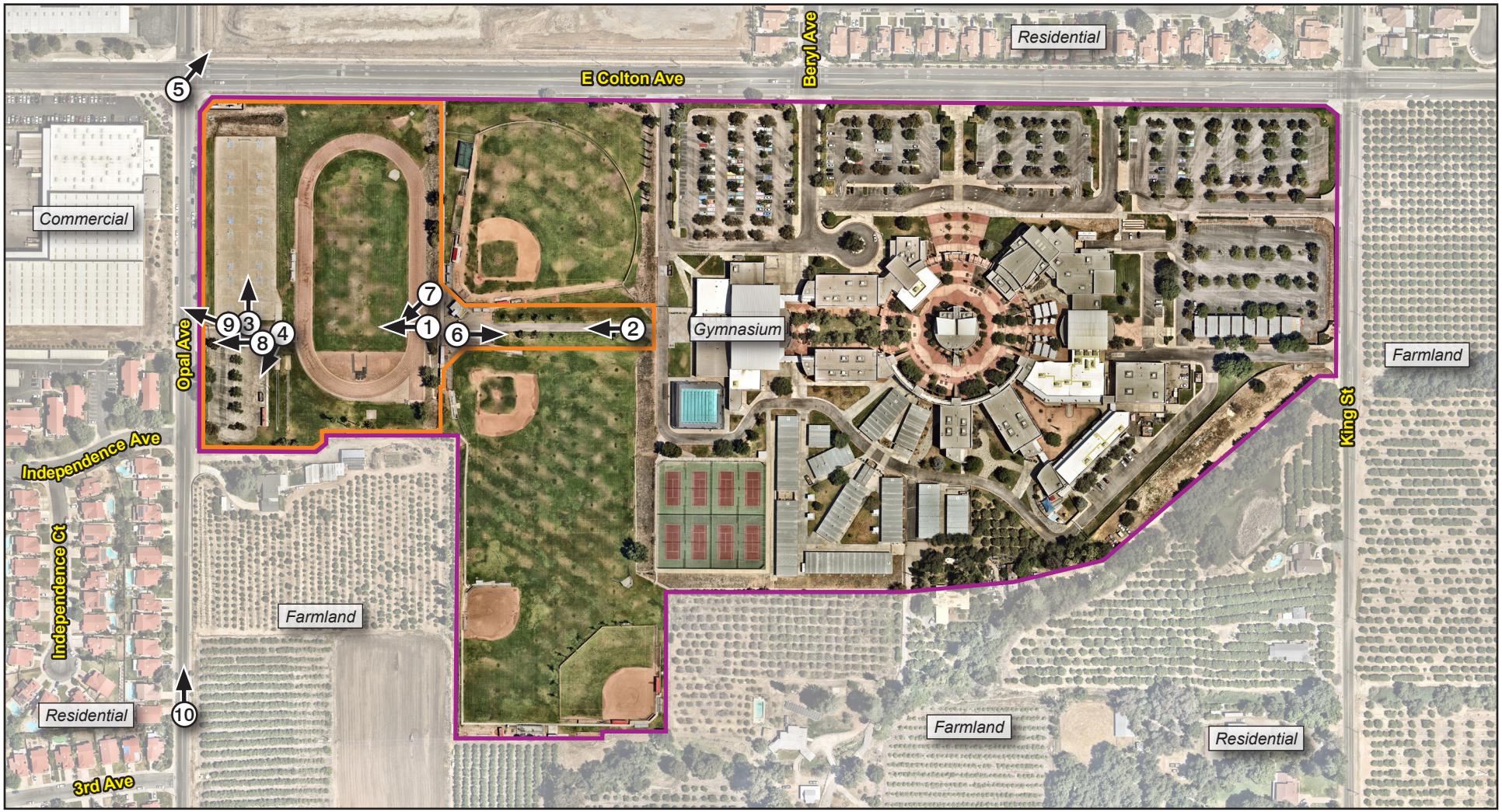
The proposed project would be on the western side of the Redlands East Valley HS campus. The project site encompasses existing sport fields, including football field, track and field, restrooms, hardcourts, parking lot, paved walkways, drainage way, utility infrastructure, and grassy areas. The project site is 6.95 acres and is generally flat, with a slope that runs along the eastern side of the project site. The football field is natural grass and is surrounded by a clay track. There are eight hardcourts to the west of the track and field, along Opal Avenue (see Figure 4-1, *Aerial Photograph with Photo Locations*, and Figure 4-2, *Existing Site Photographs*).

During the school year, the existing sport field and track and field facilities, including the project site, are regularly used by the high school for athletic practices, physical education classes, lower-level competition, and a variety of other scholastic-related events; the Redlands East Valley HS presently does not hold varsity games on site. Home games are held at different, nearby facilities in addition to the project site, including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School.

Football games generally occur Thursdays and Fridays from 7 pm to 9:30 pm. Soccer home games generally occur Wednesday immediately after school until 6:30 pm for boys teams and Fridays immediately after school until 6:30 pm for girls teams, with junior varsity (JV) playing before varsity for both teams. Additionally, track and field events typically occur Thursday after school until 6 pm, and cross-country events typically happen on Saturday mornings, starting at 7:30 am. However, track and field and cross-country events do not currently take place at the project site—Redlands East Valley HS hosts around 30 games and events per year, including lower-level sporting events, and holds an additional 30 games and events per year at the other facilities. Historically, Redlands East Valley HS averages about 100 to 200 spectators per game and/or event at the project site.

In addition to Redlands East Valley HS uses, outside sporting groups and non-school-related events have been individually permitted by RUSD to use the practice field. Currently, one non-school-related event, a fundraiser walk, that uses the project site once per year. Occasional joggers and walkers also use the track and field.

Figure 4-1 - Aerial Photograph with Photo Locations



Source: Nearmap, 2021

4. Environmental Setting

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4.3.2 Parking and Access

Main vehicular access to the Redlands East Valley HS campus is provided along East Colton Avenue, with three access points that lead to the primary parking lots. Two additional access points are on King Street along the east side of the campus and provide access to the primary parking lots, and one additional access point is on Opal Avenue and provides access to the surface parking lot onsite. The primary campus parking lot is in the northeast portion of the campus along East Colton Avenue and offers 858 spaces. Additional parking is available in a parking lot on the west side of the campus. The surface parking lot accessed via Opal Avenue currently includes 78 parking spaces, and Redlands East Valley HS presently provides a total of 936 regular parking stalls and 37 handicapped stalls. Pedestrian access to the project site includes crosswalks at the intersections along Colton Avenue and a sidewalk surrounding the perimeter of the campus on the north, east, and west sides. The campus includes internal walkways and paths between buildings throughout the campus and a path between the two baseball fields that connects the buildings on campus to the sports fields.

Access to the project site is provided from the Redlands East Valley HS campus to the east and the Opal Avenue to the west.

4.3.3 Location and Land Use

4.3.3.1 PROJECT LOCATION

Redlands East Valley HS is at 31000 East Colton Avenue (APN 0299-031-30) in the Mentone community of unincorporated San Bernardino County, California (see Figure 3-1, *Regional Location*). The Redlands East Valley High School Stadium project (proposed project) would be developed within 6.95 acres of the western portion of the existing high school (project site).

Redlands East Valley HS is bounded by East Colton Avenue to the north, Opal Avenue to the west, King Street to the east, and agricultural uses to the south (see Figure 3-2, *Local Vicinity* and Figure 4-1, *Aerial Photograph with Photo Locations*). The project site is bound by Colton Avenue to the north, Redlands East Valley HS to the east, agricultural uses and a single-family residential dwelling to the south, and Opal Avenue to the west.

4.3.3.2 EXISTING LAND USE AND ZONING DESIGNATIONS

Redlands East Valley HS is within an unincorporated area of San Bernardino County. According to the San Bernardino County Zoning District Maps, Redlands East Valley HS is zoned "IN" Institutional (San Bernardino 2021). The San Bernardino General Plan Land Use map designation is "PF" Public Facility (San Bernardino 2020).

The proposed project would be developed on the project site within the boundaries of the existing Redlands East Valley HS campus. The proposed project's development would not require modification to Redlands East Valley HS's current General Plan designation or zoning.

4.3.4 Surrounding Land Use

The project site is bordered by East Colton Avenue and an active development site across Colton Avenue to the north, the Redlands East Valley HS baseball fields to the east, a single-family residential dwelling and an agricultural orchard to the south, and Opal Avenue to the west. A single-family and multifamily neighborhood and a paper supply company are to the west of the campus, across Opal Avenue. See Figure 4-1, *Aerial Photograph with Photo Locations*, and Figure 4-3, *Surrounding Land Use Photos*.

The properties surrounding Redlands East Valley HS are zoned community industrial ("IC") to the north and west, single residential to the northeast (RS), rural living ("RL")–5-acre minimum to the east and south, rural living–5-acre minimum–agricultural preserve to the southeast, and multiple residential ("RM") to the west (San Bernardino 2021). The surrounding General Plan land use designations include limited industrial to the northwest, low density residential to the north, very low density residential to the east and south, and medium density residential to the west (San Bernardino 2020).

4.3.5 Scenic Features

The project site is surrounded by academic facilities on the Redland East Valley HS campus to the east; a paper supply company and residential uses to the west across Opal Avenue; and single-family residential dwelling and an agricultural orchard to the south. Directly to the north of the project site is an active development site across Colton Avenue, with single-family residences further north and northeast. The project site's surrounding vicinity fully developed with residential, commercial, educational, and agricultural uses. The project site is not part of a scenic vista. Views around the project site are characterized by residential, commercial, industrial, and agricultural uses. Views of the San Bernardino Mountains can be seen in the distance when looking north along Opal Avenue and Colton Avenue. Details related to impacts on the project site's scenic features and visual character are provided in Section 5.1, *Aesthetics*.

4.3.6 Climate and Air Quality

As described in Section 4.2.2.1, the unincorporated community of Mentone is in the SoCAB, which is managed by South Coast AQMD. The SoCAB is designated nonattainment for ozone (O_3), fine inhalable particulate matter ($PM_{2.5}$), and lead under the California and National AAQS and nonattainment for coarse inhalable particulate matter (PM_{10}) and nitrogen dioxide (NO_2) under the California AAQS. Additional information regarding air quality and climate change regulations affecting the Mentone community is provided in Section 4.2.2, *Regional Planning Considerations*. Existing air quality conditions in the Mentone community, greenhouse gas emissions and energy consumption are discussed in more detail in Sections 5.2, *Air Quality*, 5.3, *Energy*, and 5.4, *Greenhouse Gas Emissions*.

Figure 4-2 - Existing Site Photographs

View 1: From the east side of the track and field, looking west at the track and field on the project site.

View 2: From the gymnasium building to the east of the project site, looking west towards the west side of the project site.

View 3: From the south side of the hardtop basketball courts onsite, looking north at the basketball courts and towards the north side of project site.

View 4: From the northeast corner of the existing surface parking lot onsite, looking southeast at the parking lot.

Source: PlaceWorks, 2021

4. Environmental Setting

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Figure 4-3 - Surrounding Land Use Photographs

View 5: From the intersection of Colton Avenue and Opal Avenue, looking northeast at the active construction site north of the project site and the residential neighborhood to the northeast of the project site.

View 6: From the east side of the project site, looking east towards the east side of the Redlands East Valley High School campus.

View 7: From the east side of the track and field, looking southwest towards the residential and agricultural uses to the south of the project site.

View 8: From the existing parking lot on the west side of the project site, looking southwest at the residential uses along Opal Avenue.

View 9: From the existing parking lot on the west side of the project site, looking northwest at the industrial use along Opal Avenue.

View 10: From Opal Avenue, south of the project site, looking north along Opal Avenue at the residential and agricultural uses along Opal Avenue.

Source: PlaceWorks, 2021

4. Environmental Setting

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4.3.7 Hydrology

An existing underground stormwater drainage line enters the project site from the northeast corner and runs west along the northern end of the project site. This storm drain line comes above ground in an at-grade drainage area on the northwest corner of the project site. A second existing underground stormwater drainage line enters the project site at the southeast corner, runs north along the top of the slope to the east of the existing football field and track and field, and connects to the aforementioned stormwater drainage line along the north end of the project site. Catch basins and storm drain lines surround the existing sport field also discharge to the at-grade drainage area. Stormwater from this drainage area continues offsite in underground drainage line at the northwest corner of the project site. Stormwater onsite either flows through this stormwater water system or is directed towards concrete gutters onsite and in the public right-of-way offsite.

The City of Redlands, which serves the project site, receives its water from the Mill Creek Watershed, Santa Ana River Watershed, local groundwater, and the California State Water Project (Redlands 2021). The proposed project area is within Federal Emergency Management Act, Flood Zone Designation X (Zone X) (FEMA 2008). Zone X is an area with reduced flood risk due to levee. However, the proposed project site is also located adjacent to areas within FEMA Flood Zone AE, which are areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown, and mandatory flood insurance purchase requirements and floodplain management standards apply. Refer to Section 5.5, *Hydrology and Water Quality*, for additional information regarding hydrological conditions and an analysis of project impacts on hydrology and water quality.

4.3.8 Noise

The project site is in a largely developed area with residential, commercial, industrial, academic, and agricultural uses and is subject to noise from transportation and stationary sources. In addition to roadway noise and stationary noise sources (property maintenance, light mechanical equipment, people talking, etc.), the project vicinity is also subject to recurring events of athletic field noise from the existing uses on the project site. Noise-sensitive receptors in the vicinity of the proposed project are the residential uses northwest, west, and a single-family residential dwelling to the south of the project site. Refer to Section 5.6, *Noise*, for additional information concerning the noise environment and an analysis of project-related noise impacts.

4.3.9 Public Services

Fire protection services for Redlands East Valley HS and the community of Mentone are provided by the San Bernardino County Fire Department. The jurisdictional fire station for Redlands East Valley HS is Mentone-Station 9, approximately 0.75 miles northeast of the campus. Through a mutual aid agreement, other stations may also respond to calls from the project site, including stations operated by the City of Redlands Fire Department. Police protection services are provided by the San Bernardino County Sheriff's Department. The jurisdictional sheriff's station for Redlands East Valley HS is the Yucaipa Station, approximately five miles southeast of the campus. Refer to Section 5.7, *Public Services*, for additional information concerning emergency service impacts.

4.3.10 Transportation

Redlands East Valley HS is bounded by East Colton Avenue to the north, Opal Avenue to the west, and King Street to the east. The main thoroughfare through the Mentone community is Mentone Boulevard (SR-38), a two-lane highway (one travel lane in each direction) with sidewalks. Bike lanes and trails are limited in Mentone, but some around the community connect to Yucaipa and Redlands. Mentone is served by Omnitrans, which connects Mentone to Crafton Hills College, Fontana, Colton, Redlands, and Yucaipa (San Bernardino 2019). Refer to Section 5.8, *Transportation*, for additional information concerning traffic and transportation impacts.

4.3.11 Tribal Cultural Resources

The project area is within the traditional boundaries of the San Manuel Band of Mission Indians. The San Manuel Band of Mission Indians is a federally recognized American Indian tribe located in San Bernardino County, California. The San Manuel reservation was established in 1891 and recognized as a sovereign nation with the right of self-government. The San Manuel tribal government oversees many governmental units, including the departments of fire, public safety, education, and environment. Refer to Section 5.9, *Tribal Cultural Resources*, for additional information concerning tribal cultural impacts.

4.4 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where they are significant. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts as "...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources:

A. A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency.

B. A summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impacts analyses in this DEIR use Method B. The County of San Bernardino completed a comprehensive Countywide Plan and associated Program EIR, adopted in 2020. The cumulative impact analysis in this DEIR utilizes the projections in the Countywide Plan and associated Program EIR. Table 4-1, *Demographic Projections for Cumulative Analyses*, presents population, housing, and nonresidential square footage projections for existing conditions; Countywide Plan horizon year 2040, and net changes.

The County has adopted growth projections for planning horizon year post-2040 (representing Countywide Plan buildout). The San Bernardino Countywide Plan identifies a population increase of 323 residents (3.3 percent), housing units increase of 108 (3.14 percent), and an employment increase of 501 (29 percent) in the unincorporated community of Mentone. Additionally, the Countywide Plan identifies a population increase of 26.5, housing units increase of 34 percent, and an employment increase of 39.1 percent in the in the Valley Region. The transportation study prepared for the proposed project assumes a general regional growth rate of 10.4 percent, which is well above the forecasted population and housing unit growth in the Mentone community. Since the proposed project would not increase student enrollment and does not generate new housing units, this approach to the Regional Growth Projections Method of using adopted local growth projections is highly conservative and appropriate for evaluating cumulative impacts related to the proposed project.

In addition, the cumulative analyses considers one cumulative project, the 800 Opal, LLC Manufacturing/Warehouse Project, which is located directly across Colton Avenue from the project site. The 800 Opal LLC Manufacturing/Warehouse Project includes the construction of a new 2,358 square foot office building for on-line vehicle auction company and would involve the shipping, receiving and storage of vehicles, including industrial and construction equipment.

The cumulative impacts of the Proposed Project have been addressed for each environmental category discussed in Chapter 5.0, *Environmental Analysis*, of this DEIR.

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Table 4-1 Demographic Projections for Cumulative Analyses

	Existing Conditions				Countywide Plan Horizon Year 2040				Net Change			
Area	Population	Housing Units	Nonresidential SF	Employment	Population	Housing Units	Nonresidential SF	Employment	Population	Housing Units	Nonresidential SF	Employment
Mentone	9,901	3,440	1,223,890	1,726	10,224	3,548	1,495,492	2,227	323	108	271,603	501
Valley Region	1,536,347	465,407	327,288,487	588,152	1,943,708	623,812	778,397,851	818,492	407,361	158,405	451,109,363	230,340
San Bernardino County	2,114,122	708,223	386,445,968	685,912	2,744,578	941,201	1,069,055,321	1,002,483	630,456	232,977	682,609,354	316,572

Source: San Bernardino Countywide Plan 2020

4. Environmental Setting

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4.5 REFERENCES

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4. Environmental Setting

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5. Environmental Analysis

Chapter 5 examines the environmental setting of the Redland East Valley High School Stadium Project (proposed project), analyzes its effects and the significance of its impacts, and recommends mitigation measures to reduce or avoid impacts. This chapter has a separate section for each environmental issue area that was determined to need further study in the Draft Environmental Impact Report (DEIR). This scope was determined in the Initial Study/Notice of Preparation (IS/NOP), which were published November 24, 2021 (see Appendix A), and through public and agency comments received during the NOP comment period from November 24, 2021, to December 23, 2021 (see Appendix A). Environmental issues and their corresponding sections are:

- 5.1 Aesthetics
- 5.2 Air Quality
- 5.3 Energy
- 5.4 Greenhouse Gas Emissions
- 5.5 Hydrology and Water Quality
- 5.6 Noise
- 5.7 Public Services
- 5.8 Transportation
- 5.9 Tribal Cultural Resources

Sections 5.1 through 5.9 provide a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure are also discussed.

The IS/NOP also determined that certain issues under an environmental topic would not be significantly affected by implementation of the proposed project; these issues are not discussed further in this DEIR.

Organization of Environmental Analysis

To assist the reader with comparing information between environmental issues, each section is organized under the following major headings:

- Environmental Setting
- Thresholds of Significance
- Environmental Impacts
- Cumulative Impacts
- Level of Significance Before Mitigation
- Mitigation Measures

5. Environmental Analysis

- Level of Significance After Mitigation
- References

In addition, Chapter 1, *Executive Summary,* has a table that summarizes all impacts by environmental issue.

Terminology Used in This Draft EIR

The level of significance is identified for each impact in this DEIR. Although the criteria for determining significance are different for each topic area, the environmental analysis applies a uniform classification of the impacts based on definitions consistent with California Environmental Quality Act (CEQA) and the CEQA Guidelines:

- **No impact.** The project would not change the environment.
- **Less than significant.** The project would not cause any substantial, adverse change in the environment.
- **Less than significant with mitigation incorporated.** The EIR includes mitigation measures that avoid substantial adverse impacts on the environment.
- **Significant and unavoidable.** The project would cause a substantial adverse effect on the environment, and no feasible mitigation measures are available to reduce the impact to a less than significant level.

5.1 AESTHETICS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the proposed project at Redlands East Valley High School to result in aesthetic impacts at the campus and surrounding community.

No comments were received in response to the Initial Study/Notice of Preparation (IS/NOP) with respect to aesthetics. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.1.1 Environmental Setting

5.1.1.1 REGULATORY BACKGROUND

State and local laws, regulations, plans, or guidelines regarding fire, emergency, and police services that are potentially applicable to the proposed project are summarized in this section.

State

State Scenic Highway Program

The State Scenic Highway Program was created in 1963 by the State Legislature to protect and enhance the natural scenic beauty along portions of state highway system that are determined to be scenic highways. Scenic highways can have an "eligible" designation or be "officially designated." The status of a proposed state scenic highway changes from eligible to officially designated when a local jurisdiction adopts a scenic corridor protection program, then applies to the California Department of Transportation (Caltrans) for scenic highway approval and receives notification from Caltrans that the highway has been officially designated as a Scenic Highway.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017. Title 24 requires outdoor lighting controls to reduce energy usage; in effect, this reduces outdoor lighting.

Nighttime Sky, CCR Title 24, Outdoor Lighting Standards

The California legislature passed a bill in 2001 requiring the California Energy Commission to adopt energy efficiency standards for outdoor lighting, both public and private. In November 2003, the commission adopted changes to the California Code of Regulations, Title 24, parts 1 and 6, Building Energy Efficiency Standards. These standards became effective on October 1, 2005, and included changes to the requirements for outdoor lighting for residential and nonresidential development. These standards improved the quality of outdoor

lighting and helped to reduce the impacts of light pollution, light trespass, and glare. The standards regulate lighting characteristics such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set for different "lighting zones" (LZ), and the zone for a specific area is based on population figures from the 2000 Census. Areas can be designated LZ1 (dark), LZ2 (rural), or LZ3 (urban). Based on this classification, the project site is designated LZ3.

Local

San Bernardino Countywide Plan

The Countywide Plan is primarily a policy document that sets goals concerning the community and gives direction to growth and development. In addition, it outlines the programs that were developed to accomplish the goals and policies of the General Plan.

Land Use Element

The Land Use Element has the following goals, policies, and objectives related to visual resources:

- Goal LU-4 Community Design Preservation and enhancement of unique community identities and their relationship with the natural environment.
    - Policy LU-4.5 Community identity. We require that new development be consistent with and reinforce the physical and historical character and identity of our unincorporated communities, as described in Table LU-3 and in the values section of Community Action Guides. In addition, we consider the aspirations section of Community Action Guides in our review of new development.
    - Policy LU-4.7 Dark skies. We minimize light pollution and glare to preserve views of the night sky, particularly in the Mountain and Desert regions where dark skies are fundamentally connected to community identities and local economies. We also promote the preservation of dark skies to assist the military in testing, training, and operations.

Resources and Conservation Element

The Resources and Conservation Element has the following goals, policies, and objectives related to visual resources:

- Goal NR-4 Scenic Resources Scenic resources that highlight the natural environment and reinforce the identity of local communities and the county.
    - Policy NR-4.1 Preservation of scenic resources. We consider the location and scale of development to preserve regionally significant scenic vistas and natural features, including prominent hillsides, ridgelines, dominant landforms, and reservoirs.
    - Policy NR-4.2 Coordination with agencies. We coordinate with adjacent federal, state, local, and tribal agencies to protect scenic resources that extend beyond the County's land use authority and are important to countywide residents, businesses, and tourists.

- Policy NR-4.3 Off-site signage. We prohibit new off-site signage and encourage the removal of existing off-site signage along or within view of County Scenic Routes and State Scenic Highways.

San Bernardino County Municipal Code

Section 83.07.050 Light Trespass – Valley Requirements.

This Section provides standards for outdoor lighting in the Valley Region.

a) *Light Trespass from Commercial or Industrial Use – Prohibited.* Outdoor lighting of commercial or industrial land uses shall be fully shielded to preclude light pollution or light trespass in excess of the maximum allowed foot-candles allowed by subdivision (b) on any of the following:

1. An abutting residential land use zoning district;
2. A residential parcel; or
3. Public right-of-way.

b) *Maximum Allowed Foot-candles.* Direct or indirect light from any light source shall not cause light trespass exceeding five-tenths foot-candles when measured at the property line of a residential land use zoning district, residential parcel, or public right-of-way. Light levels shall be measured with a light meter, following the standard spectral luminous efficiency curve adopted by the International Commission on Illumination (CIE) (Ord. 4419, passed 2021)

Section 82.06.060 Industrial and Special Purpose Land Use Zoning District Site Planning and Building Standards.

A. Site Layout and Building Standards. Subdivisions, new land uses and structures, and alterations to existing land uses and structures, shall be designed, constructed, and established in compliance with the requirements in Tables, 82-19A and B, 82-20A and B, 82-21A and B, in addition to the applicable standards (e.g., landscaping, parking and loading, etc.) in Division 3 (Countywide Development Standards), and Division 4 (Standards for Specific Land Uses and Activities).

Table 82-19B IN and SD Land Use Zoning District Development Standards - Valley Region

Development Feature	Requirement by Land Use Zoning District	
	IN Institutional	SD Special Development
Density	Maximum housing density. The actual number of units allowed will be determined by the County through subdivision or planning permit approval, as applicable.	
Maximum density	Accessory dwellings as allowed by Chapter 84.01 (Accessory Structures and Uses)	1 unit per 40 acres(1) Accessory dwellings as allowed by Chapter 84.01 (Accessory Structures and Uses)
Setbacks	Minimum setbacks required. See Chapters 83.05 and 83.06 for exceptions, reductions, and encroachments. See Division 5 for any setback requirements applicable to specific land uses.	

Table 82-19B IN and SD Land Use Zoning District Development Standards - Valley Region

Development Feature	Requirement by Land Use Zoning District	
	IN Institutional	SD Special Development
Front	25 ft.	25 ft.
Side - Street side	25 ft.	25 ft.
Side - Interior (each)	10 ft.	10 ft.
Rear	10 ft.	10 ft.
Floor area ratio (FAR)	Maximum floor area ratio (FAR) allowed.	
Maximum FAR	.75:1	.5:1
Lot coverage	Maximum percentage of the total lot area that may be covered by structures and impervious surfaces.	
Maximum coverage	80 percent	80 percent
Height limit	Maximum allowed height of structures. See § 83.02.040 (Height Limits and Exceptions) for height measurement requirements, and height limit exceptions.	
Maximum height	150 ft.	50 ft.
Accessory structures	See Chapter 84.01 (Accessory Structures and Uses).	
Infrastructure	See Chapter 83.09 (Infrastructure Improvement Standards).	
Landscaping	See Chapter 83.10 (Landscaping Standards).	
Parking	See Chapter 83.11 (Parking Regulations).	
Signs	See Chapter 83.13 (Sign Regulations).	

Notes: (1) Except where modified by a map suffix or when a Planned Development application has been approved establishing a different density.

5.1.1.2 EXISTING CONDITIONS

Visual Character

The project site is fully developed and consists of outdoor athletic features that support the larger high school campus. The project site is bordered by East Colton Avenue and an active development site across Colton Avenue to the north. The Redlands East Valley HS baseball fields to the east, a single-family residential dwelling and an agricultural orchard to the south, and Opal Avenue to the west. A single-family and multifamily neighborhood and a paper supply company are to the west of the campus, across Opal Avenue. As discussed in the Initial Study to this DEIR, the project site does not contain unique visual features that would distinguish it from surrounding areas.

Landform

The project site and surrounding immediate vicinity are largely flat with an elevation of approximately 1,681 feet above mean sea level (amsl) on (USGS 2021).

Scenic Vistas and Corridors

The project site is not located within a designated scenic vista. Although the project site is located in a developed urban area and is not part of a scenic vista, views around the project site include the San Bernardino Mountains in the distance.

Additionally, the project site is not located near or within a designated scenic highway. The nearest officially designated state scenic highway is a portion of State Route 38 (SR-38) beginning at Post Mile (PM) 31 and ending at PM 46.7, located approximately 19 miles northeast of the project site. Additionally, the nearest eligible scenic highway is located approximately 0.5-mile north of the project site, on SR-38, beginning at PM S0.372 and ending at PM 49.5 (Caltrans 2021).

Light and Glare

The project site and its immediate vicinity contain many existing sources of nighttime illumination. There is no nighttime lighting installed on the existing athletic fields. Off-site lighting sources includes street lighting, exterior lighting on existing residential and commercial uses.

Existing Views

The existing visual character of the Project Site is of a school campus and is designated as "IN" Institutional in the San Bernardino County Zoning District Maps (San Bernardino 2021). Properties surrounding the project site are zoned Community Industrial to the north and west, single residential to the northeast, rural living-5 acre minimum to the east and south, rural living-5 acre minimum- agricultural preserve to the southeast, and multiple residential to the west (San Bernardino 2021). The Redlands East Valley HS campus is approximately 60.1 acres in size, and contains approximately 132 classrooms, administrative buildings, multipurpose rooms, a media center, theater, a gymnasium, locker rooms, pool, baseball/softball fields, hardtop basketball courts, a football/soccer field, and staff/student parking lots.

The proposed project would be located on the western side of the Redlands East Valley HS campus. The project site encompasses the existing sport fields, including football field and track and field, restrooms, hardcourts, parking lot, paved walkways, drainage way, utility infrastructure, and grassy areas. The project site is approximately 6.95 acres and is generally flat with a slope that runs along the eastern side of the project site. The football field is natural grass. The football field is surrounded by a clay track. There are eight existing hardtop courts to the west of the track and field, along Opal Avenue.

The project site can be seen from public rights of way, including Opal Avenue and Colton Avenue. Public viewing points identified in Figure 5.1-1 were chosen as representative sample of views of the Project Site from the surrounding public rights-of-way. Views from private residences are not protected views under CEQA. The views from each of these public viewing points are described here.

View 1 is looking southwest toward the project site from the intersection of Beryl Avenue and Colton Avenue near the single-family residential community north of Colton Avenue. Existing development and vegetation largely block views of the project site from this location. During the daytime, the primary view from this point would be the school parking lot, and street trees and lights located along Colton Avenue.

View 2 is looking southeast at the project site from the intersection of Colton Avenue and Opal Avenue. The project site is visible from this location, and a block wall and chain-link fence around the project site partially block views of the existing athletic field and track onsite. Portions of the project site, such as the northern end of the project site can be seen from this location.

View 3 is located south of the project site along Opal Avenue and is looking northeast towards the project site. The agricultural uses on the property to the south of the project site largely block views of the project site.

5.1.2 Thresholds of Significance

Appendix G of the CEQA Guidelines states that, "except as provided in Public Resources Code Section 21099," a project would normally have a significant effect on the environment if the project would:

AE-1 Have a substantial adverse effect on a scenic vista.

AE-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

AE-3 In non-urbanized areas, 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 publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

AE-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

- The Initial Study, included as Appendix A to this DEIR, substantiates that impacts associated with the following thresholds would be less than significant; therefore, these impacts will not be further addressed in this DEIR: Threshold AE-1
- Threshold AE-2

5.1.3 Environmental Impacts

5.1.3.1 METHODOLOGY

Nighttime illumination and glare impacts are the effects of a project's exterior lighting upon adjoining uses and areas. Light and glare impacts are determined through a comparison of the existing light sources with the proposed lighting plan or policies. In some cases, excessive light and glare can be annoying to residents or other sensitive land uses; be disorienting or dangerous to drivers; impair the character of rural communities; and/or adversely affect wildlife.

Nighttime illumination and glare analysis address the effects of a project's nighttime lighting on adjoining uses and areas. Light and glare impacts are determined through a comparison of the existing light sources with the proposed lighting plan or policies. If the project has the potential to generate spill light on adjacent sensitive

receptors or generate glare at receptors in the vicinity of the project site, mitigation measures can be provided to reduce potential impacts, as necessary. The following provides relevant lighting assessment terminology used in this analysis.

Foot-candle. The unit of measure expressing the quantity of light on a surface. One foot-candle is the illuminance produced by a candle on a surface of one square foot from a distance of one foot. The general benchmarks for light levels are shown in Table 5.1-1.

Table 5.1-1 General Light Levels Benchmark

Outdoor Light	Foot-Candles
Direct Sunlight	10,000
Full Daylight	1,000
Overcast Day	100
Dusk	10
Twilight	1
Deep Twilight	0.1
Full Moon	0.01
Quarter Moon	0.001
Moonless Night	0.0001
Overcast Night	0.00001
Gas station canopies	25–30
Typical neighborhood streetlight	1.0–5.0

Source: NOAO 2020.

Horizontal foot-candle. The amount of light received on a horizontal surface such as a roadway or parking lot pavement.

Vertical foot-candle. The amount of light received on a vertical surface such as a billboard or building façade.

Lumen. A unit of measure for quantifying the amount of light energy emitted by a light source. In other words, foot-candles measure the brightness of the light at the illuminated object, and lumens measure the amount of light radiated by the light source.

Luminaire ("light fixture"). The complete lighting unit (fixture) consists of a lamp—or lamps and ballast(s)—and the parts that distribute the light (reflector, lens, diffuser), position and protect the lamps, and connect the lamps to the power supply. An important component of luminaires is their shielding:

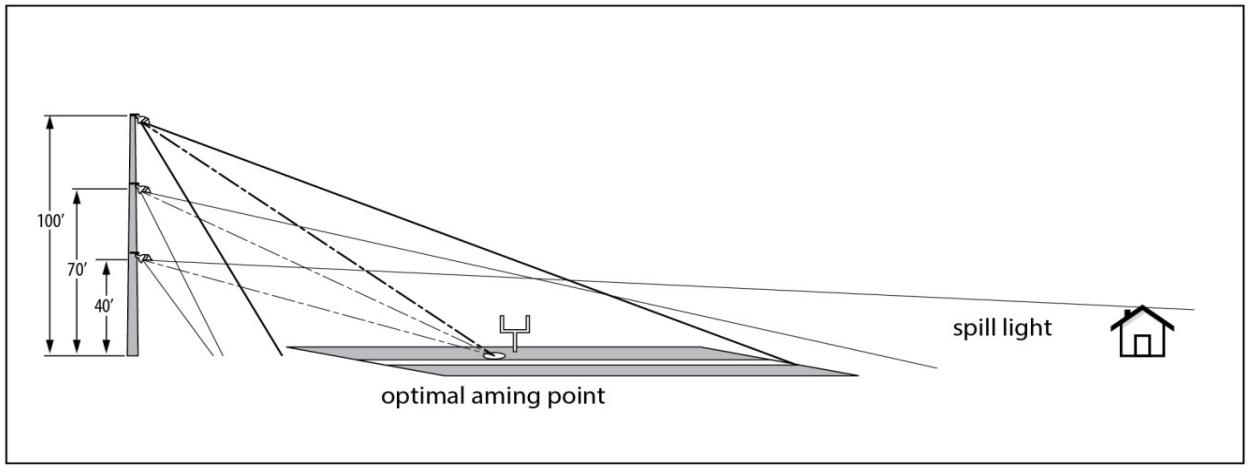
- ***Fully shielded.*** A luminaire emitting no light above the horizontal plane.
- ***Shielded.*** A luminaire emitting less than 2 percent of its light above the horizontal plane.
- ***Partly shielded.*** A luminaire emitting less than 10 percent of its light above the horizontal plane.
- ***Unshielded.*** A luminaire that may emit light in any direction.

5. Environmental Analysis
AESTHETICS

Spill light. Light from a lighting installation that falls outside the boundaries of the property for which it is intended.

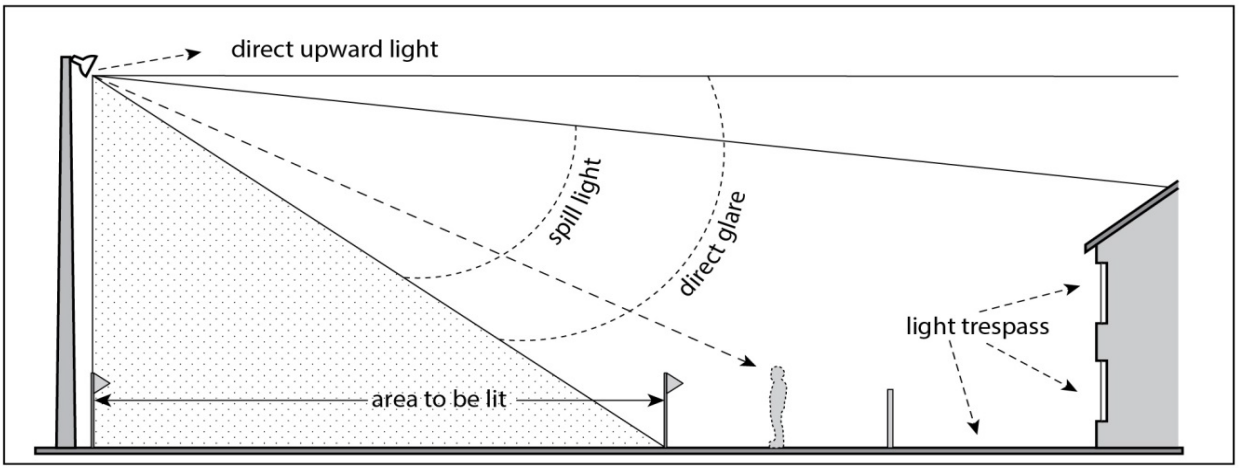
Light trespass. Spill light that, because of quantitative, directional, or type of light, causes annoyance, discomfort, or loss in visual performance and visibility. Light trespass is light cast where it is not wanted or needed, such as light from a streetlight or a floodlight that illuminates someone's bedroom at night, making it difficult to sleep. As a general rule, taller poles allow fixtures to be aimed more directly on the playing surface, which reduces the amount of light spilling into surrounding areas. Proper fixture angles ensure even light distribution across the playing area and reduce spill light. See 5.1-1*, Light Trespass*, adapted from Musco Sports Lighting, LLC. (Musco Lighting) (Musco Lighting 2015).

Figure 5.1-1 Light Trespass



Glare. Light that causes visual discomfort or disability or a loss of visual performance when a bright object appears against a dark background. Glare can be generated by building-exterior materials, surface-paving materials, vehicles traveling or parked on roads and driveways, and stadium lights. Any highly reflective façade material is a concern because buildings can reflect bright sunrays. The concepts of spill light, direct glare, and light trespass are illustrated in Figure 5.2-2, *Glare*, below, adapted from Institution of Lighting Engineers (ILE 2003).

Figure 5.1-2 Glare



Light trespass varies according to surrounding environmental characteristics. Areas that are more rural in character are more susceptible to impacts resulting from the installation of new artificial lighting sources, whereas urbanized areas are characterized by a large number of existing artificial lighting sources and are less susceptible to adverse effects associated with new artificial lighting sources. Therefore, lighting standards vary according to the amount and intensity of existing light sources in the area. In order to determine appropriate lighting standards that reflect the existing lighting conditions, land uses are categorized into four lighting zones (IES 2003):

- **LZ1: Low ambient lighting.** Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety and convenience, but it is not necessarily uniform or continuous. After curfew, most lighting should be extinguished or reduced as activity levels decline.
- **LZ2: Moderate ambient lighting.** Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety and convenience, but it is not necessarily uniform or continuous. After curfew, lighting may be extinguished or reduced as activity levels decline.
- **LZ3: Moderately high ambient lighting.** Areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security, and/or convenience, and it is often uniform and/or continuous. After curfew, lighting may be extinguished or reduced in most areas as activity levels decline.
- **LZ4: High ambient lighting.** Areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security, and/or convenience, and it is mostly uniform and/or continuous. After curfew, lighting may be extinguished or reduced in some areas as activity levels decline.

The project site is identified as LZ3 based on population figures from the 2019 Mentone Community Profile (San Bernardino County 2019) and the above IES lighting zone description.

Proposed Lighting System

As discussed in Chapter 3 of this DEIR, the proposed project would result in the installation of a new football stadium, track & field facilities, and associated improvements would replace the existing football field and track & field facilities. The proposed project would include bleacher seating for 3,000 people, lighting, a home ticket booth and restroom/concession building, and visitor ticket booth and restroom/concession building.

The sports field and track would be surrounded by a new four-foot-high chain link fence and eight-foot-wide concrete walkway. A new scoreboard with steel and support structure and a 35-foot flagpole will be installed on the north end of the track and walkway. Four new Musco stadium lights will be installed around the track and field, two on the east side at the top of the slope and two on the west side adjacent to the existing hardtop courts. The eastern stadium lights would be 90 feet tall and would be located on either side of the stadium seating facing to the west towards the football/soccer field. The western stadium lights would be 80 feet tall, set 12 feet above grade and would be located behind the stadium seating on either end facing towards the east onto the football/soccer field. Each stadium light pole would include 11 lighting fixtures at the maximum height and two to three fixtures.

As shown in Table 3-2, *Redlands East Valley High School Sports Field Proposed Event Schedule*, the District anticipates the scheduling of approximately three home football games per year each for varsity and Freshman teams. High school football season generally extends from the end of August through the middle of November, depending on team playoff status. Varsity games would generally be scheduled on Thursday and Friday evenings between the hours of 7:00 PM and 9:30 PM. Freshman games would be scheduled immediately following the end of the school day on Thursday or Friday afternoons. The proposed project's field lights would be in operation for approximately four hours during any single evening, with lights being turned off by 10:30 PM. Football practice sessions at the proposed project would occur on a regular basis and may, when necessary, utilize the stadium's lighting system, with lights being shut off before 9:00 PM.

Track & field season takes place during the late winter and spring months. The District anticipates the scheduling of approximately three home track meets during the average school year. Track & field meets would generally be conducted on Thursday after school until 6:00 PM, and cross county competitions would be held on Saturdays, starting at approximately 7:30 AM. Track & field meets are usually held during daylight hours, and generally do not require the use of stadium lights. However, there a possibility that some meets may require use of the lighting system. Lights would be turned off prior to 10:30 PM.

Soccer take place during the late winter and spring months home games generally occur Wednesday immediately after school until 6:30 PM for boys teams and Fridays immediately afterschool until 6:30 PM for girls teams, with JV playing before Varsity for both teams. Each team (Girls JV, Girls V, Boys JV, and Boys V) have 5 home games per year, for a total of 20 homes games typically occurring with JV and Varsity games occurring consecutively. Soccer Games at the stadium may, when necessary, utilize the stadium's lighting system, with lights being shut off before 9:00 PM.

Other school uses may include band and color guard practices and competitions, classroom activities, and possibly rallies and assemblies, most of which would be conducted during daylight hours. The high school's band would use the stadium and lighting system one or two nights a week during football season for practice.

Band practice would conclude by approximately 9:00 PM. It is anticipated that daily physical education classes would not normally utilize the stadium facility. Additionally, some summer events may occur at the project site, and would be shown in the school's event schedule.

5.1.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.1-1: The Proposed Project would not substantially degrade the existing visual character or quality of public views of the Project Site and its surroundings. [Threshold AE-3]

Phase 1 of the proposed project includes installation artificial turf sport field, a 9-lane synthetic track and track and field spaces, four Musco stadium lights, public address system, a new scoreboard and flagpole, stadium fencing, parking lot restriping, construction of concrete walking path around the track, and relocation of the metal storage container on the southeastern corner of the parking lot. Phase 2 would include the installation of a 1,000-person bleacher on the visitor team side and a 2,000-person bleacher on the home team side, new visitor concessions/restroom/ticket booth building and pedestrian entry improvements, as well as emergency access improvements such as access gate, roadway, and fire hydrant. This phase also includes new chain-link fencing, trees, irrigation, and turf surrounding the stadium and basketball courts, landscape improvements and fencing around the baseball fields and the walking path to the stadium, and several new concrete pavement areas. Phase 3, the construction of the home concession/restroom buildings and entry improvements would occur. The new home concession/restroom building would include a ticket booth, concessions, custodial space, and restrooms. Additionally, new masonry and landscaping would occur between the access point near the baseball fields to the home concession building.

The proposed project would be visible from Colton Avenue, along the northern edge of the campus, where the main entrance to the school is located, and Opal Avenue, along the western edge of the school, adjacent to the project site. As such, changes in the visual character of the campus and the project site would be most evident from the perspective of Colton Avenue and Opal Avenue.

The proposed project would redevelop the project site with a new sport stadium facility that would include but is not limited to new concession/restroom/ticketing buildings, bleachers, stadium lighting and a scoreboard, which has the potential to alter the visual character or quality of the Project Site and surrounding area. The four new Musco stadium lights would be installed around the track and field, including two on the east side at the top of the slope and two on the west side adjacent to the existing hardtop courts. The eastern stadium lights would be 90 feet tall and would be located on either side of the stadium seating facing to the west towards the football/soccer field, and the western stadium lights would be 80 feet tall, set 12 feet above grade and would be located behind the stadium seating on either end facing towards the east onto the football/soccer field.

As shown in Figures 5.1-3a and 5.1-3b, *Daytime View Simulations*, the proposed project's stadium lighting would be visible from each of the three viewpoints.

- **View 1:** Viewpoint 1 was taken near the intersection of Beryl Avenue and Colton Avenue. As shown in Figure 5.1-3a*,* View 1 looks southwest from the front of the Redlands East Valley HS campus towards the project site. During the daytime, the primary view from this point would be the school parking lot, and street trees and lights located along Colton Avenue. Views of the proposed project would be limited from this location, including the proposed stadium lighting due to intervening landscaping and development.

- **View 2:** Viewpoint 2 was taken near the intersection of Opal Avenue and Colton Avenue, near the northwestern corner of the project site. As shown in Figure 5.1-3b*,* View 2 looks southeast towards the project site. The primary view from the point would be the project site, new stadium lights, the home side bleachers, home ticketing booth, concession, and restroom building, partial views of the field and visitor side bleachers, and the existing basketball courts.

- **View 3:** Viewpoint 3 was taken from the residential area located southwest from the project site. As shown in Figure 5.1-3b*,* View 3 looks northeast towards the project site, and the proposed project's stadium lighting can be seen from this location.

As the project site is already developed with a sport field and track, the redevelopment of project site would have a similar use in the same location would not result in a substantial change in the visual character of the project site and surrounding area. While the heights of the proposed stadium lights would reach up to 80 and 90 feet, they would not exceed the maximum height of 150 feet allowed in an Institutional (IN) Zoning District, as stipulated in Table 82-19B (Section 82.06.060) of the San Bernardino County Municipal Code. In addition, the stadium lights do not substantially block views of the San Bernardino Mountains looking north along Opal Avenue.

Compliance with these County policies, as described above, would ensure that implementation of the proposed project would not result in the significant degradation of the visual character and quality of the project site and surrounding area. As such, the proposed project would result in a **less-than-significant impact** with respect to visual character and quality

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Figure 5.1-3a - Daytime View Simulations

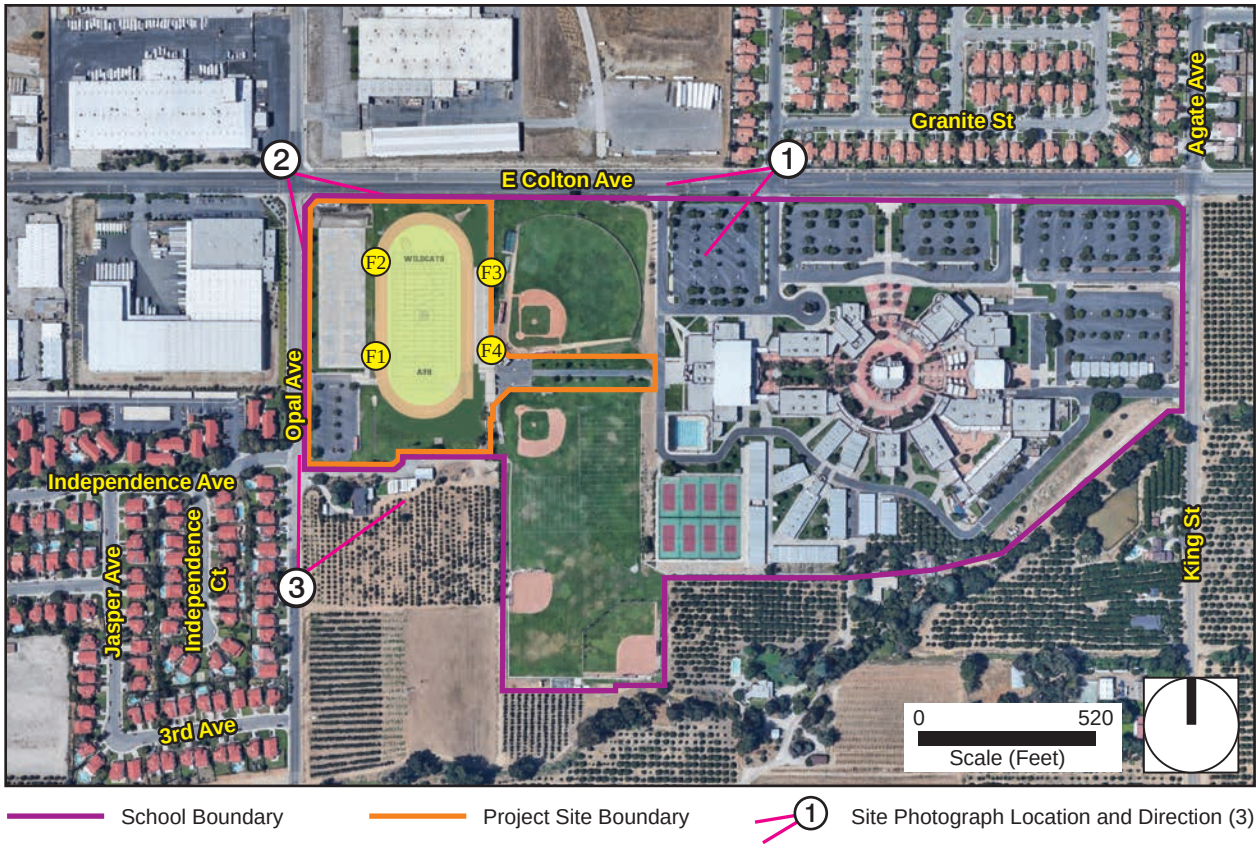

Photo 1. View of project site looking southwest.

Source; PlaceWorks, 2022

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Figure 5.1-3b - Daytime View Simulations

Photo 2. View of project site looking southeast.

Photo 3. View of project site looking northeast.

Source; PlaceWorks, 2022

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Impact 5.1-2: The proposed project would generate additional light and glare. [Threshold AE-4]

Light Trespass Impact

Although the San Bernadino County Municipal Code does not identify a maximum amount of illumination that can be generated by institutional uses, Section 83.07.050 (Light Trespass - Valley Region) establishes that outdoor lighting of commercial or industrial land uses shall be fully shielded to preclude light pollution or light trespass on an abutting residential land use zoning district; a residential parcel; or a Public right-of-way. It additionally states that the maximum allowed foot-candles of direct or indirect light from any light fixture shall not cause glare above five-tenths foot-candles when measured at the property line of a residential land use zoning district, residential parcel, or public right-of-way. Light levels shall be measured with a photoelectric photometer, following the standard spectral luminous efficiency curve adopted by the International Commission on Illumination (San Bernardino County 2021).

The proposed project would install stadium lights eastern portion of the stadium that would be 90 feet tall and would be located on either side of the stadium seating facing to the west towards the football/soccer field, and the western stadium lights would be 80 feet tall, set 12 feet above grade and would be located behind the stadium seating on either end facing towards the east onto the football/soccer field. As shown in Table 5.1-1, *Lighting Level Summary*, the proposed project would install lighting required to effectively illuminate the field area and track with an average maximum of 54.3 foot-candles (fc) for football games, 53.8 fc for soccer games, and 26.5 fc for track & field meets.

Table 5.1-2 Lighting Level Summary

Area	Average Illumination	Minimum Illumination	Maximum Illumination
ADA Ramp (visitor)	2.96	1	5
Football	54.3	45	61
Home Bleacher	2.94	1	8
Home Ramp	5.45	1.87	7.52
Soccer	53.8	45	62
Track	26.5	4	52
Visitor Bleacher	4.71	2	7

Source: Musco Lighting 2021

It is not possible to completely eliminate spillover of light and glare onto adjacent properties and roadways, but the proposed pole height allows the best control for focusing the lights to minimize spillover light. Higher mounting heights are generally more effective in controlling spill light, because a more controlled and/or narrower beam may be used, making it easier to confine the light to the design area. Lower mounting heights increase the spill light beyond the property boundaries. Lower mounting heights make bright parts of the floodlights more visible from positions outside the property boundary, which can increase glare.

As shown in Figure 5.1-4, along the perimeter of the track and field, the proposed project's lighting would reach a maximum of 3 foot-candles near the northern edge of the project site. Light levels on the northern end would continue to reduce towards the northern property line, along Colton Avenue, and would be expected to reach between 0.5 fc and 1 fc at the property line. While the proposed project's stadium lighting may exceed the County's thresholds of 0.5 fc, there are no sensitive uses at this street edge and the existing street lights along

Colton Avenue are intended to light the public right-of-way at 1.0 to 5.0 foot-candles. The proposed project would not substantially increase lighting along Colton Avenue and this does not represent a significant impact.

Additionally, Figure 5.1-4 shows zero foot-candles along the southern edge of the project site, adjacent to the residence and agricultural property, and shows that the western side of the project site over the basketball courts would have a maximum of 2 foot-candles over the basketball courts. The lighting along the project site's western boundary (along Opal) would be expected to reduce to below 0.5 fc, since the light level in this area would continue to decrease toward the project site's boundary away from the stadium lighting. The Redlands East Valley HS continues to the east, and the proposed project would not cast lighting off the property.

The proposed project's stadium lighting would only be used for events and games and would not be a nightly occurrence. The proposed project would not create a new source of substantial light or glare that would cause a significant light trespass impact. Therefore, lighting impacts related to light spill over would be ***less than significant***.

Nighttime Views

To further evaluate the potential for project lighting to affect surrounding sensitive land uses, nighttime visual simulations were prepared. Per CEQA requirements, the evaluation of potential visual impacts of a project on private vantage points (e.g., single-family or multi-family residential uses) is generally not required. Evaluation of such impacts is instead focused on potential effects on public views (e.g., from public roadways).

With the stadium lights on at the project site, the proposed stadium is visible from all three viewpoints, as shown in Figure 5.1-5a and 5.1-5b, *Nighttime View Simulations*; however, with the stadium lights off, the proposed project would be minimally visible from these viewpoints.

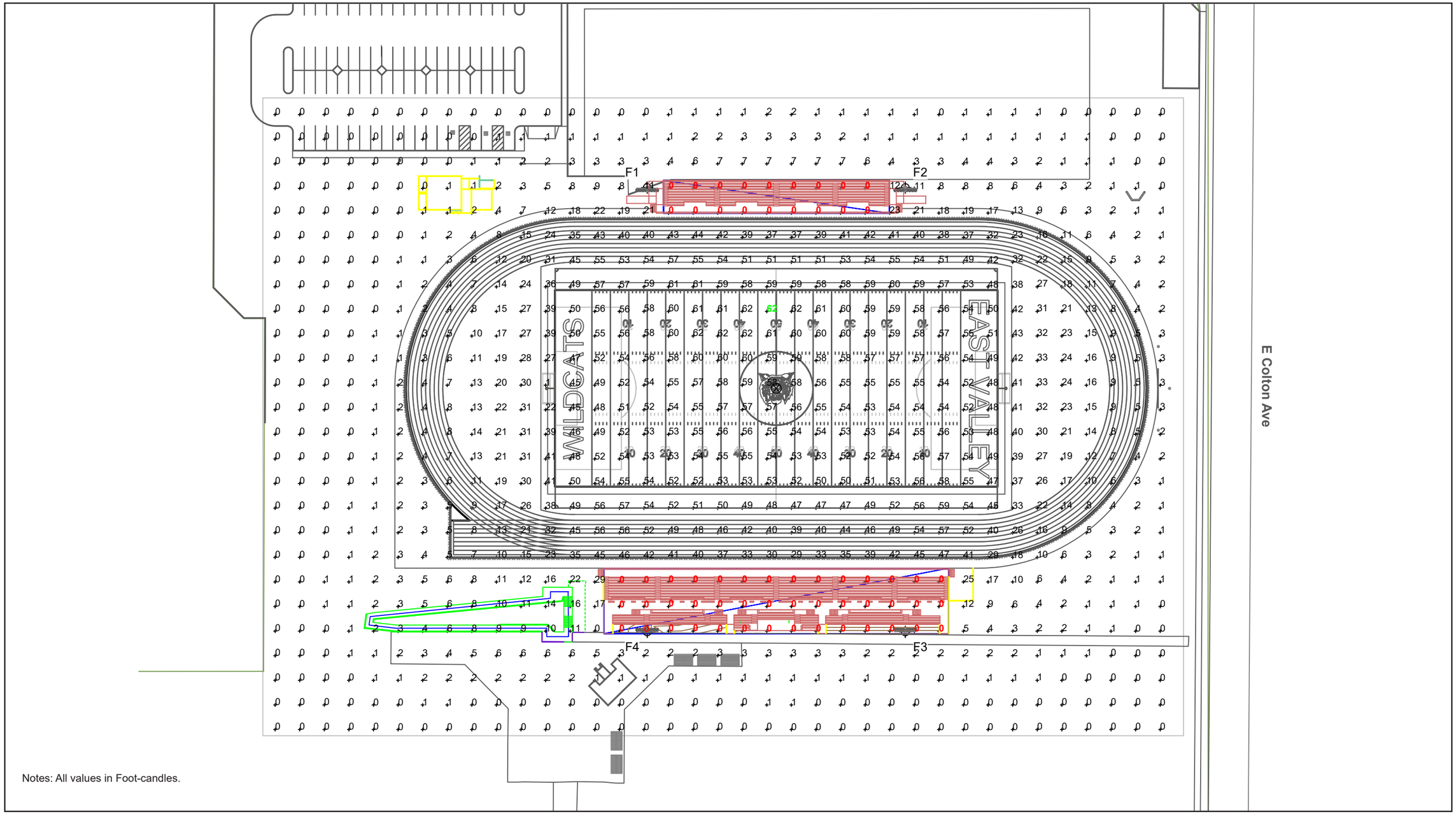
- **View 1:** Viewpoint 1 was taken near the intersection of Beryl Avenue and Colton Avenue. As shown in Figure 5.1-4, View 1 looks west from the front of the Redlands East Valley HS campus towards the project site. The primary view from the point would be the new stadium lights located near the home and visitor side bleachers.

- **View 2:** Viewpoint 2 was taken near the intersection of Opal Avenue and Colton Avenue, near the northwestern corner of the project site. As shown in Figure 5.1-4, *Nighttime View Simulations,* View 2 looks east towards the project site. The primary view from the point would be the new stadium lights, the home side bleachers, and partial views of the field and visitor side bleachers.

- View 3: Viewpoint 3 was taken from the residential area located southwest from the project site. As shown in Figure 5.1-4, Nighttime View Simulations, View 3 looks northeast towards the project site, and the primary view from the point would be the new stadium lights.

As shown in Figure 5.1-5a and 5.1-5b, the proposed stadium lights would be focused on the project site, including the proposed football field, track, and new stadium bleachers to minimize spillover into the residential and areas surrounding the project site. The proposed project would not substantially alter nighttime views nor views of the project site. Impacts would be ***less than significant***.

Figure 5.1-4 - Stadium Lighting Illumination



Notes: All values in Foot-candles.

0 80
Scale (Feet)

Source: MUSCO, 2021

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Figure 5.1-5a - Nighttime View Simulations

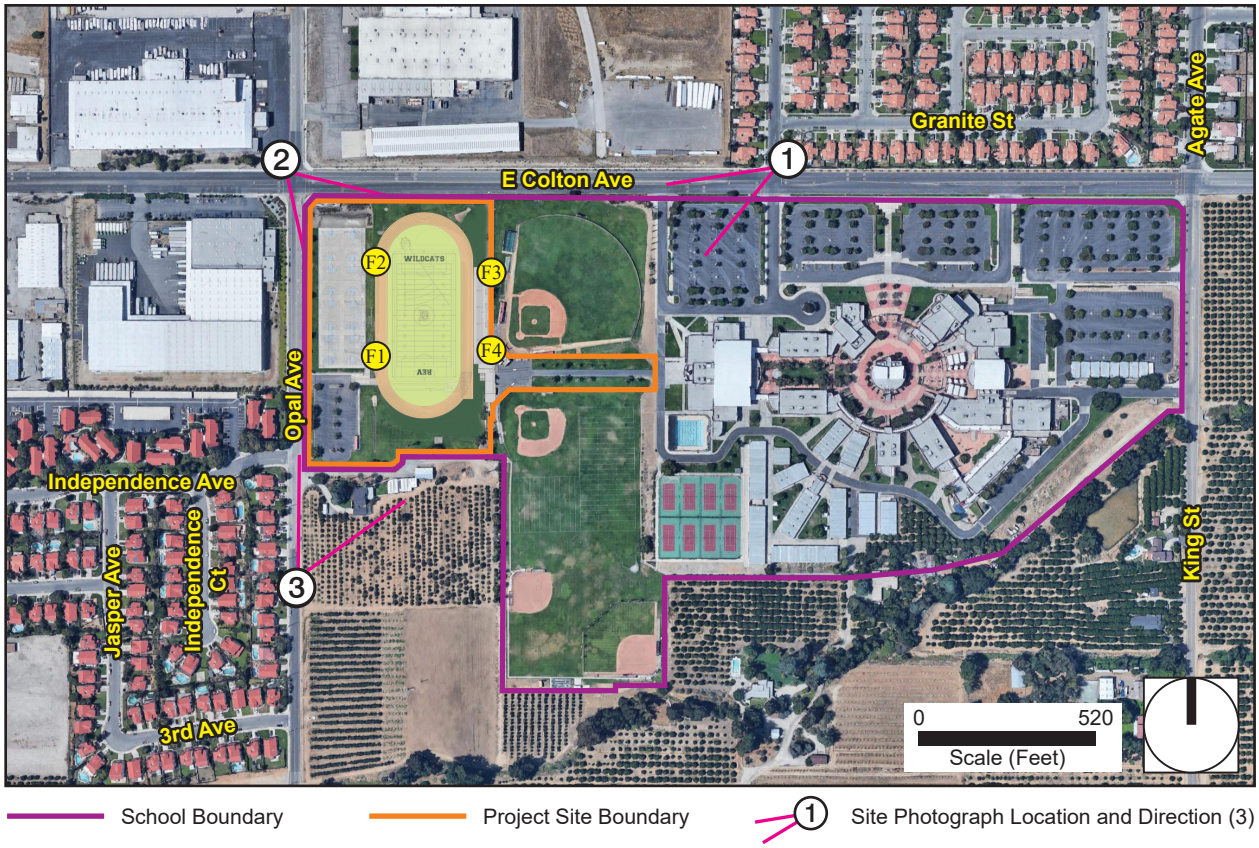

Photo 1. View of project site looking southwest.

Source; PlaceWorks, 2022

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Figure 5.1-5b - Nighttime View Simulations

Photo 2. View of project site looking southeast.

Photo 3. View of project site looking northeast.

Source; PlaceWorks, 2022

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Generation of Glare

Field lighting would include four new Musco stadium lights that would be installed around the track and field, including two on the east side at the top of the slope and two on the west side adjacent to the existing hardtop courts. The design elements for glare control include mounting height, visors and shielding, and reflective housing around the lamp. The luminaires are equipped with large hoods and shields and are specially designed to direct the light onto the football/soccer field and surrounding track. Precise position of the fixtures, accurate focusing of the light beams, and the shielding of the arc of the beams would eliminate glare impacts at surrounding residential uses and roadways. As part of the proposed project, the lighting engineer that installs the lights would ensure that the lights are properly adjusted and maintained so that glare would not impact the surrounding community. Additionally, as described above, lighting for events would be shut off before 10:30 pm; thus, the proposed project would comply with Policy LU-4.7 (Dark skies) of the San Bernardino County General Plan, which that light pollution and glare should be minimized to preserve views of the night sky. As such, the proposed project would result in a ***less than significant impact***.

5.1.4 Cumulative Impacts

The proposed project would be consistent with adopted policies, plans, and programs regarding aesthetics. Other development projects in the region, including the 800 Opal project, would be designed to minimize aesthetic impacts and would also be required to evaluate consistency with applicable plans and policies, including but not limited to the Countywide Plan. Development projects' consistency with applicable plans and policies would be separately reviewed by the applicable lead agency. If needed, the lead agency would require appropriate mitigation measures for each development project to reduce identified impacts. Therefore, the proposed project would not contribute to a cumulative impact, and cumulative impacts would be **less than significant**.

5.1.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.1-1.

Without mitigation, these impacts would be **potentially significant**:

- Impact 5.1-2 The proposed project would add new sources of nighttime lighting.

5.1.6 Mitigation Measures

Impact 5.1-2

AE-1 The Redlands Unified School District shall minimize the effects of new sources of nighttime lighting by incorporating the following measures into project design and operation:

- All lighting shall be shielded and directed downward onto the athletic fields to minimize potential light escape and/or spillover onto adjacent properties.

- The new athletic field lights shall be shut off by or before 10:30 p.m.

5.1.7 Level of Significance After Mitigation

Although mitigation measures AE-1 would reduce light and glare impacts, such impacts would be less than significant.

5.1.8 References

California Department of Transportation (Caltrans). 2021, September 13 (accessed). California State Scenic Highway System Map. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa

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5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the proposed new sport stadium at Redlands East Valley High School (proposed project) to impact air quality in a local and regional context. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (South Coast AQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. In this section, "emissions" refers to the actual quantity of pollutant, measured in pounds per day (lbs/day), and "concentrations" refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$).

Criteria air pollutant emissions modeling is included in Appendix B, *Air Quality, Greenhouse Gas Emissions, and Energy Analysis*, of this DEIR. Transportation-sector impacts are based on trip generation and vehicle miles traveled as provided by Garland Associates (see Appendix E). Cumulative impacts related to air quality are based on the regional boundaries of the South Coast Air Basin (SoCAB).

No comments were received in response to the Initial Study/Notice of Preparation (IS/NOP) in regard to air quality. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.2.1 Environmental Setting

5.2.1.1 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_X), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, nitrogen dioxide (NO_2), PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and NO_X are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants.

Each of the primary and secondary criteria air pollutants and its known health effects are described below.

- **Carbon Monoxide** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the South Coast Air Basin (SoCAB). The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (South Coast AQMD 2005; US EPA

2021a). The SoCAB is designated as being in attainment under the California AAQS and attainment (serious maintenance) under the National AAQS (CARB 2021a).

- **Volatile Organic Compounds** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (South Coast AQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O_3, South Coast AQMD has established a significance threshold. The health effects for ozone are described later in this section.

- **Nitrogen Oxides** are a byproduct of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and NO_2. The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure (South Coast AQMD 2005; US EPA 2021a). The SoCAB is designated as an attainment (maintenance) area under the National AAQS and attainment area under the California AAQS (CARB 2021a).

- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (South Coast AQMD 2005; US EPA 2021a). The SoCAB is designated as attainment under the California and National AAQS (CARB 2021a).

- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the

atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The US Environmental Protection Agency's (EPA) scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (South Coast AQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch) have human health implications because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2013). However, the EPA and the California Air Resources Board (CARB) have not adopted AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3] (South Coast AQMD 2005; US EPA 2021a). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2021a).[4]

- **Ozone**, or O_3, is a key ingredient of "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (South Coast AQMD 2005; US EPA 2021a). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2021a).

- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system,

[1] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[2] Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

[3] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

[4] CARB approved the South Coast AQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to 2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (South Coast AQMD 2005; US EPA 2021a). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[5] As a result of these violations, the Los Angeles County portion of the SoCAB is designated nonattainment under the National AAQS for lead (South Coast AQMD 2012; CARB 2021a). Because emissions of lead are found only in projects that are permitted by South Coast AQMD, lead is not a pollutant of concern for the proposed project.

Table 5.2-1, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

Table 5.2-1 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	• Cough, chest tightness • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation	Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	• Increased response to allergens • Aggravation of respiratory illness	Same as carbon monoxide sources
Particulate Matter (PM_{10} and $PM_{2.5}$)	• Hospitalizations for worsened heart diseases • Emergency room visits for asthma • Premature death	Cars and trucks (particularly diesels) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	• Aggravation of respiratory disease (e.g., asthma and emphysema) • Reduced lung function	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes

[5] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (South Coast AQMD 2012).

Table 5.2-1 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Lead (Pb)	• Behavioral and learning disabilities in children • Nervous system impairment	Contaminated soil

Source: CARB 2019; South Coast AQMD 2005.

Toxic Air Contaminants

People exposed to toxic air contaminants (TAC) at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (US EPA 2021b). By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. There are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most relevant to the proposed project being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified diesel particulate matter (DPM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. Long-term (chronic) inhalation of DPM is likely a lung cancer risk. Short-term (i.e., acute) exposure can cause irritation and inflammatory systems and may exacerbate existing allergies and asthma systems (US EPA 2002).

5.2.1.1 REGULATORY BACKGROUND

Ambient air quality standards have been adopted at the state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of TACs. The proposed project is in the SoCAB and is subject to the rules and regulations imposed by the South Coast AQMD, the California AAQS adopted by CARB, and National AAQS adopted by the EPA. Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section.

Federal and State

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment

requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

These National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 5.2-2, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants are O_3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and Pb. In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.2-2 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	

Table 5.2-2 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016.
Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, 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.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions.

- **Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards.** Pavley I is a clean-car standard that reduces greenhouse gas (GHG) emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.

- **Senate Bill (SB) 1078 and SB 107: Renewables Portfolio Standards.** A major component of California's Renewable Energy Program is the renewables portfolio standard (RPS) established under SB 1078 (Sher) and SB 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010.

- **20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards.** The 2006 Appliance Efficiency Regulations (20 CCR sections 1601–1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances.

- **24 CCR, Part 6: Building and Energy Efficiency Standards.** Energy conservation standards for new residential and nonresidential buildings adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977.

- **24 CCR, Part 11: Green Building Standards Code.** Establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

Tanner Air Toxics Act and Air Toxics Hot Spot Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and reduce exposure to them. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health" (17 CCR § 93000). A substance that is listed as a hazardous air pollutant pursuant to § 112(b) of the federal Clean Air Act (42 US Code § 7412[b]) is a TAC. Under state law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate "toxics best available control technology" to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10 § 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.** Generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.
- **13 CCR Chapter 10 § 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.** Generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.
- **13 CCR § 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate.** Regulations established to control emissions associated with diesel-powered TRUs.

Regional

Air Quality Management Planning

The South Coast AQMD is the agency responsible for improving air quality in the SoCAB and ensuring that the National and California AAQS are attained and maintained. South Coast AQMD is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

On March 3, 2017, South Coast AQMD adopted the 2016 AQMP, which serves as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 National 8-hour ozone standard by 2031
- 2012 National annual $PM_{2.5}$ standard by 2025[6]
- 2006 National 24-hour $PM_{2.5}$ standard by 2019
- 1997 National 8-hour ozone standard by 2023
- 1979 National 1-hour ozone standard by 2022

It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (South Coast AQMD 2017), which requires reducing NOX emissions in the SoCAB to

[6] The 2016 AQMP requests a reclassification from moderate to serious nonattainment for the 2012 National $PM_{2.5}$ standard.

250 tpd. This is approximately 45 percent more reduction than existing regulations for the 2023 ozone standard and 55 percent more reduction than existing regulations to meet the 2031 ozone standard.

Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations in the SoCAB. However, because the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, South Coast AQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" nonattainment would require meeting the 2012 federal standard by no later than 2021.

Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources, such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (South Coast AQMD 2017).

Lead Implementation Plan

In 2008, the EPA designated the Los Angeles County portion of the SoCAB as a nonattainment area under the federal lead (Pb) classification because of the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in the City of Vernon and the City of Industry that exceeded the new standard in the 2007 to 2009 period. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remains in attainment of the new 2008 lead standard. On May 24, 2012, CARB approved the State Implementation Plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to the EPA for approval.

South Coast AQMD Rules and Regulations

All projects are subject to South Coast AQMD rules and regulations in effect at the time of activity.

- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the US Bureau of Mines.

- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403, Fugitive Dust.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust and requires best available control measures to be applied to earth-moving and grading activities.

- **Rule 445, Wood Burning Devices.** In general, the rule prohibits new developments from the installation of wood-burning devices. This rule is intended to reduce the emission of particulate matter from wood-burning devices and applies to manufacturers and sellers of wood-burning devices, commercial sellers of firewood, and property owners and tenants that operate a wood-burning device.

- **Rule 1113, Architectural Coatings.** This rule serves to limit the VOCs content of architectural coatings used on projects in the South Coast AQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the South Coast AQMD must comply with the current VOC standards set in this rule.

- **Rule 1403, Asbestos Emissions from Demolition/Renovation Activities.** The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.

5.2.1.2 EXISTING CONDITIONS

The project site is in the SoCAB, which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills; it is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (South Coast AQMD 2005).

Meteorology

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The lowest average temperature is reported at 37.7 °F in January, and the highest average temperature is 93.2°F in August (USA.Com 2021).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from October through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall historically averages 22.5 inches per year in the project area (USA.Com 2021).

Humidity

Although the SoCAB has a semiarid climate, the air near the Earth's surface is typically moist because of a shallow marine layer. This "ocean effect" is dominant except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds. Periods of heavy fog are frequent, given the project site's location along the coast. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (South Coast AQMD 1993).

Wind

Wind patterns across the southern coastal region are characterized by westerly or southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB combined with other meteorological conditions can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east inhibit the eastward transport and diffusion of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (South Coast AQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two distinct types of temperature inversions control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (South Coast AQMD 2005).

SoCAB Nonattainment Areas

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the SIP. Areas are classified as attainment or nonattainment areas for particular

pollutants depending on whether they meet the AAQS. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- ***Unclassified.*** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- ***Attainment.*** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- ***Nonattainment.*** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- ***Nonattainment/Transitional.*** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 5.2-3, *Attainment Status of Criteria Air Pollutants in the South Coast Air Basin*.

Table 5.2-3 Attainment Status of Criteria Air Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)1
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2021a.
[1] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

Multiple Air Toxics Exposure Study V

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on existing ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In April 2021, South Coast AQMD released the latest update to the MATES study, MATES V. The first MATES analysis, MATES I, began in 1986 but was limited because of the technology available at the time. Conducted in 1998, MATES II was the first MATES iteration to include a comprehensive monitoring program, an air toxics emissions inventory, and a modeling component. MATES III was conducted in 2004 to 2006, with MATES IV following in 2012 to 2013.

MATES V uses measurements taken during 2018 and 2019, with a comprehensive modeling analysis and emissions inventory based on 2018 data. The previous MATES studies quantified the cancer risks based on the inhalation pathway only. MATES V includes information on the chronic noncancer risks from inhalation and non-inhalation pathways for the first time. Cancer risks and chronic noncancer risks from MATES II through IV measurements have been re-examined using current Office of Environmental Health Hazards Assessment and CalEPA risk assessment methodologies and modern statistical methods to examine the trends over time.

The MATES V study showed that cancer risk in the SoCAB decreased to 454 in a million from 997 in a million in the MATES IV study. Overall, air toxics cancer risk in the SoCAB decreased by 54 percent since 2012 when MATES IV was conducted. MATES V showed the highest risk locations near the Los Angeles International Airport and the Ports of Long Beach and Los Angeles. DPM continues to be the major contributor to air toxics cancer risk (approximately 72 percent of the total cancer risk). Goods movement and transportation corridors have the highest cancer risk. Transportation sources account for 88 percent of carcinogenic air toxics emissions, and the remainder is from stationary sources, which include large industrial operations such as refineries and power plants as well as smaller businesses such as gas stations and chrome-plating facilities. (South Coast AQMD 2021).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the South Coast AQMD. The proposed project is in Source Receptor Area (SRA) 23: Metropolitan Riverside.[7] The air quality monitoring station closest to the proposed project is the Riverside-Rubidoux Monitoring Station, which is one of 31 monitoring stations South Coast AQMD operates and maintains within the SoCAB.[8] Data from this station includes O_3, NO_2, PM_{10}, and $PM_{2.5}$ and is summarized in Table 5.2-4, *Ambient Air Quality Monitoring Summary*. The data show that the area regularly exceeds the state and federal one-hour and eight-hour O_3 standards within the last five recorded years. Additionally, the area has regularly exceeded the state PM_{10} standards and has exceeded the federal $PM_{2.5}$ standard.

Table 5.2-4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels[1]				
	2016	2017	2018	2019	2020
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	1	2	22	24	46
Federal 8-hour ≥ 0.070 ppm (days exceed threshold)	69	81	53	59	82
Max. 1-Hour Conc. (ppm)	0.142	0.145	0.123	0.123	0.143
Max. 8-Hour Conc. (ppm)	0.104	0.118	0.101	0.096	0.115
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.073	0.063	0.0554	0.056	0.062

[7] Per South Coast AQMD Rule 701, an SRA is defined as: "A source area is that area in which contaminants are discharged and a receptor area is that area in which the contaminants accumulate and are measured. Any of the areas can be a source area, a receptor area, or both a source and receptor area." There are 37 SRAs in the South Coast AQMD's jurisdiction.

[8] Locations of the SRAs and monitoring stations are shown here: http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf.

Table 5.2-4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels[1]				
	2016	2017	2018	2019	2020
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	60	98	127	110	115
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	84	92	126	182.4	142.1
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	5	7	3	5	12
Max. 24-Hour Conc. (µg/m^3)	51.5	50.3	66.3	55.7	59.9

Source: CARB 2021b.
Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = Data not available
[1] Data obtained from the Riverside Rubidoux Monitoring Station[5]. Data includes exceptional events (e.g., wildfires).

Existing Emissions

The project site is on the west side of the Redlands East Valley HS campus at 31000 East Colton Avenue in the unincorporated area of San Bernardino County. The project site encompasses sport fields, including football field and track and field; restrooms; hardcourts, parking lot, and paved walkways; and drainage way, utility infrastructure, and grassy areas. The project site is approximately 6.95 acres and is generally flat, with a slope that runs along the eastern side of the project site. The football field is natural grass and surrounded by a clay track. There are eight hardtop courts to the west of the track and field, along Opal Avenue. The existing continuation high school operations, include the use of the project site, currently generate criteria air pollutant emissions from area sources (e.g., use of landscaping equipment, maintenance activities such as architectural coating), energy use (i.e., natural gas used for heating), and mobile sources (i.e., student and staff trips to the campus).

Sensitive Receptors

Some land uses are considered more sensitive to air pollution (i.e., TACs) than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

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 any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent because the majority of workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population. The nearest offsite sensitive receptors are the single-family residences surrounding the project site to the northeast, a single-family residence to the south of the project site, and

single-family and multiple-family residential to the west of project site. Sensitive receptors also include the students and staff on campus.

5.2.2 Thresholds of Significance

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

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 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.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

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

5.2.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

South Coast AQMD has established thresholds of significance for air quality for construction activities and project operation in the SoCAB, as shown in Table 5.2-5, *South Coast AQMD Significance Thresholds*. The table lists thresholds that are applicable for all projects uniformly, regardless of size or scope. There is growing evidence that although ultrafine particulate matter contributes a very small portion of the overall atmospheric mass concentration, it represents a greater proportion of the health risk from PM. However, the EPA and CARB have not adopted AAQS to regulate ultrafine particulate matter; therefore, South Coast AQMD has not developed thresholds for it.

Table 5.2-5 South Coast AQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROG)	75 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day

Source: South Coast AQMD 2019.

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health effects. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Increases cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)

- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)
- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Contributes to lower birth weight in newborns ($PM_{2.5}$) (South Coast AQMD 2015b)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists, in a landmark children's health study, found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (South Coast AQMD 2015b).

South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, South Coast AQMD prepares an AQMP that details regional programs to attain the AAQS. Mass emissions shown in Table 5.2-5 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. The thresholds are based on the trigger levels for the federal New Source Review Program, which was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed previously. Projects that do not exceed the South Coast AQMD regional significance thresholds in Table 5.3-5 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 5.2-5, emissions would cumulatively contribute to the nonattainment status of the air basin and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 5.2-5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment because mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited previously.

South Coast AQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. Ozone concentrations are dependent on a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting

ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the SoCAB exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standards are met in the SoCAB.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles and introduction of cleaner fuels, as well as implementation of control technology on industrial facilities, CO concentrations in the SoCAB and the state have steadily declined.

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for attainment by South Coast AQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[9] As identified in South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in years before redesignation were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—to generate a significant CO impact (BAAQMD 2017).[10]

Localized Significance Thresholds

South Coast AQMD identifies localized significance thresholds (LST), shown in Table 5.2-6, *South Coast AQMD Localized Significance Thresholds*. Emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site could expose sensitive receptors to substantial concentrations of criteria air pollutants. Off-site mobile-source emissions are not included in the LST analysis. A project would generate a significant impact if it generates emissions that, when added to the local background concentrations, violate the AAQS.

[9] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

[10] The CO hotspot analysis refers to the modeling conducted by the Bay Area Air Quality Management District for its CEQA Guidelines because it is based on newer data and considers the improvement in mobile-source CO emissions. Although meteorological conditions in the Bay Area differ from those in the Southern California region, the modeling conducted by BAAQMD demonstrates that the net increase in peak hour traffic volumes at an intersection in a single hour would need to be substantial. This finding is consistent with the CO hotspot analysis South Coast AQMD prepared as part of its 2003 AQMP to provide support in seeking CO attainment for the SoCAB. Based on the analysis prepared by South Coast AQMD, no CO hotspots were predicted for the SoCAB. As noted in the preceding footnote, the analysis included some of Los Angeles' busiest intersections, with daily traffic volumes of 100,000 or more peak hour vehicle trips operating at LOS E and F.

Table 5.2-6 South Coast AQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3
24-Hour $PM_{2.5}$ Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3
Annual Average PM_{10} Standard (South Coast AQMD)[1]	1.0 µg/m^3

Source: South Coast AQMD 2019.
ppm – parts per million; µg/m^3 – micrograms per cubic meter
[1] Threshold is based on South Coast AQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, South Coast AQMD developed screening-level LSTs to back-calculate the mass amount (pounds per day) of emissions generated on-site that would trigger the levels shown in Table 5.2-6 for projects under five acres. These "screening-level" LST tables are the LSTs for all projects of five acres and less and are based on emissions over an 8-hour period; however, they can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required.

The screening-level LSTs in SRA 35 are shown in Table 5.2-7, *South Coast AQMD Screening-Level Localized Significance Thresholds*. For construction activities, LSTs are based on the acreage disturbed per day based on equipment use (South Coast AQMD 2011) up to the project site acreage. The different types of construction activities would require different equipment mixes, resulting in multiple LSTs. For operation, the screening-level LSTs are based on project site size up to five acres being disturbed per day per South Coast AQMD methodology (South Coast AQMD 2008b).

Table 5.2-7 South Coast AQMD Screening-Level Localized Significance Thresholds

	Threshold (lbs/day)			
Acreage Disturbed	Nitrogen Oxides (NO_X)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
≤1.00 Acre Disturbed Per Day	118	775	4.00	4.00
1.50 Acres Disturbed Per Day	144	974	5.50	4.50
2.50 Acres Disturbed Per Day	187	1,324	8.16	5.67

Source: South Coast AQMD 2008, 2011.
The screening-level LSTs are based on receptors with exposure durations less than 24-hours within 82 feet (25 meters) for NO_x, CO, PM_{10}, and $PM_{2.5}$.

Health Risk

Whenever a project would require use of chemical compounds that have been identified in South Coast AQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the South Coast AQMD. Table 5.2-8, *South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk

thresholds for operation of a project. This environmental evaluation identifies the significant effects of the proposed project on the environment (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 [Case No. S213478]). However, the environmental document must analyze the impacts of environmental hazards on future users when a proposed project exacerbates an existing environmental hazard or condition. Residential, school, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

Table 5.2-8 South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Cancer Burden (in areas ≥ 1 in 1 million)	> 0.5 excess cancer cases
Hazard Index (project increment)	≥ 1.0

Source: South Coast AQMD 2019.

5.2.3 Environmental Impacts

5.2.3.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project. South Coast AQMD's *CEQA Air Quality Handbook* (Handbook) and updates on its website are intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. The Handbook provides standards, methodologies, and procedures for conducting air quality analyses in environmental impact reports (EIRs), and they were used in this analysis.

Air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), version 2020.4.0 (CAPCOA 2021). CalEEMod compiles an emissions inventory of construction (fugitive dust, off-gas emissions, on-road emissions, and off-road emissions), area sources, indirect emissions from energy use, mobile sources, indirect emissions from waste disposal (annual only), and indirect emissions from water/wastewater (annual only). Criteria air pollutant emissions modeling is included in Appendix B of this DEIR. The calculated emissions of the proposed project are compared to thresholds of significance for individual projects using the South Coast AQMD's Handbook. Following is a summary of the "worst-case" assumptions used for the proposed project analysis.

Construction Phase

Construction information was provided by the applicant team for each of the proposed project's three phases. The worst-case construction phase (as shown in Table 5.2-9, construction phases include demolition, site preparation, grading, utility trenching, building construction) was modeled to provide a conservative analysis of the proposed project. Modeling was conducted for each of the worst-case construction phase with year 2022 emission rates with the worst-case equipment to identify peak daily construction emissions. The proposed project would be constructed in three phases as described in Chapter 3, *Project Description*, which would start in

from March 2022 to November 2026. Table 5.2-9, *Worst-Case Construction Phasing and Equipment*, summarizes the construction phasing, time period, and equipment mix that was modeled. Construction air pollutant emissions are based on the preliminary information provided or verified by the District for near-term construction.

Table 5.2-9 Worst-Case Construction Phasing and Equipment

Construction Phase[1]	Description	Approximate Duration	Equipment/Haul
Demolition (Phase 1)	Asphalt Demolition	March 2022 to March 2022 2 weeks	1 – Cat Milling Machine (PM310) 2 – Terex Jaw Plant Crusher (CRJ3042) 1 – Liugong Wheel Loader (856) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – John Deere Excavator with Hammer (350G) 1 – John Deere Dozer (700L)
	Asphalt Demolition Haul	March 2022 to April 2022 2 weeks	1 – John Deere Excavator with Hammer (350G) 1 – Terex Jaw Plant Crusher (CRJ3042) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – John Deere Dozer (700L) 1 – Takeuchi Skid Steer (TL12)
Site Preparation (Phase 1)	Site Preparation	April 2022 1 week	1 – Liugong Wheel Loader (856) 1 – Komatsu Dozer (D65EX-18) 2 – John Deere Dozer (700L) 1 – Takeuchi Skid Steer (TL12) 1 – Cat Vibratory Soil Compactor (CP11GC)
Grading (Phase 3)	Rough Grading	April 2022 1 week	1 – Komatsu Dozer (D65EX-18) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – John Deere Dozer (700L) 1 – Takeuchi Skid Steer (TL12)
	Fine Grading	May 2022 to June 2022 1 week	1 – John Deere Dozer (700L) 1 – John Deere Grader (620G/GP) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – Takeuchi Skid Steer (TL12)
Utility Trenching (Phase 1, 2 and 3)	Utility Trenching	May 2022 2 weeks	1 – John Deere Excavator with Hammer (350G) 1 – Liugong Wheel Loader (856) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – Takeuchi Skid Steer (TL12)
Building Construction (Phase 3)	Building Construction and Finishing/Landscaping	June 2022 to June 2022 1 week	1 – John Deere Dozer (700L) 1 – Komatsu Dozer (D65EX-18) 2 – Takeuchi Skid Steer (TL12) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – John Deere Excavator with Hammer (350G) 1 – Cat Asphalt Paver (AP1055F) 1 – Cat Double Drum Asphalt Roller (CB36B)
	Building Construction	June 2022 to October 2022 4 months	1 – John Deere Dozer (700L) 1 – Komatsu Dozer (D65EX-18) 1 – Takeuchi Skid Steer (TL12) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – John Deere Excavator with Hammer (350G)

Table 5.2-9 Worst-Case Construction Phasing and Equipment

Construction Phase[1]	Description	Approximate Duration	Equipment/Haul
	Building Construction and Asphalt Paving	June 2022 1 week	1 – John Deere Dozer (700L) 1 – Komatsu Dozer (D65EX-18) 1 – Takeuchi Skid Steer (TL12) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – John Deere Excavator with Hammer (350G) 1 – Cat Asphalt Paver (AP1055F) 1 – Cat Double Drum Asphalt Roller (CB36B)
	Building Construction and Architectural Coating	October 2022 to November 2022 1 month	1 – John Deere Dozer (700L) 1 – Komatsu Dozer (D65EX-18) 1 – Takeuchi Skid Steer (TL12) 1 – Cat Vibratory Soil Compactor (CP11GC) 1 – John Deere Excavator with Hammer (350G) 1 – Air Compressor

Notes:
[1] Proposed project phase used for "worst-case" construction is documented in parentheses.
[2] Landscaping assumes 4.06 acres of the 6.95-acre project site.

5.2.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.2-1: The proposed project would not conflict with the South Coast AQMD AQMP. [Threshold AQ-1]

A consistency determination with the AQMP plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental effects of the proposed project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the AQMP.

The regional emissions inventory for the SoCAB is compiled by South Coast AQMD and SCAG. Regional population, housing, and employment projections developed by SCAG are based in part on cities' general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic trends are incorporated into SCAG's regional transportation plan/sustainable communities strategy to determine priority transportation projects and vehicle miles traveled in the SCAG region.

Changes in population, housing, or employment growth projections have the potential to affect SCAG's demographic projections and therefore the assumptions in South Coast AQMD's AQMP. Since the proposed project would not generate new student enrollment, the proposed project would not substantially affect housing, employment, or population projections within the region. Finally, as discussed under Impact 5.2-3 below, the long-term emissions generated by the proposed project would not produce criteria air pollutants that exceed the South Coast AQMD significance thresholds for proposed project operations. South Coast AQMD's

significance thresholds identify whether a project has the potential to cumulatively contribute to the SoCAB's nonattainment designations. Because the proposed project would not exceed the South Coast AQMD's regional significance thresholds (see Impact 5.2-2 and Impact 5.2-3) and growth is consistent with regional growth projections, the proposed project would not interfere with South Coast AQMD's ability to achieve the long-term air quality goals identified in the AQMP. Therefore, the proposed project would be consistent with the AQMP, and impacts would be **less than significant**.

Impact 5.2-2: Construction activities associated with the proposed project would not generate short-term emissions in exceedance of the South Coast AQMD's regional threshold criteria. [Thresholds AQ-2 and AQ-3]

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Construction of the proposed project would generate criteria air pollutants associated with construction equipment exhaust and fugitive dust from demolition and debris haul, grading and soil haul, utilities trenching, building construction, architectural coating, pavement of asphalt and nonasphalt surfaces, and finishing and landscaping of the project site. Air pollutant emissions from construction activities on-site would vary daily as construction activity levels change. An estimate of maximum daily construction emissions for the proposed project is provided in Table 5.2-10, *Maximum Daily Regional Construction Emissions*.

Table 5.2-10 Maximum Daily Regional Construction Emissions

Construction Phase	Pollutants (lb/day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Worst-Case Phase – Year 2022						
Asphalt Demolition	3	21	19	<1	1	1
Asphalt Demolition Debris Haul	2	17	16	< 1	4	1
Site Preparation	2	24	17	<1	10	5
Rough Grading	2	16	12	<1	4	2
Utility Trenching	1	8	8	<1	<1	<1
Fine Grading	1	14	11	<1	4	2
Building Construction and Finishing/Landscaping	3	27	24	<1	2	1
Building Construction	2	19	16	<1	2	1
Building Construction and Asphalt Paving	3	24	20	<1	2	1
Building Construction and Architectural Coating	5	17	17	<1	2	1
Maximum Daily Construction Emissions						
Worst-Case Phase – Year 2022	5	27	24	<1	10	5
South Coast AQMD Regional Construction Threshold	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2020.4.0

[1] Based on the preliminary information provided by the District. Where specific information regarding proposed project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast AQMD of construction equipment.

[2] Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.

The SoCAB is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS, nonattainment for PM_{10} under the California AAQS,[11] and nonattainment for lead (Los Angeles County only) under the National AAQS. According to South Coast AQMD methodology, any project that does not exceed or can be mitigated to less than the daily threshold values would not add significantly to a cumulative impact (South Coast AQMD 1993). As shown in these tables, the maximum daily emissions for VOC, NOx, CO, SO_2, PM_{10}, and $PM_{2.5}$ from construction-related activities would be less than their respective South Coast AQMD regional significance threshold values. Therefore, short-term air quality impacts from proposed-project-related construction activities would be **less than significant.**

Impact 5.2-3: Long-term operation of the proposed project would not generate emissions in exceedance of the South Coast AQMD's regional threshold criteria. [Thresholds AQ-2 and AQ-3]

Following full buildout of the proposed project, operation would not generate a net increase in criteria air pollutant emissions from area sources (e.g., landscaping equipment, architectural coating), and energy use, or transportation sources. As documented in Section 5.8, T*ransportation*, the proposed project would not result in an increase in VMT. Existing vehicle trips to transport students and staff to off campus games will be relocated to the project stie, and therefore there will no net increase in events and games occurring or vehicle trips at the time of buildout. Projects that do not exceed the South Coast AQMD regional significance thresholds would not result in an incremental increase in health impacts in the SoCAB from project-related increases in criteria air pollutants. Therefore, impacts to the regional air quality associated with operation of the proposed project would be **less than significant**.

Impact 5.2-4: Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-3]

This impact analysis describes changes in localized impacts from short-term construction activities. The proposed project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevated levels. Unlike the mass of construction and operation emissions in the regional emissions analysis shown in Table 5.2-10, which are described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

Construction-Phase LSTs

Screening-level LSTs (pounds per day) are the amount of project-related mass emissions at which localized concentrations (ppm or $\mu g/m^3$) could exceed the AAQS for criteria air pollutants for which the SoCAB is designated nonattainment. The screening-level LSTs are based on the project site size and distance to the nearest sensitive receptor and are based on the California AAQS, which are the most stringent AAQS, established to protect sensitive receptors most susceptible to respiratory distress.

[11] Portions of the SoCAB along SR-60 in Los Angeles, Riverside, and San Bernardino Counties are proposed as nonattainment for NO_2 under the California AAQS.

Table 5.2-11, *Construction Emissions Compared to the Screening-Level LSTs,* shows the maximum daily construction emissions (pounds per day) generated during on-site construction activities, compared with the South Coast AQMD's screening-level LSTs for nonsensitive receptors within 82 feet (25 meters) for NO_x and CO, and sensitive receptors within 82 feet (25 meters) of the project area for PM_{10} and $PM_{2.5}$.

Table 5.2-11 Construction Emissions Compared to the Screening-Level LSTs

Construction Activity	Pollutants(lbs/day)[1]			
	NO_X	**CO**	**PM_{10}[2]**	**$PM_{2.5}$[2]**
South Coast AQMD ≤1.00 Acre LST	118	775	4.00	4.00
Asphalt Demolition	21	19	0.94	0.89
Asphalt Demolition Debris Haul	14	15	2.96	0.98
Utilities Trenching	8	8	0.28	0.26
Exceeds LST?	No	No	No	No
South Coast AQMD 1.50 Acre LST	144	974	5.50	4.50
Rough Grading	15	11	3.56	2.14
Fine Grading	14	11	3.66	2.05
Building Construction and Finishing/Landscaping	25	20	1.12	1.03
Building Construction (6/13/2022-6/14/2022)	17	13	0.83	0.76
Building Construction and Asphalt Paving	22	16	1.00	0.92
Building Construction (6/20/2022-10/4/2022)	14	12	0.61	0.56
Building Construction and Architectural Coating	15	14	0.69	0.64
Exceeds LST?	No	No	No	No
South Coast AQMD 2.50 Acre LST	187	1,324	**8.16**	5.67
Site Preparation	24	16	**9.35**	5.37
Exceeds LST?	No	No	**Yes**	No

Sources: CalEEMod Version 2020.4.0, and South Coast AQMD 2008 and 2011.
Notes: In accordance with South Coast AQMD methodology, only onsite stationary sources and mobile equipment occurring on the project area are included in the analysis. LSTs are based on non-sensitive receptors within 82 feet (25 meters) for NO_x, CO, PM_{10}, and $PM_{2.5}$ in Source Receptor Area (SRA) 35.
[1] Based on information provided or verified by the District. Where specific information regarding project-related construction activities or processes was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by the South Coast AQMD.
[2] Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.

As shown in the table, the maximum daily NO_x, CO, PM_{10}, and $PM_{2.5}$ construction emissions from on-site construction-related activities would be less than their respective South Coast AQMD screening-level LSTs, except for PM_{10} during site preparation phase. Consequently, construction activities would have the potential to expose sensitive receptors to substantial concentrations of criteria air pollutant PM_{10}. Therefore, localized air quality impacts from construction activities would be **potentially significant**.

Construction Health Risk

South Coast AQMD currently does not require health risk assessments for short-term emissions from construction equipment. Emissions from construction equipment primarily consist of DPM. In March 2015 the Office of Environmental Health Hazards Assessment (OEHHA) adopted an updated guidance document

for the preparation of health risk assessments. OEHHA developed a cancer risk factor and noncancer chronic reference exposure level for DPM, but they are based on continuous exposure over a 30-year time frame. No short-term acute exposure levels have been developed for DPM. The proposed project would be constructed in stages over approximately five years, which would limit the exposure to receptors. However, construction activities would exceed the screening-level LST significance thresholds, and project-related construction health impacts would be potentially significant.

Impact 5.2-5: Operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-3]

This impact analysis describes changes in localized impacts from long-term operational activities. The proposed project could expose sensitive receptors to elevated pollutant concentrations during operation if it would cause or contribute significantly to elevated levels. The project site is currently developed with sport facilities and related improvements for the Redlands East Valley HS and is used for academic and school-related games and events. The project site would be consistent with the current use of the project site.

Operational Phase LSTs

Operation of the proposed project would not generate substantial quantities of emissions from on-site, stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions require a permit from South Coast AQMD, such as chemical processing or warehousing operations where substantial truck idling could occur on-site. Emissions from uses such as chemistry labs would be minimal and would not be greater than emissions from current uses on-site. Overall, the proposed project does not fall within these categories of uses. Though operation of the proposed project could result in the use of standard on-site mechanical equipment such as heating, ventilation, and air conditioning units in addition to occasional use of landscaping equipment for project site maintenance, air pollutant emissions generated from these activities compared to the existing land use would be nominal. Therefore, net localized air quality impacts from proposed project-related operations would not exceed the South Coast AQMD's screening-level thresholds for on-site operational emissions and would be **less than significant**.

Carbon Monoxide Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. The SoCAB has been designated in attainment of both the National and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—to generate a significant CO impact (BAAQMD 2017). As described in the proposed project's Transportation Impact Analysis (Appendix E), the proposed project would generate 1,800 daily trips during maximum capacity events and 120 daily trips during

non-capacity events at the stadium. However, events and games that have the potential to reach maximum capacity will only occur approximately five times out of the year, which is substantially below the incremental increase in peak-hour vehicle trips needed to generate a significant CO impact. Implementation of the proposed project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project site. Impacts would be **less than significant**.

Impact 5.2-6: The proposed project would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. [Threshold AQ-4]

The threshold for odor is if a project creates an odor nuisance pursuant to South Coast AQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The type of facilities that are considered to have objectionable odors include wastewater treatment plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The proposed project does not include any of these uses.

Construction activities could also generate odors from construction equipment, such as diesel exhaust, and from VOCs from architectural coatings and paving activities. However, these odors would be temporary and confined to the immediate vicinity of the construction equipment. They are not expected to affect a substantial number of people. Therefore, impacts related to objectionable operational and construction-related odors would be **less than significant**.

5.2.4 Cumulative Impacts

In accordance with South Coast AQMD's methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Consistent with the methodology, projects that do not exceed the regional significance thresholds or localized significance thresholds would not result in significant cumulative impacts. In addition, projects that do not exceed the cancer risk or chronic hazard thresholds based on the latest guidance from OEHHA (2015) would not result in significant cumulative impacts. Cumulative projects in the local area include new development and general growth in the project area. The greatest source of emissions in the SoCAB is mobile sources. Due to the extent of the area potentially impacted by cumulative emissions (i.e., the SoCAB), South Coast AQMD considers a project cumulatively significant when project-related emissions exceed the South Coast AQMD regional emissions thresholds shown in Table 5.2-5 or risk thresholds in Table 5.2-8 (South Coast AQMD 1993).

Construction

The SoCAB is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS, nonattainment for PM_{10} under the California AAQS,[12] and nonattainment for lead (Los Angeles County only) under the National AAQS. Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily impacted during construction activities. As shown in Table 5.2-10, the proposed project's contribution to cumulative air quality impacts is not significant on a regional basis.

There is one known planned and approved project near the project site, 800 Opal, LLC Manufacturing/Warehouse Project, that is directly across Colton Avenue from the project site. Concurrent development of the adjacent 800 Opal site would not result in a cumulatively considerable increase in localized criteria air pollutant emissions during construction because grading for the other proximate project would have ceased prior to grading activities on the project site.

Therefore, the construction-related air pollutant emissions associated with the proposed project would **not be cumulatively considerable.**

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by South Coast AQMD to be a substantial source of air pollution and does not make a cumulatively considerable contribution to a cumulative air quality impact. Operation of the proposed project would not result in emissions in excess of the South Coast AQMD regional emissions thresholds and would result in a less than significant impact. Therefore, the air pollutant emissions associated with the proposed project would **not be cumulatively considerable.**

5.2.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.2-1, 5.2-2, 5.2-3, 5.2-5, and 5.2-6.

Without mitigation, these impacts would be **potentially significant**:

- Impact 5.2-4 Construction activities associated with the proposed project could result in cumulatively considerable net increase in PM10 that would exceed localized significance thresholds.

5.2.6 Mitigation Measures

Impact 5.2-4

AQ-1 Construction bids for the project site shall specify use of equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 (Interim) emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for site

[12] Portions of the SoCAB along SR-60 in Los Angeles, Riverside, and San Bernardino counties are proposed nonattainment for NO_2 under the California AAQS.

preparation activity. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 emissions standards for a similarly sized engine, as defined by the California Air Resources Board's regulations. Prior to construction, the project engineer shall ensure that all plans clearly show the requirement for EPA Tier 4 emissions standards for construction equipment over 50 horsepower for the specific activities stated above. During construction, the construction contractor shall maintain a list of all operating equipment associated with building demolition in use on the site for verification by the District. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations.

AQ-2 Construction bids for the project site shall specify that the construction contractor shall prepare a dust control plan for site preparation that—in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District (AQMD) Rule 403—includes the following measures to further reduce PM_{10} and $PM_{2.5}$ emissions:

- Following all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering.
- During all construction activities, the construction contractor shall sweep streets with South Coast AQMD Rule 1186–compliant, PM_{10}-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling.
- During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day.
- During all construction activities, the construction contractor shall limit on-site vehicle speeds on unpaved roads to no more than 15 miles per hour.
- During all ground-disturbing activities, the construction contractor shall apply nontoxic soil stabilizers to minimize fugitive dust.

Construction contractors shall be responsible for ensuring that these requirements are met. Prior to construction activities, the construction contractor shall ensure that all construction plans submitted to the District clearly show the watering and soil stabilizer requirement to control fugitive dust. During construction activities, the District shall verify that these measures have been implemented during normal construction site inspections.

5.2.7 Level of Significance After Mitigation

Impact 5.2-4

The amount of disturbed acreage per day during site preparation would cause an exceedance in the South Coast AQMD screening level LSTs for PM_{10}. Mitigation Measure AQ-1 would require use of site preparation equipment that meets the EPA's Tier 4 (Interim) emissions standards, that is, newer, cleaner construction

equipment. Furthermore, Mitigation Measure AQ-2 would limit construction-related emissions by requiring the construction contractor(s) to water exposed ground surfaces and disturbed areas three times a day and apply nontoxic soil stabilizers during ground-disturbing activities. As shown in Table 5.2-12, *Construction Emissions Compared to the Screening-Level LSTs with Mitigation Incorporated*, with the implementation of Mitigation Measures AQ-1 and AQ-2, construction-related PM_{10} emissions would be reduced to below the South Coast AQMD screening-level LST. Therefore, both construction LSTs and construction-related impacts would be less than significant. Impact 5.2-4 would be reduced to less than significant.

Table 5.2-12 Construction Emissions Compared to the Screening-Level LSTs with Mitigation Incorporated

	Pollutants(lbs/day)[1]			
	NO_X	CO	PM_{10}[2]	$PM_{2.5}$[2]
South Coast AQMD 2.50-Acre LSTs	187	1,324	8.16	5.67
Site Preparation	11	20	7.33	3.79
Exceeds LST?	No	No	No	No

Sources: CalEEMod Version 2020.4; South Coast AQMD 2008 and 2011.
Notes: In accordance with South Coast AQMD methodology, only onsite stationary sources and mobile equipment occurring on the project site are included in the analysis. LSTs are based on receptors within 82 feet (25 meters) of the project site in Source Receptor Area (SRA) 35.
1 Based on information provided or verified by the District. Where specific information regarding project-related construction activities or processes was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by the South Coast AQMD.
2 Includes implementation of Mitigation Measure AQ-1 (Tier 4 interim construction equipment) and fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, street sweeping with Rule 1186–compliant sweepers, and Mitigation Measure AQ-2 (nontoxic soil stabilizers).

5.2.8 References

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5.3 ENERGY

This section of the Draft Environmental Impact Report (DEIR) evaluates the Redlands East Valley High School Stadium Project's (proposed project's) anticipated energy needs, impacts, and conservation measures. Information found herein, as well as other aspects of the proposed project's energy implications, are discussed in Chapter 3, *Project Description*, Section 5.2, *Air Quality*, and Section 5.4, *Greenhouse Gas Emissions*. This section relies on the results of an estimation of fuel for construction in Appendix B of this DEIR, *Air Quality, Greenhouse Gas Emissions, and Energy Analysis*.

No comments were received in response to the Initial Study/Notice of Preparation (IS/NOP) in regard to energy. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.3.1 Environmental Setting

5.3.1.1 REGULATORY BACKGROUND

Federal, state, and local laws, regulations, plans, or guidelines related to energy that are applicable to the proposed project are summarized in this section.

Federal

Federal Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 was established in response to the 1973 oil crisis. The act created the Strategic Petroleum Reserve, established vehicle fuel economy standards, and prohibited the export of U.S. crude oil (with a few limited exceptions). It also created Corporate Average Fuel Economy (CAFE) standards for passenger cars starting in model year 1978. The CAFE standards are updated periodically to account for changes in vehicle technologies, driver behavior, and/or driving conditions.

The federal government issued new CAFE standards in 2012 for model years 2017 to 2025 that required a fleet average of 54.5 miles per gallon (mpg) for model year 2025. However, on March 30, 2020, the United States Environmental Protection Agency (EPA) finalized an updated CAFE and greenhouse gas (GHG) emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 through 2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 mpg for model year 2026 vehicles (SAFE 2020). However, per Executive Order 13990 issued by President Biden on January 20, 2021, the EPA is reconsidering SAFE for the purpose of rescinding the rule. The reconsideration process is ongoing. A planned public hearing occurred on June 2, 2021, which also started the public comment period that ended on July 6, 2021.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving

vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The act sets increased CAFE standards; the renewable fuel standard; appliance energy-efficiency standards; building energy-efficiency standards; and accelerated research and development tasks on renewable energy sources (e.g., solar energy, geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration (US EPA 2019).

State

Warren-Alquist Act

Established in 1974, the Warren-Alquist Act created the California Energy Commission (CEC) in response to the energy crisis of the early 1970s and the state's unsustainable growing demand for energy resources. The CEC's core responsibilities include advancing State energy policy, encouraging energy efficiency, certifying thermal power plants, investing in energy innovation, developing renewable energy, transforming transportation, and preparing for energy emergencies. The Warren-Alquist Act is updated annually to address current energy needs and issues, and its latest edition was in January 2020.

Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) was established in 2002 under Senate Bill (SB) 1078 and was amended in 2006, 2011, and 2018. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. The California Public Utilities Commission (CPUC) is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the state. Per the 2020 annual report, the three largest retail energy utilities—Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric—provided 31, 38, and 39 percent, respectively, of their supplies from renewable energy sources (CPUC 2020). Since 2003, these three utilities have contracted over 21,000 megawatts (MW) of renewable capacity (CPUC 2020).[1] SB 350 (de Leon) was signed into law September 2015 and established tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. SB 100 (de Leon) passed in 2018 puts California on the path to 100-percent fossil-fuel-free electricity by the year 2045 (CEC 2017a).

Senate Bill 350

SB 350 (de Leon) was signed into law September 2015 and established tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

[1] Renewable capacity is defined as the maximum power-generating capacity of power plants that use renewable energy sources to produce electricity.

Senate Bill 100

On September 10, 2018, SB 100 was signed, replacing the SB 350 requirements. Under SB 100, the RPS for publicly owned facilities and retail sellers will consist of 44-percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill established an overall State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100-percent carbon-free electricity target.

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations (California Code of Regulations [CCR] Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy-efficiency technologies and methods (CEC 2017b).

Title 24, Part 6, Energy-Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2019 (CCR Title 24, Part 6). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The 2019 Building Energy-Efficiency Standards, which were adopted on May 9, 2018, went into effect January 1, 2020.

The 2019 standards focus on four key areas: (1) smart residential photovoltaic systems; (2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); (3) residential and nonresidential ventilation requirements; and (4) nonresidential lighting requirements (CEC 2018).

Title 24, Part 11, Green Building Standards

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards—CALGreen (CCR Title 24, Part 11)—as part of the California Building Standards Code. It includes mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the governor. The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2019. The 2019 CALGreen update became effective on January 1, 2020.

Overall, CALGreen is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impacts during and after construction. CALGreen has requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency (CBSC 2019b). On August 11, 2021, the CEC adopted the 2022 Energy Code, which will be presented to the California Building Standards Commission for approval into the California Building Standards Code in December 2021. The 2022 Building Energy Efficiency Standards (Energy Code) would improve upon the 2019 Energy Code for new construction of and additions and alterations to residential and nonresidential buildings. If approved, the 2022 Energy Code will go into effect on January 1, 2023.

5.3.1.2 EXISTING CONDITIONS

Electricity

Electricity is quantified using kilowatts (kW) and kilowatt-hours (kWh). A kW is a measure of 1,000 watts of electrical power and a kWh is a measure of electrical energy equivalent to a power consumption of 1,000 watts for one hour. The kWh is commonly used as a billing unit for energy delivered to consumers by electric utilities. According to the CEC's "Tracking Progress" regarding statewide energy demand, total electric energy usage in California was 279,402 gigawatt hours in 2019 (CEC 2021a). A gigawatt is equal to one billion (10^9) watts or 1,000 megawatts (1 megawatt = 1,000 kW).

The electricity supply for the project site is provided by Southern California Edison (SCE). Total electricity consumption in SCE's service area in gigawatt-hours (GWh) was 105,162 GWh in 2019 (CEC 2021a). Sources of electricity sold by SCE in 2019, the latest year for which data are available, were:

- 35 percent renewable, consisting mostly of solar and wind
- 8 percent large hydroelectric
- 16 percent natural gas
- 8 percent nuclear
- 33 percent unspecified sources, that is, not traceable to specific sources (SCE 2020)

Operation of the existing high school consumes electricity for various purposes, including, but not limited to, operation of electrical systems, lightings, and use of on-site equipment and appliances.

Natural Gas

Gas is typically quantified using the "therm," which is a unit of heat energy equal to 100,000 British thermal units (BTU) and is the energy equivalent of burning 100 cubic feet of natural gas. The Southern California Gas Company (SoCalGas) provides natural gas to the project site. SoCalGas' service area spans much of the southern half of California, from Imperial County on the southeast to San Luis Obispo County on the

northwest, to part of Fresno County on the north to Riverside County, and most of San Bernardino County on the east (CEC 2021b). Total natural gas supplies available to SoCalGas for years 2020 through 2022 are 3.175 billion cubic feet per day. Total natural gas consumption in SoCalGas' service area is forecast to be 2.103 billion cubic feet per day in 2035 (SoCalGas 2020). The existing sport fields, including football field and track and field, do not require use of natural gas.

5.3.2 Thresholds of Significance

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

E-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

E-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

5.3.3 Environmental Impacts

5.3.3.1 METHODOLOGY

The impact analysis focuses on the three sources of energy that are relevant to the proposed project: electricity and natural gas associated with new development of the buildings, stadium lighting surrounding the field, the vehicle fuel usage related to relocated games and events, and the short-term fuel consumed during construction. The analysis of electricity usage by the four Musco lights were calculated using data received from the District. Operation of the proposed home concession/restroom/ticket booth building and visitor concession/restroom/ticket booth building will create a nominal increase in energy demand and will be discussed qualitatively. All emissions modeling and fuel use calculations may be seen in Appendix B.

5.3.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.3-1: The proposed project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. [Threshold E-1]

Short-Term Construction Impacts

Construction of the proposed project would create a temporary increase in demand for electricity and vehicle fuels compared to existing conditions and would result in short-term transportation-related energy use.

Electrical Energy

Construction of the proposed project would not require electricity to power most construction equipment. Electricity use during construction would vary during different phases of construction. The majority of

construction equipment during demolition and grading would be gas- or diesel-powered, and the later construction phases would require electricity-powered equipment for interior construction and architectural coatings. Overall, the use of electricity would be temporary and would fluctuate according to the phase of construction. It is anticipated that the majority of electric-powered construction equipment would be hand tools (e.g., power drills, table saws, compressors) and lighting, which would result in minimal electricity usage during construction activities. Furthermore, electrical energy would be available for use during construction from existing power lines and connections, precluding the use of less-efficient generators. Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be **less than significant**.

Natural Gas Energy

It is not anticipated that construction equipment used for the proposed project would be powered by natural gas, and no natural gas demand is anticipated during construction. Therefore, impacts would be **less than significant** with respect to natural gas usage.

Transportation Energy

Transportation energy use depends on the type and number of trips, vehicle miles traveled (VMT), fuel efficiency of vehicles, and travel mode. Additionally, transportation energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline.

The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. It is anticipated that the majority of off-road construction equipment, such as those used during demolition and grading, would be gas or diesel powered. In addition, all construction equipment would cease operating onsite upon completion of project construction. Thus, impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. Furthermore, to limit wasteful and unnecessary energy consumption, the construction contractors are anticipated to minimize nonessential idling of construction equipment during construction, in accordance with 13 CCR Article 4.8, Chapter 9, Section 2449, which limits nonessential idling of diesel-powered off-road equipment to five minutes or fewer.

It is anticipated that the construction equipment would be well maintained and meet the appropriate tier ratings per EPA emissions standards so that adequate energy-efficiency level is achieved. Construction trips would not result in unnecessary use of energy since the project site is centrally located and is served by numerous regional circulation systems (e.g., State Route [SR]-38 and Interstate 10) that provide the most direct routes from various areas of the region. Thus, transportation energy use during construction of the proposed project would not be considered inefficient, wasteful, or unnecessary. Impacts would be **less than significant**.

Long-Term Impacts During Operation

Operation of the proposed project would generate additional demand for electricity for the new Musco stadium lights surrounding the stadium, and operation of the proposed new concessions/restroom/ticket booth buildings on the home and visitors side of the high school stadium.

Electrical Energy

As with the existing school facilities, operation of the proposed project would consume electricity for various purposes, including heating, cooling, and ventilation of buildings, water heating, operation of electrical systems, lighting, and use of on-site equipment and appliances. Electrical service to the proposed project would continue to be provided by SCE through connections to existing off-site electrical lines and new on-site infrastructure as needed for each phase. Electricity use from the construction of the stadium lighting were calculated based on the 60 events occurring per year. As shown in Table 5.3-1, *Electricity Consumption*, the net increase in electricity use for the proposed lighting would be 17,954 kWh/year.

Table 5.3-1 Net Electricity Consumption (Buildout)

Land Use	Electricity (kWh/year)[1]
Proposed project Conditions	
Lighting[1]	17,954
Net Change from Existing Conditions	17,954

Source: Redlands East Valley High School Stadium Musco Lighting System.
[1] Energy usage calculations assume stadium lights will be used for 60 events per year for 4 hours per event. See Appendix B for electricity use calculations.

The proposed project would result in a higher electricity demand than existing conditions, due to operation of the new home and visitor concession/restrooms/ticket booth buildings and lighting. However, it would be consistent with the requirements of the Building Energy-Efficiency Standards and CALGreen. Furthermore, the Musco stadium lights would only operate for 60 events per year for 4 hours per event. Therefore, the proposed project would not result in wasteful or unnecessary electricity demands and would result in a **less than significant** impact related to electricity.

Natural Gas Energy

The operation of the proposed project would not increase natural gas consumption as the proposed new buildings would not require use of natural gas. Therefore, **no impact** would occur with respect to natural gas usage.

Transportation Energy

The proposed project would consume transportation energy during operations from the use of motor vehicles. The efficiency of these motor vehicles is unknown, such as the average miles per gallon. Estimates of transportation energy use are based on the overall VMT and its associated transportation energy use. However, because student capacity would not increase and the proposed project would not generate new

events (only the relocation of existing events), the proposed project would not result in additional trips or an increase in VMT. The project would potentially reduce vehicle trips compared to existing conditions since offsite games and events would be relocated to the project site, which eliminates the need to bus participants and players to the offsite venues. Therefore, impacts would be **less than significant** with respect to transportation-related fuel usage.

Impact 5.3-2: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. [Threshold E-2]

The following discusses consistency of the proposed project with state plans pertaining to renewable energy and energy efficiency.

California Renewables Portfolio Standard

The state's electricity grid is transitioning to renewable energy under California's Renewable Energy Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Executive Order S-14-08, signed in November 2008, expanded the state's RPS to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). SB 350 (de Leon) was signed into law September 2015 and established tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. On September 10, 2018, Governor Brown signed SB 100, which supersedes SB 350 requirements. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026 and a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under SB 100, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

The statewide RPS goal is not directly applicable to individual development projects, but to utilities and energy providers such as SCE, which would provide all of the electricity needs for the proposed project. Compliance of SCE in meeting the RPS goals would ensure the State in meeting its objective in transitioning to renewable energy. The proposed project also would be subject to the Building Energy-Efficiency Standards and CALGreen. Because the buildings associated with the proposed project would comply with the latest 2019 energy standards, they would not be wasteful in energy. Furthermore, the proposed project would be reviewed by Division of the State Architect for design, construction, and energy compliance and would not conflict with state or local plans for renewable energy or energy efficiency. Therefore, implementation of the proposed project would not conflict with or obstruct plans for renewable energy and energy efficiency and **no impact** would occur.

5.3.4 Cumulative Impacts

The areas considered for cumulative impacts to electricity and natural gas supplies are the service areas of SCE and SoCalGas, respectively, described previously in Section 5.3.1.2. Other projects would generate increased electricity and natural gas demands. However, all projects in the SCE and SoCalGas service areas would be required to comply with the Building Energy-Efficiency Standards and CALGreen, which would contribute to minimizing wasteful energy consumption and promoting renewable energy sources. Therefore, cumulative impacts would be less than significant, and proposed project impacts would not be cumulatively considerable.

5.3.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.3-1 and 5.3-2.

5.3.6 Mitigation Measures

No mitigation measures are required.

5.3.7 Level of Significance After Mitigation

Impacts would be less than significant.

5.3.8 References

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5.4 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Redlands East Valley High School Stadium Project (proposed project) to cumulatively contribute to greenhouse gas (GHG) emissions impacts. Because no single project is large enough to result in a measurable increase in global concentrations of GHG, climate change impacts of a project are considered on a cumulative basis. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (South Coast AQMD). GHG emissions modeling was conducted using the California Emissions Estimator Model (CalEEMod), version 2020.4.0, and model outputs are in Appendix B of this DEIR. Transportation-sector impacts are based on trip generation and vehicle miles traveled as provided by Garland Associates (see Appendix E). Cumulative impacts related to GHG emissions are based on the regional boundaries of the South Coast Air Basin (SoCAB).

No comments were received in response to the Initial Study/Notice of Preparation (IS/NOP) in regard to greenhouse gas emissions. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.4.1 Environmental Setting

Terminology

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a greenhouse gas absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon-dioxide equivalent (CO_2e).** The standard unit to measure the amount of greenhouse gases in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has

identified four major GHG—water vapor,[1] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[2] The major GHG applicable to the proposed project are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.

    - ***Chlorofluorocarbons (CFCs***) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

    - ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017a). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; USEPA 2020).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.4-1, *GHGs and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH_4, a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2 (IPCC 2007).

Table 5.4-1 GHGs and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO_2[2]	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[2, 3]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[2,]
Carbon Dioxide (CO_2)	1	1	1
Methane (CH_4)[1]	21	25	28
Nitrous Oxide (N_2O)	310	298	265

Source: IPCC 1995, 2007, 2013.
Notes:
[1] The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.
[2] Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
[3] The GWP values in the IPCC's Fifth Assessment Report (IPCC 2013) reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, the AR4 GWP values were used to maintain consistency in statewide GHG emissions modeling. In addition, the 2017 Scoping Plan Update was based on the AR4 GWP values.

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean

temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily on future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in the frequency of warm spells and heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide, average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). The years from 2014 through 2016 showed unprecedented temperatures, with 2014 being the warmest (OEHHA 2018). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels (CCCC 2012).

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, and with unprecedented dry

years in 2014 and 2015 (OEHHA 2018). Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015 (OEHHA 2018). According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.4-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 5.4-2, *Summary of GHG Emissions Risks to California*, and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

Table 5.4-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: CEC 2006, 2009; CCCC 2012; CNRA 2014.

5.4.1.1 REGULATORY BACKGROUND

Federal, state, and local laws, regulations, plans, or guidelines related to greenhouse gases that are applicable to the proposed project are summarized in this section.

Federal

United State Environmental Protection Agency

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings responded to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not in and of themselves impose any emission reduction requirements, but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, the EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions; and, per South Coast AQMD guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

State

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, Executive Order B-30-15, Assembly Bill (AB) 32, Senate Bill (SB) 32, and SB 375.

Executive Order S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and targets for reductions in GHG emissions are generally embodied in AB 32. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction goals established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The first Scoping Plan was adopted by the California Air Resources Board (CARB) on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California were anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ for the state (CARB 2008). To effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline could be met, and develop appropriate regulations and programs to implement the plan by 2012.

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions in the state to 40 percent below 1990 levels by year 2030. Executive Order B-30-15 also directed CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaptation strategy, "Safeguarding California," in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197, making the Executive Order goal for year 2030 into a statewide, mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017b).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero-emission (ZE/NZE) vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten emissions limits on criteria air pollutants and toxic air contaminants from a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE buses and trucks.
- Low Carbon Fuel Standard (LCFS) with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency and utilizes near-zero emissions technology and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan identified local governments as essential partners in achieving the state's long-term GHG reduction goals and recommended local actions to reduce GHG emissions—for example, statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt locally appropriate, robust, and quantitative goals that align with the statewide per capita targets and sustainable development objectives, and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percentage reductions necessary to reach the 2030 and 2050 climate goals (40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions—especially from vehicle miles traveled (VMT)—and direct investments in GHG reductions in the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the "business-as-usual" yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 5.4-3, *2017 Climate Change Scoping Plan Emissions Reductions Gap*. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS,

and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 5.4-3 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target	**60**

Source: CARB 2017b.

Table 5.4-4, *2017 Climate Change Scoping Plan Emissions Change by Sector*, provides estimated GHG emissions compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030. The following sectors would be applicable to the proposed project: residential and commercial, electric power, recycling and waste, and transportation.

Table 5.4-4 2017 Climate Change Scoping Plan Emissions Change by Sector

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[1]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA
Total	**431**	**260**	**-40%**

Source: CARB 2017b.
Notes: TCU = Transportation, Communications, and Utilities; TBD = to be determined.
[1] Work was underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

Senate Bill 375

In 2008, the Sustainable Communities and Climate Protection Act, SB 375, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land

use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks compared to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translates into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted sustainable communities strategies (SCS). As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018). CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018, are subject to these new targets.

Transportation Sector Specific Regulations

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles)

from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards in Section 5.4.1.1 under "Federal"). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less global warming gases and 75 percent less smog-forming emissions (CARB 2011).

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.

Renewables Portfolio: Carbon Neutrality Regulations

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes. CARB is currently updating the Scoping Plan to address the State's carbon neutrality goals.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The Executive Order's goal for the state is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

Energy Efficiency Regulations

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and revised tri-annually (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, go into effect starting January 1, 2020. On August 11, 2021, the CEC adopted the 2022 Energy Code which will be presented to the California Building Standards Commission for approval into the California Building Standards Code in December 2021. If approved, the 2022 Energy Code will go into effect on January 1, 2023.

The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings are 30 percent more energy efficient than under the 2016 standards, and single-family homes are 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[3] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, and were last updated in 2019. The 2019 CALGreen standards became effective January 1, 2020. CALGreen § 5.408 also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Diversion Regulations

Assembly Bill 939: Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting (Public Resources Code §§ 40050 et seq.). In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

Assembly Bill 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. CALGreen § 5.408 also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

[3] The green building standards became mandatory in the 2010 edition of the code.

Assembly Bill 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327) requires areas to be set aside for collecting and loading recyclable materials in development projects (Public Resources Code §§ 42900 et seq.). The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Assembly Bill 1826

In October 2014, Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

Senate Bill X7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

Assembly Bill 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Reduction Strategy

Senate Bill 1383

On September 19, 2016, the governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and methane. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants—to reduce methane by 40

percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfill. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Reduction Strategy," which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s despite the tripling of diesel fuel use (CARB 2017b). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. South Coast AQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these char broilers by over 80 percent (CARB 2017b). Additionally, South Coast AQMD Rule 445 limits installation of new fireplaces in the SoCAB.

Regional

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan. For the SCAG region, the draft 2020-2045 RTP/SCS (Connect SoCal) was adopted on May 7, 2020, for the limited purpose of transportation conformity (SCAG 2020). The Connect SoCal Plan was fully adopted in September 2020. In general, the SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land use strategies in development of the SCAG region through horizon year 2045 (SCAG 2020). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. Additionally, Connect SoCal also forecasts that implementation of the plan will reduce VMT per capita in year 2045 by 4.1 percent compared to baseline conditions for that year. Connect SoCal includes a "core vision" that centers on maintaining and better managing the transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit closer together and increasing investments in transit and complete streets.

5.4.1.2 EXISTING CONDITIONS

California's GHG Sources and Relative Contribution

In 2021, the statewide GHG emissions inventory was updated for 2000 to 2019 emissions using the GWPs in IPCC's AR4 (IPCC 2013). Based on these GWPs, California produced 418.2 $MMTCO_2e$ GHG emissions in 2019. California's transportation sector was the single largest generator of GHG emissions, producing 39.7 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (10.5 percent), agriculture and forestry (7.6 percent), high GWP (4.9 percent), and recycling and waste (2.1 percent) (CARB 2021).

Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2016, California statewide GHG emissions dropped below the AB 32 target for year 2020 of 431 $MMTCO_2e$ and have remained below this target since then. In 2019, emissions from routine GHG-emitting activities statewide were almost 13 $MMTCO_2e$ lower than the AB 32 target for year 2020. Per capita GHG emissions in California have dropped from a 2001 peak of 14.0 $MTCO_2e$ per person to 10.5 $MTCO_2e$ per person in 2019, a 25 percent decrease.

Transportation emissions continued to decline in 2019 statewide as they had done in 2018, with even more substantial reductions due to a significant increase in renewable diesel. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2019, solar power generation continued its rapid growth since 2013. Emissions from high-GWP gases made up 4.9 percent of California's emissions in 2019. This continues the increasing trend as the gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product) has declined 45 percent since the 2001 peak, though the state's gross domestic product grew 63 percent during this period (CARB 2021).

Project Site

The project site is located on the west side of the Redlands East Valley HS campus at 31000 East Colton Avenue in the unincorporated area of San Bernardino County. The project site encompasses sport fields, including football field and track and field; restrooms; hardcourts, parking lot, and paved walkways; drainage way, utility infrastructure, and grassy areas. The project site is approximately 6.95 acres and is generally flat, with a slope that runs along the eastern side of the project site. The football field is surrounded by a clay track. The field itself is natural grass. There are eight existing hardtop courts to the west of the track and field, along Opal Avenue. Redlands East Valley High School and project site currently generate GHG emissions from transportation (student and staff vehicle trips and bus use), area sources (consumer products and cleaning supplies), energy use, water use/wastewater generation, and solid waste disposal.

5.4.2 Thresholds of Significance

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

GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

South Coast Air Quality Management District

South Coast AQMD adopted a significance threshold of 10,000 $MTCO_2e$ per year for permitted (stationary) sources of GHG emissions for which South Coast AQMD is the designated lead agency. To provide

guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, South Coast AQMD convened a GHG CEQA Significance Threshold Working Group. Based on the last Working Group meeting in September 2010 (Meeting No. 15), South Coast AQMD identified a tiered approach for evaluating GHG emissions for development projects where South Coast AQMD is not the lead agency (South Coast AQMD 2010a). The following tiered approach has not been formally adopted by South Coast AQMD.

- **Tier 1.** If a project is exempt from CEQA, project-level and contribution to significant cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (e.g., city or county), project-level and contribution to significant cumulative GHG emissions are less than significant.

- **Tier 3.** If GHG emissions are less than the screening-level criterion, project-level and contribution to significant cumulative GHG emissions are less than significant.

  For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, South Coast AQMD requires an assessment of GHG emissions. Project-related GHG emissions include on-road transportation, energy use, water use, wastewater generation, solid waste disposal, area sources, off-road emissions, and construction activities. The South Coast AQMD Working Group decided that because construction activities would result in a "one-time" net increase in GHG emissions, construction activities should be amortized into the operational phase GHG emissions inventory based on the service life of a building. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation. South Coast AQMD identified a screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types. The bright-line screening-level criteria are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds. Therefore, projects that do not exceed the bright-line threshold would have a nominal and less than cumulatively considerable impact on GHG emissions. South Coast AQMD recommends use of the 3,000 $MTCO_2e$ interim bright-line screening-level criterion for all project types (South Coast AQMD 2010b).

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.[4]

  The South Coast AQMD Working Group identified an efficiency target for projects that exceed the screening threshold of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan-level projects (e.g., program-level projects such as general

[4] South Coast AQMD had identified an efficiency target for projects that exceed the bright-line threshold: a 2020 efficiency target of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan-level projects (e.g., general plans). Service population is generally defined as the sum of residential and employment population of a project. The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[4]

plans) for the year 2020.[5] The per capita efficiency targets were based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[6]

The South Coast AQMD Working Group's bright-line screening-level criterion of 3,000 $MTCO_2e$ per year is used as the significance threshold for this project. If the project operation-phase emissions exceed this criterion, GHG emissions would be considered potentially significant without mitigation measures.

5.4.3 Environmental Impacts

5.4.3.1 METHODOLOGY

This GHG emissions evaluation was prepared in accordance with the requirements of CEQA to determine if significant GHG emissions impacts are likely in conjunction with the type and scale of development associated with the proposed project. Air pollutant emissions are calculated using CalEEMod, version 2020.4.0. CalEEMod compiles an emissions inventory of construction (fugitive dust, off-gas emissions, on-road emissions, and off-road emissions), area sources, indirect emissions from energy use, mobile sources, indirect emissions from waste disposal (annual only), and indirect emissions from water/wastewater use (annual only). The following provides a summary of the assumptions used for the proposed project analysis. GHG emissions modeling datasheets are in Appendix B.

Construction Phase

The construction phase would entail demolition of existing structures and asphalt, site preparation, grading, off-site hauling of demolition debris and earthwork material, construction of the proposed structures and buildings, architectural coating, and asphalt paving on 4.06 acres of the 6.95-acre project site. The proposed project is anticipated to be constructed in three phases, from March 2022 to November 2026. To provide a conservative analysis of the impacts of the project, modeling was conducted for the worst-case phase with year 2022 emission rates, the worst-case phasing, and equipment. For the GHG emissions, total construction emissions from the worst-case phase were multiplied by three in order to reflect total, worst-case combined emissions from all three construction phases for the 5-year construction period. Construction GHG emissions are based on the preliminary information provided or verified by the District. Construction phasing and duration information as well as equipment mix are summarized in Section 5.2, *Air Quality*, in Table 5.2-9, *Construction Phasing and Equipment*. Annual average construction emissions were amortized over 30 years and included in the emissions inventory to account for one-time GHG emissions from the construction phase of the proposed project.

Operational Phase

For the operational phase, GHG emissions were calculated for the new lights that would be installed at the proposed project and operation of the proposed new home and visitor concession/restroom/ticket booth buildings. GHG emissions from lighting were based on the energy demand provided for in the Musco

[5] It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

[6] South Coast AQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

lighting study of 74.81 kilowatts, which conservatively assumes that the lights would be on for four hours during the 60 events held at the stadium, for a total of 17,954 kilowatt-hours annually. Energy demand was then multiplied by the carbon intensity of the Southern California Edison electricity of 512 pounds per megawatt-hour (SCE 2021).

Life cycle emissions are not included in the GHG analysis, consistent with California Natural Resources Agency directives.[7] Black carbon emissions are not included in the GHG analysis because CARB does not include this short-lived climate pollutant in the state's AB 32/SB 32 inventory but treats it separately.[8]

5.4.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.4-1: Implementation of the proposed project would not generate a net increase in GHG emissions, either directly or indirectly, that would have a significant impact on the environment. [Threshold GHG-1]

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

Project-related construction and operation-phase GHG emissions are shown in Table 5.4-5, *Net Increase in Project-Related Emissions*. As documented in Section 5.8, T*ransportation*, the proposed project would not result in an increase in VMT. Varsity and junior varsity games currently held offsite would be held onsite with the proposed project. Likewise, the proposed project would result in a reduction in water use because the existing natural turf fields would be replaced with synthetic turf. However, the proposed project would generate a net increase in GHG emissions from energy use due to the new stadium lighting and new buildings. While the proposed project would result in a higher GHG emissions associated with the operation of the proposed home and visitor concession/restroom/ticket booth buildings in comparison to existing conditions, this would be a nominal increase since it would be consistent with the requirements of the Building Energy Efficiency Standards and CALGreen. In addition, the temporary, one-time construction emissions during Phase 1, Phase 2, and Phase 3 would generate an increase in emissions. Annual average construction

[7] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analysis was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials is also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

[8] Particulate matter emissions, which include black carbon, are analyzed in Section 5.2, *Air Quality*. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2017a).

emissions were amortized over 30 years and included in the emissions inventory to account for one-time GHG emissions from construction. Overall, as shown in Table 5.4-5, operation of the proposed project would not generate annual emissions that exceed the South Coast AQMD bright-line threshold of 3,000 $MTCO_2e$ per year (South Coast AQMD 2010b). Therefore, the proposed project's cumulative contribution to GHG emissions would be **less than significant**.

Table 5.4-5 Net Increase in Project-Related GHG Emissions

Source	$MTCO_2e$ Per Year	Percentage of Net Total Emission
One-Time Construction Emissions		
Worst Case – Year 2022	283	NA
Phase 2 – Year 2024	283	NA
Phase 3 – Year 2026	283	NA
Total All Three Phases	**848**	NA
Long-Term Operational Emissions		
Energy[1]	4	13%
30-Year Amortized Construction[2]	28	87%
Net Change in Emissions	**32**	**NA**
South Coast AQMD Bright Line Threshold	3,000 $MTCO_2e$	NA
Exceeds South Coast AQMD Bright Line Threshold	No	NA

Source: CalEEMod v. 2020.4.0. Emissions do not total to 100 percent due to rounding.
Note: NA = not applicable
1 Includes emissions from lighting use. Stadium lighting is based on the Musco lighting study and carbon intensity of SCE electricity and 72 events per year at the stadium.
2 Construction emissions/sequestration are amortized over a 30-year period.

Impact 5.4-2: Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. [Threshold GHG-2]

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SCAG's RTP/SCS. A consistency analysis with these plans is presented below.

CARB Scoping Plan

CARB's 2017 Scoping Plan is California's GHG reduction strategy to achieve the state's GHG emissions reduction target established by SB 32, which is to reduce GHG emissions to 40 percent below 1990 emission levels by year 2030. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties or individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance- and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the Corporate Average Fuel Economy standards, and other early action measures as necessary to ensure the state is on target

to achieve the GHG emissions reduction goals of AB 32 and SB 32. New buildings are required to comply with the latest applicable Building Energy Efficiency Standards and CALGreen. While measures in the Scoping Plan apply to state agencies and not the proposed project, the proposed project's GHG emissions would be reduced by statewide compliance with measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the proposed project would not obstruct implementation of the CARB Scoping Plan, and impacts would be **less than significant**.

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SCAG adopted the 2020-2045 RTP/SCS (Connect SoCal) in September 2020. Connect SoCal finds that land use strategies that focus on new housing and job growth in areas rich with destinations and mobility options are consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in Connect SoCal is to plan for the southern California region to grow in more compact communities in transit priority areas and priority growth areas; provide neighborhoods with efficient and plentiful public transit; establish abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands and farmlands (SCAG 2020). Connect SoCal's transportation projects help more efficiently distribute population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network in Connect SoCal, would reduce per-capita GHG emissions related to vehicular travel and achieve the GHG reduction per capita targets for the SCAG region.

The Connect SoCal Plan does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency to governments and developers. The proposed project would allow for games and events at the Redlands East Valley High School campus rather than offsite, which would reduce vehicle miles traveled. Additionally, the proposed project would not increase student enrollment the high school. Therefore, the proposed project would not interfere with SCAG's ability to implement the regional strategies in Connect SoCal, and impacts would be **less than significant**.

5.4.4 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, Impact 5.4-1 is not a project-specific impact, but the proposed project's contribution to a cumulative impact. Implementation of the proposed project would not result in annual emissions that would exceed South Coast AQMD's bright-line threshold. Therefore, project-related GHG emissions and their contribution to global climate change would not be cumulatively considerable, and GHG emissions impacts would be **less than significant.**

5.4.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.4-1 and 5.4-2.

5.4.6 Mitigation Measures

No mitigation measures are required.

5.4.7 Level of Significance After Mitigation

Impacts would be less than significant.

5.4.8 References

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5.5 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the Redland East Valley High School Stadium Project (proposed project) to hydrology and water quality conditions at the campus and surrounding community. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface- and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface.

Two comment letters were received in response to the Initial Study/Notice of Preparation (IS/NOP) circulated for the proposed project— from the City of Redlands Planning department and the Federal Emergency Management Agency (FEMA) —regarding the proposed project's potential utilities impacts that may affect the City of Redlands, and potential flooding impacts, which are evaluated in this section. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.5.1 Environmental Setting

5.5.1.1 REGULATORY BACKGROUND

Federal, State, regional, and local laws, regulations, plans, or guidelines related to transportation that are applicable to the Proposed Project are summarized in this section. They are designed to achieve regional water quality objectives, which protect the beneficial uses of the region's surface and groundwater.

Federal

Clean Water Act

The Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972. The CWA is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States[1] and gives the federal Environmental Protection Agency (EPA) the authority to implement pollution-control programs, such as setting wastewater standards for industry. The statute's goal is to end all discharges entirely and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates both the direct and indirect discharge of pollutants into the nation's waters. The CWA sets water quality standards for all contaminants in surface waters and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges, requires states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA also funded the construction of sewage treatment plants and recognized the need for planning to address nonpoint sources of pollution. The following CWA sections assist in ensuring water quality in surrounding water bodies.

[1] Waters of the US generally include surface waters—lakes, rivers streams, bays, the ocean, dry streambeds, wetlands—and storm sewers that are tributary to any surface water body.

- Section 208 of the CWA requires the use of best management practices (BMP) to control discharge of pollutants in stormwater during construction.

- Section 303(d) requires creation of a list of impaired water bodies by states, territories, and authorized tribes; evaluation of lawful activities that may impact impaired water bodies;[2] and preparation of plans to improve the quality of these water bodies. Water bodies on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution-control technology.

- Section 402(p) establishes a framework to control water pollution by regulating point-source discharges under the National Pollutant Discharge Elimination System (NPDES) permit program. Point-source discharges are readily identifiable, discrete inputs where waste is discharged to the receiving waters from a pipe or drain. Nonpoint discharges occur over a wide area and are associated with particular land uses (such as urban runoff from streets and stormwater from construction sites).

National Pollution Discharge Elimination System

Under the NPDES program (under § 402 of the CWA), all facilities that discharge pollutants from any point source into waters of the US must have a NPDES permit. The term "pollutant" broadly applies to any type of industrial, municipal, and agricultural waste discharged into water. Point sources can be publicly owned treatment works, industrial facilities, and urban runoff. The NPDES program addresses certain agricultural activities, but the majority are considered nonpoint sources and are exempt from NPDES regulation. Direct sources discharge directly to receiving waters, and indirect sources discharge to publicly owned treatment works, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only for direct, point-source discharges. The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 50,000 or more, as well as construction sites one acre or more in size, must file for and obtain a NPDES permit.

State

State Water Resources Control Board

Responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB). The Redlands East Valley HS, including the project site, is in RWQCB Region 8 (Santa Ana). The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. The RWQCBs develop and implement water quality control plans (basin plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. In cases where the basin plan does not have a standard for a particular pollutant, other criteria are used to establish a standard. Other criteria may be applied from SWRCB documents (e.g., the Inland Surface Waters Plan and the Pollutant Policy Document, California Toxics Rule) or from EPA water quality criteria developed under § 304(a) of the CWA. Numeric criteria are required by the CWA for many priority toxic pollutants. To fill the gap between the

[2] Impaired water bodies are water bodies that do not meet or are not expected to meet water quality standards.

water quality control plans and CWA requirements, on May 18, 2000, the EPA passed the California Toxics Rule. These federal criteria are numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards legally applicable in California for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code §§ 13000 et seq.) is the basic water quality control law for California. Under this act, the SWRCB has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB and its nine RWQCBs. Through its nine RWQCBs, the SWRCB carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems.

Waste Discharge Requirements

All dischargers of waste to waters of the state are subject to regulation under the Porter-Cologne Act, and the mandate for waste discharge requirements (WDR) is incorporated into the California Water Code. This includes both point- and non-point-source dischargers. All current and proposed non-point-source discharges to land must be regulated under WDRs, waivers of WDRs, a basin plan prohibition, or some combination of these administrative tools. Discharges of waste directly to state waters are subject to an individual or general NPDES permit, which also serves as WDRs. The proposed project is subject to the Construction General Permit, which also serve as WDRs. The proposed project would also be subject to an individual WDR or NPDES permit for the on-site wastewater treatment system and for construction dewatering, if required.

The RWQCBs have primary responsibility for issuing WDRs. The RWQCBs may issue individual WDRs to cover individual discharges or general WDRs to cover a category of discharges. WDRs may include effluent limitations or other requirements that are designed to implement applicable water quality control plans, including designated beneficial uses and the water quality objectives established to protect those uses and prevent the creation of nuisance conditions. Violations of WDRs may be addressed by issuing Cleanup and Abatement Orders or Cease and Desist Orders, assessing administrative civil liability, or seeking imposition of judicial civil liability or judicial injunctive relief.

Total Maximum Daily Loads, State-Level Implementation

States are required to assess waters for impairment every two years and develop total maximum daily loads (TMDL) for waterbodies listed as impaired on the 303(d) list approved by the EPA. The current approved 303(d) list is the 2014 and 2016 combined list, which was approved by the EPA on April 6, 2018 (SWRCB 2021). The 303(d) list includes the pollutant(s) contributing to impairment, sources of impairment, and a completion date for development of TMDLs. In California, the SWRCB has interpreted state law to require that implementation be addressed when TMDLs are incorporated into basin plans.

NPDES State- and Regional-Level Implementation

The SWRCB establishes policies and regulations that help protect and restore the water quality in California. The SWRCB also coordinates with and supports RWQCB efforts and reviews RWQCB actions. The RWQCB monitors and enforces state and federal plans, policies, and regulations. Each RWQCB makes critical water quality decisions for its region. The vast majority of NPDES permits are issued by RWQCBs, though the SWRCB has also issued a few. Typically, NPDES permits are issued for a five-year term. Future development on the project site would be subject to conditions in the NPDES permits described below.

Statewide NPDES General Construction Activity Stormwater Permit

Pursuant to the CWA § 402(p) and related to the goals of the Porter-Cologne Water Quality Control Act, the SWRCB has issued a statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Order No. 2009-0009-DWQ, NPDES No. CAR000002), adopted September 2, 2009, hereinafter referred to as the Construction General NDPES Permit. Every construction project that disturbs one or more acre of land surface or that is part of a common plan of development or sale that disturbs more than one acre of land surface requires coverage under the Construction General NPDES Permit. Construction activities subject to the Construction General NPDES Permit include clearing; grading; and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least one acre of total land area. To obtain coverage under the Construction General NDPES Permit, the landowner or other applicable entity must file permit registration documents prior to the commencement of construction activity, which include a Notice of Intent, Stormwater Pollution Prevention Plan (SWPPP), and other documents required by the Construction General NPDES Permit and SWRCB. Because the proposed project would disturb more than one acre, construction of the proposed project would be subject to the Construction General NPDES Permit requirements.

The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges; and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-storm-water discharges. The SWPPP must include specific minimum BMPs for stormwater quality depending upon the project's sediment risk to receiving waters. BMPs are intended to reduce impacts to the maximum extent practicable, a standard created by Congress to give regulators the necessary flexibility to tailor programs to the site-specific features of municipal stormwater discharges. Reducing impacts to the maximum extent practicable is generally accomplished by BMPs that emphasize pollution prevention and source control, with additional structural controls as needed. However, depending on the project's sediment risk, stormwater runoff Numeric Action Level or Numeric Effluent Levels are required for pH and turbidity.

Risk levels are based on a matrix of project sediment risk and receiving water risk. Sediment risk is based on estimated soil loss, as calculated by the Revised Universal Soil Loss Equation. Soil loss of less than 15 tons/acre is considered low risk; soil loss between 15 and 75 tons/acre is medium risk; and soil loss over 75 tons/acre is considered high risk. Receiving water risk is based on whether a project drains to a sediment-sensitive waterbody. A sediment-sensitive waterbody is either on the most recent 303(d) list for waterbodies impaired for

sediment; has an EPA-approved TMDL implementation plan for sediment; or has the beneficial uses of cold freshwater habitat, fish spawning, and fish migration.

California Department pf Fish and Wildlife

The CDFW regulates activities that may affect rivers, streams, and lakes pursuant to the California Fish and Game Code (§§1600–1616). According to § 1602 of the California Fish and Game Code, the CDFW has jurisdictional authority over any work that will (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

California Fish and Game Code

Section 1600 of the California Fish and Game Code requires a project proponent to notify the California Department of Fish and Wildlife (CDFW) of any proposed alteration of streambeds, rivers, and lakes. The intent is to protect habitats that are important to fish and wildlife. CDFW may review and place conditions on the project, as part of a Streambed Alteration Agreement (SAA), that address potentially significant adverse impacts within CDFW's jurisdictional limits.

Municipal Stormwater Program

The Municipal Storm Water Program regulates storm water discharges from municipal separate storm sewer systems (MS4s) throughout California. U.S. EPA defines an MS4 as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a State (40 CFR 122.26(b)(8)). Pursuant to the Federal Water Pollution Control Act (Clean Water Act) section 402(p), storm water permits are required for discharges from an MS4 serving a population of 100,000 or more. The Municipal Storm Water Program manages the Phase I Permit Program (serving municipalities over 100,000 people), the Phase II Permit Program (for municipalities less than 100,000), and the Statewide Storm Water Permit for the State of California Department of Transportation. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (collectively, the Water Boards) implement and enforce the Municipal Storm Water Program.

Local

San Bernardino County General Plan

The county's general plan is primarily a policy document that sets goals concerning the community and gives direction to growth and development. In addition, it outlines programs that were developed to accomplish the goals and policies of the general plan.

Infrastructure and Utilities Element

The infrastructure and utilities element has the following goals, policies, and objectives related to hydrology and water quality:

- **Goal IU-1 Water Supply:** Water supply and infrastructure are sufficient for the needs of residents and businesses and resilient to drought.

    - **Policy IU-1.1 Water supply.** We require that new development be connected to a public water system or a County-approved well to ensure a clean and resilient supply of potable water, even during cases of prolonged drought.

    - **Policy IU-1.3 Recycled water.** We promote the use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other applicable uses in order to supplement groundwater supplies.

    - **Policy IU-1.4 Greywater.** We support the use of greywater systems for non-potable purposes.

    - **Policy IU-1.7 Areas vital for groundwater recharge.** We allow new development on areas vital for groundwater recharge when stormwater management facilities are installed onsite and maintained to infiltrate predevelopment levels of stormwater into the ground.

    - **Policy IU-1.8 Groundwater management coordination.** We collaborate with watermasters, groundwater sustainability agencies, water purveyors, and other government agencies to ensure groundwater basins are being sustainably managed. We discourage new development when it would create or aggravate groundwater overdraft conditions, land subsidence, or other "undesirable results" as defined in the California Water Code. We require safe yields for groundwater sources covered by the Desert Groundwater Management Ordinance.

    - **Policy IU-1.9 Water conservation.** We encourage water conserving site design and the use of water conserving fixtures, and advocate for the adoption and implementation of water conservation strategies by water service agencies. For existing County-owned facilities, we incorporate design elements, building materials, fixtures, and landscaping that reduce water consumption, as funding is available.

    - **Policy IU-1.10 Connected systems.** We encourage local water distribution systems to interconnect with regional and other local systems, where feasible, to assist in the transfer of water resources during droughts and emergencies.

    - **Policy IU-1.11 Water storage and conveyance.** We assist in development of additional water storage and conveyance facilities to create a resilient regional water supply system, when it is cost effective for County-owned water and stormwater systems.

- **Goal IU-3 Stormwater Drainage**: A regional stormwater drainage backbone and local stormwater facilities in unincorporated areas that reduce the risk of flooding.

    - **Policy IU-3.1 Regional flood control.** We maintain a regional flood control system and regularly evaluate the need for and implement upgrades based on changing land coverage and hydrologic conditions in order to manage and reduce flood risk. We require any public and private projects

proposed anywhere in the county to address and mitigate any adverse impacts on the carrying capacity and stormwater velocity of regional stormwater drainage systems.

- **Policy IU-3.2 Local flood control.** We require new development to install and maintain stormwater management facilities that maintain predevelopment hydrology and hydraulic conditions.

Natural Resources Element

The natural resources element has the following goals, policies, and objectives related to hydrology and water quality:

- **Goal NR-2 Water Quality:** Clean and safe water for human consumption and the natural environment.
    - **Policy NR-2.1 Coordination on water quality**. We collaborate with the state, regional water quality control boards, watermasters, water purveyors, and government agencies at all levels to ensure a safe supply of drinking water and a healthy environment.
    - **Policy NR-2.2 Water management plans.** We support the development, update, and implementation of ground and surface water quality management plans emphasizing the protection of water quality from point and non-point source pollution.
    - **Policy NR-2.4 Wastewater discharge.** We apply federal and state water quality standards for wastewater discharge requirements in the review of development proposals that relate to type, location, and size of the proposed project in order to safeguard public health and shared water resources.
    - **Policy NR-2.5 Stormwater discharge.** We ensure compliance with the County's Municipal Stormwater NPDES (National Pollutant Discharge Elimination System) Permit by requiring new development and significant redevelopment to protect the quality of water and drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, best management practices, low impact development strategies, and technological advances. For existing development, we monitor businesses and coordinate with municipalities.

San Bernardino County Development Code

§ 33.0616 Water Quality.

All water sources used for domestic water supply shall meet minimum standards of Administrative Code Title 22, Division 4, Chapter 15, "Domestic Water Quality and Monitoring."

§ 33.0622 Surface Water Sources.

Surface water sources (stream diversion works, impoundments, infiltration galleries, springs, etc.) shall not be utilized as sources of water supply for public water systems unless the permittee has demonstrated to DEHS that there are no reasonable means of obtaining an acceptable quality and quantity of groundwater, that

required surface water rights documentation has been completed, that such surface sources and water treatment methods thereof have been approved for use by DEHS.

§ 33.0640 Water Quality Standards.

Water from all new, repaired, and reconstructed community water supply wells shall be tested for, and meet standards for, microbiological, chemical, physical, and radiological quality in accordance with Administrative Code Title 22, Division 4, Chapter 15, "Domestic Water Quality and Monitoring."

§ 85.11.030 Erosion Control Plan and Inspection Required.

a) *No Land Disturbance or Construction Activity without Prior Approval.* No person except as provided in this Chapter, shall commence with a disturbance of land (e.g., grading or land clearing) or construction activity that has that potential to cause erosion without first obtaining approval of erosion control measures to ensure that erosion would not reasonably be expected to occur. Best Management Practices (BMPs) shall be implemented at all land disturbance sites, regardless of the area of disturbance.

b) *Inspections Required.* Site inspections shall be conducted as needed to verify compliance with this Chapter. Project proponents must also recognize that their project is subject to inspection by the Public Works Department, Environmental Management Division, and Regional Water Quality Control Board staff as part of their General Construction Permit obligations.

c) *Stormwater Pollution Prevention Plan.* Projects disturbing more than one acre are also required to have coverage under the State General Construction Permit issued by the State Water Resources Control Board and develop a Stormwater Pollution Prevention Plan (SWPPP). The property owner is required to abide by all provisions of the State General Construction Permit and obtain a Waste Discharge Identification (WDID) number prior to the issuance of building or grading permits when the disturbance is more than one acre.

d) *Review Requirements of Plan.* The Building Official, with the concurrence of the Planning Division and the Land Development Division, when appropriate, shall review the plan and determine that the proposed erosion control measures will be adequate and whether or not an erosion control permit is specifically required.

e) *Maintenance of Features.* The required features of the approved Erosion Control Plan shall be implemented during the land disturbing activity and maintained thereafter in accordance with the approved plan

5.5.1.2 EXISTING CONDITIONS

Water Supply

The City of Redlands (city) is the Redlands East Valley HS's water service provider. The city provides potable water to more than 75,000 residents in Redlands, Mentone, parts of Crafton Hills and San Timoteo Canyon, and a small parts of unincorporated San Bernardino County. The City of Redlands provides an average of 27

million gallons of water per day, with a maximum of 50 million gallons of water per day in the summer (Redlands 2021a). Wastewater generated from the project site is treated at the City of Redlands Wastewater Treatment Plant, which currently processes about 6 million gallons per day and has the capacity to treat 9.5 million gallons of wastewater a day (Redlands 2021b).

The city receives its water from Mill Creek Watershed that is treated at the Henry Tate Water Treatment Plant (WTP) on Highway 38 east of Mentone; from the Santa Ana River Watershed that is treated at the Hinckley WTP north of Mentone; from local groundwater pumped from wells in Redlands, Mentone, and Yucaipa; and from the California State Water Project that is treated at the Hinckley WTP and Tate WTP.

Surface Water

Redlands East Valley HS, including the project site, is located in the Valley Region of San Bernardino County, which is situated at the base of the San Gabriel and San Bernardino mountains to the north. Drainage in the Valley Region is mainly via creeks, streams, and washes descending from mountains and foothills. Many of these features drain into the Santa Ana River, and the Valley Region is in the Southern California Coastal Watershed (specifically the Santa Ana sub-watershed). A stream line named The Zanja runs along southern border of Redlands East Valley HS and project site. The Zanja steam does not come onto the project site. The Zanja stream originates in the San Bernardino mountains, approximately 3 miles northeast of the campus, and terminates in the City of Redlands, approximately 2.6 miles west of the campus.

Stormwater

Residential development, a paper supply company, a development site, and the Redlands East Valley HS surround the project site to the east, west, and north. Agricultural uses and a single-family residential dwelling unit are located to the south of the project site. As such, stormwater in the area is characterized by urban and agricultural runoff. Stormwater runoff (both dry and wet weather) discharges into storm drains and, in most cases, flows directly to creeks, rivers, lakes, and the ocean. Polluted runoff can have harmful effects on drinking water, recreational water, and wildlife. Urban and agricultural runoff pollution can include a wide array of environmental, chemical, and biological compounds from both point and nonpoint sources. Stormwater characteristics depend on site conditions (e.g., land use, impervious cover, pollution prevention, types and amounts of BMPs), rain events (duration, amount of rainfall, intensity, and time between events), soil type and particle sizes, multiple chemical conditions, the amount of vehicular traffic, and atmospheric deposition. Major pollutants typically found in runoff from urban areas include sediments, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogens, and bacteria. Pollutants from agricultural uses can include pesticides, fertilizers, and other agricultural-related compounds.

Since the project site is developed, its runoff would be most similar to urban runoff. Urban runoff can be divided into two categories: dry and wet weather urban runoff. Dry weather urban runoff is not generated by precipitation. Typical sources of dry weather urban runoff onsite include landscape irrigation. Wet weather urban runoff refers collectively to non-point-source discharges that result from precipitation and include stormwater runoff and stormwater discharges from impervious areas such as building rooftops, paved and hardtop surfaces, such as drive aisles, surface parking lots, walkways, and the hardtop basketball courts.

An existing underground stormwater drainage line enters the project site from the northeast corner and runs west along the northern end of the project site. This storm drain line comes above ground in a at grade drainage area on the northwest corner of the project site. A second existing underground stormwater drainage line enters the project site at the southeast corner, runs north along the top of the slope to the east of the existing football field and track and field, and connects to the aforementioned stormwater drainage line along the north end of the project site. Catch basins and storm drain lines surround the existing sport field also discharge to the at-grade drainage area. Stormwater from this area continues offsite in underground drainage line at the northwest corner of the project site. Stormwater onsite either flows through this stormwater water system or is directed towards concrete gutters onsite and in the public right-of-way offsite.

Groundwater and Groundwater Quality

Most of the Valley Region is underlain by the Upper Santa Ana River Valley Groundwater Basin. Portions of the Mountain Region are underlain by the Bear Valley, Big Meadows Valley, and Seven Oaks Valley groundwater basins.

The North Desert and East Desert regions are underlain by numerous groundwater basins. For instance, the Mojave River passes over five groundwater basins: the Upper Mojave River Valley, Middle Mojave River Valley, Lower Mojave River Valley, Caves Canyon Valley, and Soda Lake Valley basins (DWR 2019).

Flood Hazards

Designated Flood Zones

The proposed project area is within FEMA Flood Zone X, area with reduced flood risk due to a levee (FEMA 2008). Zone X is an area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the 500-year flood level or reduced flood risk due to levee. However, the proposed project site is also located adjacent to areas within FEMA Flood Zone AE, which are areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown, and mandatory flood insurance purchase requirements and floodplain management standards apply.

As described by the IS/NOP comment letter received from FEMA's Floodplain Management and Insurance Branch, the City of Redlands, which is located approximately 0.25 mile west of the project site, is a participant in the National Flood Insurance Program (NFIP). A summary of these NFIP floodplain management building requirements include the following:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any development must not increase base flood elevation levels. The term development means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or

materials. A hydrologic and hydraulic analysis must be performed prior to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision.

5.5.2 Thresholds of Significance

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

HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

HYD-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

HYD-3 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 a substantial erosion or siltation on- or off-site.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.

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.

iv) Impede or redirect flood flows.

HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The IS/NOP, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold HYD-2
- Threshold HYD-4

- Threshold HYD-5

These impacts will not be addressed in the following analysis.

5.5.3 Environmental Impacts

5.5.3.1 IMPACT ANALYSIS

The impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.5-1: The proposed project would not violate any water quality standards or waste discharge requirements. [Threshold HYD-1]

Construction and operation of the proposed project would be subject to local, state, and federal water quality regulations. This includes, but is not limited to, required adherence to the CWA, Santa Ana RWQCB regulations, NPDES requirements, the National Flood Insurance Act, California Department of Water Resources requirements, the California Fish and Game Code, the California Water Code, and other applicable regulatory requirements. Development of the proposed project could cause a significant impact to hydrology and water quality if associated construction activities or operations would result in the violation of any water quality or waste discharge standards.

Since the proposed project would disturb more than one acre of soil, a Construction General NPDES Permit would be required. Prior to construction, the District would be required to prepare a SWPPP and obtain a waste discharge identification number from the SWRCB. The SWPPP would describe a series of specific measures that would be included in the construction process to address erosion, accidental spills, and the quality of stormwater runoff. BMPs that must be implemented as part of a SWPPP can be grouped into two major categories: erosion and sediment control BMPs, and non-storm-water management and materials management BMPs. Erosion controls include practices to stabilize soil, to protect the soil in its existing location, and to prevent soil particles from migrating. Sediment controls are practices to collect soil particles after they have migrated but before the sediment leaves the site. Examples of sediment control BMPs are street sweeping, fiber rolls, silt fencing, gravel bags, sand bags, storm drain inlet protection, sediment traps, and stockpile management areas. Tracking controls prevent sediment from being tracked off-site via vehicles leaving the site to the extent practicable. A stabilized construction entrance not only limits the access points to the construction site but functions to partially remove sediment from vehicles prior to leaving the site.

The proposed project would include preparation and implementation of a water quality management plan pursuant to the Municipal Separate Storm Sewer Systems (MS4) Permit, specifying BMPs to be used during project design and operation to minimize stormwater pollution. The proposed project would be required to implement specific nonstructural (such as, litter/debris control program) and structural source control BMPs (such as, design and construct outdoor material storage and trash and waste storage areas to reduce pollution introduction) to address stormwater during operation. The proposed project would have stormwater drainage system on-site, which would include storm drain cleanouts, a slot channel trench drain system, in-line stormwater catch basins, and manholes. Project conformance with appropriate BMPs and compliance with

applicable local, state, and federal water quality regulations, in combination with design standards implemented by the District, would reduce potential water quality impacts during construction and operation to **less than significant**.

Impact 5.5-2: The proposed project would not 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 result in a substantial erosion or siltation on- or off-site. [Threshold HYD-3i]

Construction

The contractor would be responsible for preparation and implementation of a SWPPP by using a qualified SWPPP practitioner as defined in the Construction General NPDES Permit. The District's contractor would be required to prepare a SWPPP in order to comply with the RWQCB's Construction General NPDES Permit. The SWPPP would identify BMPs to be implemented during construction activities at the project site to minimize soil erosion and protect existing drainage systems. Compliance with existing regulations developed to minimize erosion and siltation would reduce this impact to a **less-than-significant** level.

Operation

During project operation, the proposed project is expected to increase the usage of the project site with more events to occur onsite. The increase in games, events, and persons onsite has the potential to result in minor erosion, such as along the slope on the eastern side of the project site. However, persons and vehicles' paths of travel will be limited to paved walkways and drive aisles, which would not cause erosion. The proposed sport field and track will be synthetic turf and track, which will also not generate erosion. Similar to existing conditions, the project site will be landscaped and have natural turf throughout the site (see Figure 3-8, *Phase 2 Site Plan*), which would have minimal erosion. Additionally, standard BMPs designed to prevent erosion both during and after construction would be implemented. The proposed project would install 4-inch and 8-inch SDR 35 sewers, and standard precast reinforced concrete sewer manholes per County standards within the project site. The proposed project is not anticipated to substantially alter the existing on-site drainage patterns; however, any alterations that would occur would be designed to meet local, state, and federal water quality standards and to ensure that stormwater flows do not result in substantial erosion or siltation.

The proposed project would not substantially alter the existing drainage pattern of the site, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site. Therefore, impacts would be **less than significant**.

Impact 5.5-3: The proposed project would not 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. [Threshold HYD-3ii]

The proposed project would have stormwater drainage system on-site, which would include storm drain cleanouts, a slot channel trench drain system, in-line stormwater catch basins, and manholes. The proposed project would also be required to comply with all local, state, and federals regulating stormwater runoff. Pursuant to Municipal Code § 85.11.030(C), Projects disturbing more than one acre are also required to have coverage under the State General Construction Permit issued by the State Water Resources Control Board and develop a Stormwater Pollution Prevention Plan (SWPPP). The District is required to abide by all provisions of the State General Construction Permit and obtain a Waste Discharge Identification (WDID) number prior to the issuance of building or grading permits when the disturbance is more than one acre. The proposed project would implement SWPPP during construction and operation consistent with state and local regulations, that would include the installation of BMPs. Each phase of proposed project would be required to meet the standards and requirements for stormwater retention, treatment, and discharge. The proposed project would not result in flooding on or off-site. Therefore, impacts would be **less than significant**.

Impact 5.5-4: The proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would 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. [Threshold HYD-3(iii)]

Construction

Construction of the Proposed Project would temporarily introduce potential sources of pollution on-site, such as oils, solvents, and gasoline, that are typical of construction activities. Equipment and potentially hazardous materials would be maintained and stored in accordance with manufacturer instructions. As described above, pursuant to Municipal Code § 85.11.030(C), Projects disturbing more than one acre are also required to have coverage under the State General Construction Permit issued by the State Water Resources Control Board and develop a Stormwater Pollution Prevention Plan (SWPPP). The District would abide by applicable provisions of the State General Construction Permit and obtain a Waste Discharge Identification (WDID) number prior to the issuance of building or grading permits when the disturbance is more than one acre. The Proposed Project would be required to prepare and implement a BMPs consistent with its Construction General NPDES Permit, Municipal NPDES Permit, and Construction SWPPP. BMPs include structural and non-structural strategies to minimize pollution of stormwater.

Therefore, compliance with federal, state, and local regulations and implementation of best management practices would ensure that the Proposed Project would not result in substantial additional sources of polluted runoff during construction. A **less than significant impact** related to substantial additional sources of polluted runoff would occur during each construction phase.

Operation

As described in Impact 5.5-2, the proposed project would not substantially alter the existing drainage pattern of the project site or the surrounding area. Drainage improvement plans would be prepared for the project, consistent with state, regional and local water quality requirements, as determined by the SWRCB, the San Bernardino County General Plan, and the San Bernardino County Municipal Code. The proposed project would result in the conversion of presently natural turf field and grassy areas to impermeable surfaces (including a synthetic sport field, emergency fire lane, and new building footprints), which has the potential to reduce current rates of rainwater absorption on the project site and contribute to runoff. However, the synthetic field would contain catch basins which would direct runoff to the existing drainage area onsite. Additionally, the proposed project would result in a minor increase of impervious surfaces onsite. Stormwater from the proposed project would flow to onsite stormwater facilities and to stormwater drainage system in the public right of way like existing conditions. Therefore, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The Proposed Project would implement SWPPP during construction and operation consistent with state and local regulations, that would include the installation of BMPs.

Therefore, compliance with federal, state, and local regulations and implementation of best management practices would ensure that the proposed project would not alter existing drainage patterns in a manner that would result in substantial additional sources of polluted runoff during operation. A **less than significant impact** related to substantial additional sources of polluted runoff would occur during the operation of the proposed project.

Impact 5.5-5: The proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would impede or redirect flood flows. [Threshold HYD-3(iv)]

As described in Impact 5.5-2, the proposed project would not substantially alter the existing drainage pattern of the project site or the surrounding area. Additionally, Redlands East Valley HS is in FEMA Flood Zone X, area with reduced flood risk due to a levee (FEMA 2008). Therefore, it is unlikely that flooding would occur onsite. Similar to existing conditions, the proposed project would include the construction and operation of a high school sport stadium, including a track and field and associated facilities. The proposed project does not include new solid walls, which may impede or redirect flood flows. The proposed project site is also located adjacent to areas within FEMA Flood Zone AE, which are areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Additionally, the City of Redlands, which is located approximately 0.25 mile west of the project site, is a participant in the NFIP; thus the proposed project would be in compliance with all applicable NFIP floodplain management building requirements, as described in Section 5.5.1.2 above. In the unlikely event that flood waters extend to the project site, the proposed project would not impact such flood flows. Therefore, construction and operation of the proposed project would not impede or redirect flood flows, and impacts would be **less than significant**.

5.5.4 Cumulative Impacts

Hydrology and Drainage

Cumulative projects within the Mill Creek Watershed and the Santa Ana Watershed could increase impervious areas and increase stormwater runoff rates. However, all projects within the watersheds would be required to comply with applicable regulation governing hydrology, such as prepare and implement water quality management plans and SWPPPs that include provisions for the capture and infiltration of runoff or the temporary detention of stormwater runoff so that post-development runoff discharges do not exceed pre-development runoff rates, in accordance with the NPDES permit and MS4 permit. Therefore, cumulative impacts would be less than significant, and proposed project impacts would not be cumulatively considerable.

Water Quality

Cumulative projects have the potential to generate pollutants during project construction and operation. All construction projects that disturb one acre or more of land would be required to prepare and implement SWPPPs in order to obtain coverage under the Construction General NPDES Permit. All projects within the watersheds would also be required to prepare and implement water quality management plans specifying BMPs that would be applied during project construction and operation to minimize water pollution from project operation. Therefore, cumulative impacts would be less than significant, and proposed project impacts would not be cumulatively considerable.

Flooding

Cumulative projects may be proposed in 100-year flood zones. Local jurisdictions regulate development in such zones both for public safety and to prevent changes to flood flows. The proposed project is within a FEMA Flood Zone X, area with reduced flood risk due to a levee (FEMA 2008). Zone X is an area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the 500-year flood level or reduced flood risk due to levee. The proposed project would not impede or redirect flood flows. Therefore, cumulative impacts would be less than significant, and proposed project impacts would not be cumulatively considerable.

5.5.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.5-1, 5.5-2, 5.5-3, 5.5-4, and 5.5-5.

5.5.6 Mitigation Measures

No mitigation measures required.

5.5.7 Level of Significance After Mitigation

Impacts would be less than significant.

5.5.8 References

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5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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5.6 NOISE

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the proposed project at Redlands East Valley High School to result in noise and vibration impacts at nearby noise sensitive receptors.

No comments were received in response to the Initial Study/Notice of Preparation (IS/NOP) in regard to noise. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.6.1 Environmental Setting

5.6.1.1 NOISE AND VIBRATION FUNDAMENTALS

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

Technical Terminology

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level

exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

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

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

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

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

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

Sound Fundamentals

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

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

Sound Measurement

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

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

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

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8, and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. These "L" values are typically used to demonstrate compliance for stationary noise sources with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

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

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA could result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. Table 5.6-1, *Typical Noise Levels*, shows typical noise levels from familiar noise sources.

Table 5.6-1 Typical Noise Levels

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

Source: Caltrans 2013.

Vibration Fundamentals

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

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

5.6.1.2 REGULATORY BACKGROUND

Federal

There are no federal regulations that are directly relevant to the proposed project.

State

General Plan Guidelines

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

City of Redlands and Sphere of Influence

City of Redlands General Plan

The Health Community Chapter of the City of Redlands General Plan includes noise and vibration Principles and Actions that aim to minimize the impact of noise and vibration sources found in the city. The relevant noise goals and policies are listed below:

Principles 7-P.41 Ensure that new development is compatible with the noise environment by continuing to use potential noise exposure as a criterion in land use planning.

Action 7-A.138 Continue to maintain performance standards in the Municipal code to ensure that noise generated by proposed projects is compatible with surrounding land uses.

The City of Redlands primary goal is to minimize the exposure of residents to unhealthy and excessive noise levels. The City has adopted noise and land use compatibility guidelines, shown in Table 5.6-2, *Community Noise and Land Use Compatibility: City of Redlands*.

Table 5.6-2 Community Noise and Land Use Compatibility: City of Redlands

Categories	Uses	<60	65	70	75	80	85	>
Residential	Single Family, Duplex Multiple Family	A	C	C	C	D	D	D
Residential	Mobile Home	A	C	C	C	D	D	D
Commercial (Regional, District)	Hotel, Motel, transient Lodging	A	A	B	B	C	C	D
Commercial (Regional, Village, District, Special)	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
Commercial, Industrial, Institutional	Office Building, research & Dev., Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial (Recreation), Institutional (Civic Center)	Amphitheater, Concert Hall, Auditorium, Meeting Hall	B	B	C	C	D	D	D
Commercial (Recreation)	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	A	B	B	B
Commercial (General, Special), Industrial, Institutional	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional (General)	Hospital, Church, Library, Schools Classroom	A	A	B	C	C	D	D
Open Space	Parks,	A	A	A	B	C	D	D
Open Space	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
Agriculture	Agriculture	A	A	A	A	A	A	A

Source: City of Redlands General Plan Table 7-10.

City of Redlands Municipal Code

The project site is within the Redlands Sphere of Influence, and therefore, the City of Redlands Municipal Code's noise and vibration noise standards and noise exemptions are applicable to the project.

Chapter 8.06, *Community Noise Control,* Title 8, *Health and Safety* provides exterior standards for all various land uses including residential. Section 8.06.07 states that the permissible exterior noise standards for single-family and multi-family residences is 60 dBA during the hours of 7:00 am to 10:00 pm and 50 dBA from 10:00 pm to 7:00 am. It also states that the noise levels shall not exceed:

- The noise standard for a cumulative period of more than 30 minutes (L_{50})

- The noise standard plus 5 dBA for a cumulative period of more than 15 minutes (L_{25})
- The noise standard plus 10 dBA for a cumulative period of more than 5 minutes (L_8)
- The noise standard plus 15 dBA for a cumulative period of more than 1 minute (L_2)
- The noise standard plus 20 dBA for any period of time (L_{max})

If the measured ambient exceeds any of the first four categories above, the allowable noise standard shall be adjusted in 5 dB increments in each category. If the ambient noise level exceeds the L_{max} category, the measured L_{max} shall become the new standard. Lastly, in the event the alleged offensive noise contains a steady, audible tone, or contains music or speech conveying informational content, the noise standards shall be reduced by 5 dBA.

Exemptions

Section 8306.120 (D) exempts noise from operations conducted on the grounds of any public or private elementary, intermediate or secondary school or colleges and universities.

Section 8306.120 (G) exempts construction noise (new construction, remodeling, rehabilitation or grading) during the hours of 7:00 am. To 6:00 p.m. on weekdays, including Saturdays. No construction shall take place at any time on Sundays or federal holidays. In addition to allowable construction hours, all motorized construction equipment used shall be equipped with functioning sound mufflers.

Vibration

Section 8.06.090 prohibits the operation of any device that creates vibration levels to exceed the vibration perception threshold of an individual, defined as 0.01 inches per second (in/sec), at or beyond the property boundary of the vibration source if on private property. If the vibration source in on a public space or public right of way, vibration levels shall not exceed the vibration perception threshold at one 150 feet from the vibration source.

5.6.1.3 EXISTING CONDITIONS

Ambient Noise Measurements

To determine baseline noise levels within the project site area, ambient noise monitoring was conducted in the vicinity of the Redlands East Valley High School on November 22, 2021. All measurements were short-term (15-minutes) and during the evening hours of 7:00 PM to 9:00 PM.

The primary noise source at all measurement locations was roadway traffic. Some intermittent urban and residential noise sources (such as dogs barking) and aircraft overflights also contributed to the overall noise environment. Meteorological conditions during the measurement period were favorable for outdoor sound measurements and were noted to be representative of the typical conditions for the season. Generally, weather conditions included partly cloudy skies with evening temperatures 58 degrees Fahrenheit (°F) with calm winds averaging less than 1 mile per hour (mph). The sound level meter was equipped with a windscreen during all measurements.

The sound level meter used (Larson Davis LxT) for noise monitoring satisfies the American National Standards Institute (ANSI) standard for Type 1 instrumentation.[1] The sound level meter was set to "slow" response and "A" weighting (dBA). The meter was calibrated prior to and after the monitoring period. All measurements were at least 5 feet above the ground and away from reflective surfaces. Approximate noise measurement locations are described below and shown in Figure 5.6-1, *Approximate Noise Monitoring Locations*, and results are summarized in Table 5.6-3.

- **Short-Term Location 1 (ST-1)** was along East Colton Avenue near the property line of 10490 Beryl Avenue residence, approximately 25 feet north from the nearest westbound travel lane centerline. A 15-minute noise measurement began at 8:00 PM on Monday, November 22, 2021. The noise environment is characterized primarily by traffic noise along. Traffic noise levels along East Colton Avenue generally ranged from 65 dBA to 71 dBA.

- **Short-Term Location 2 (ST-2)** was along Opal Avenue and near the 30692 Independence Avenue residence, approximately 25 feet east from the nearest southbound travel lane centerline. A 15-minute noise measurement began at 8:29 PM on Monday, November 22, 2021. The noise environment is characterized primarily by traffic noise on East Colton Avenue. Secondary noise sources were minimal at this location. Traffic noise levels along Opal Avenue and East Colton Avenue generally ranged from 50 dBA (East Colton Avenue) to 71 dBA (Opal Avenue).

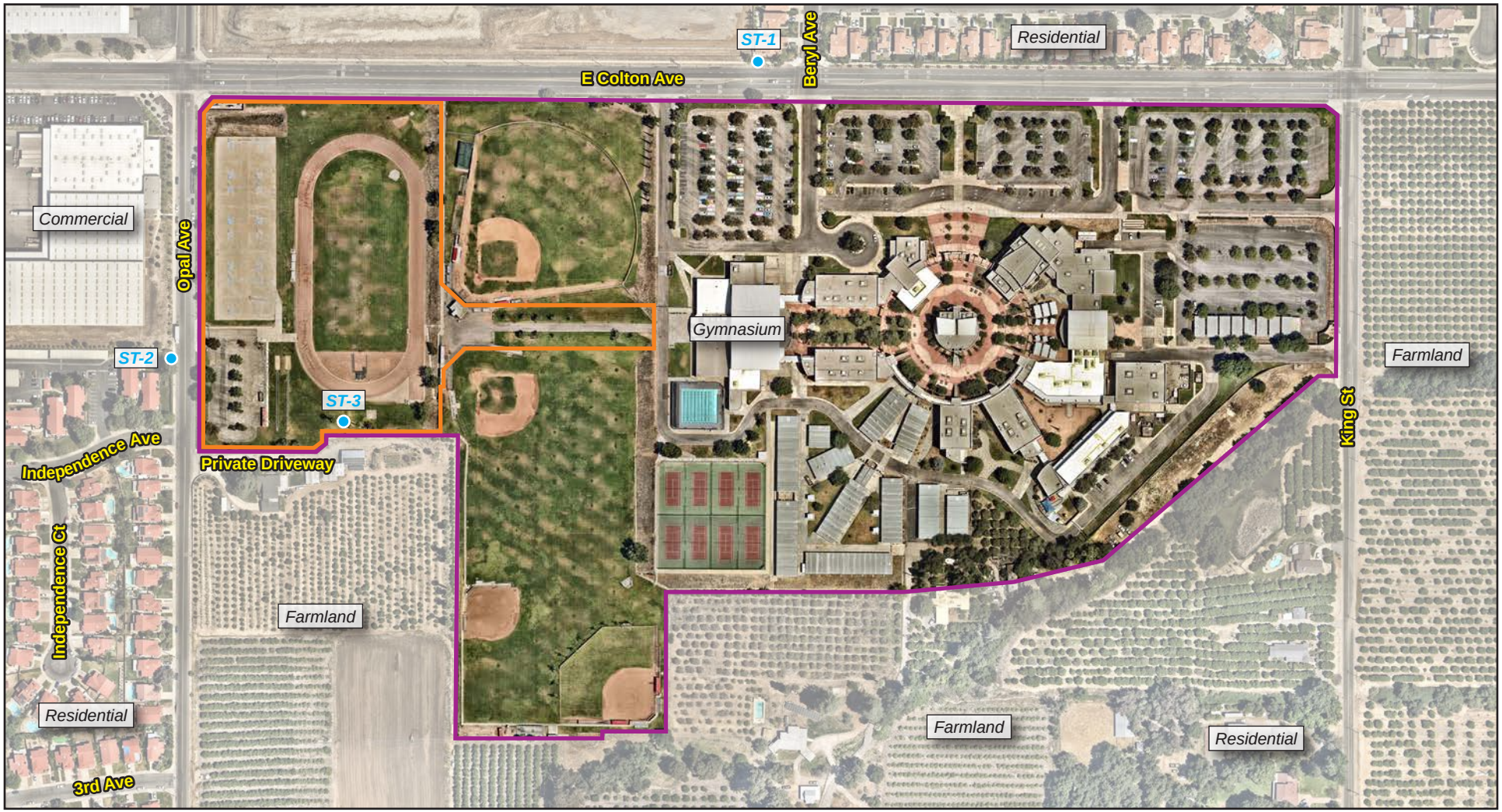
- **Short-Term Location 3 (ST-3)** was along the project site's southern property line, adjacent to the 10637 Opal Avenue residence. A 15-minute noise measurement began at 7:32 PM on Monday, November 22, 2021. The noise environment is characterized primarily by traffic noise along East Colton Avenue and Opal Avenue. Traffic noise generally ranged from 45 dBA to 47 dBA. Secondary noise sources included neighborhood dogs barking and aircraft overflights which were both observed to be 45 dBA or less.

Table 5.6-3 Short-Term Noise Measurements Summary in A-weighted Sound Levels

Monitoring Location	Description	15-minute Noise Level, dBA						
		L_{eq}	L_{max}	L_{min}	L_{50}	L_{25}	L_8	L_2
ST-1	East Colton Avenue near 10490 Beryl Avenue 11/22/2021, 8:29 PM	56.1	70.3	38.1	45.5	52.8	61.8	66.3
ST-2	Opal Avenue near 30692 Independence Avenue property line. 11/22/2021, 8:00 PM	57.5	76.9	40.1	46.7	49.9	58.0	68.9
ST- 3	Redlands East Valley High School near 10637 Opal Avenue 11/22/2021, 7:32 PM	44.1	58.7	36.8	42.7	45.1	47.2	49.5

[1] Monitoring of ambient noise was performed using Larson-Davis model LxT sound level meters.

Figure 5.6-1 - Approximate Noise Monitoring Locations



Source: Nearmap, 2021

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Sensitive Receptors

Certain land uses, such as residences, schools, and hospitals, are particularly sensitive to noise and vibration. Sensitive noise receptors include residences, senior housing, schools, places of worship, and recreational areas. These uses are regarded as sensitive because they are where citizens most frequently engage in activities which are likely to be disturbed by noise, such as reading, studying, sleeping, resting, working from home, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not particularly sensitive to noise. However, nonresidential structures are still analyzed for potential vibration impacts, such as architectural damage to a structure due to construction or demolition activities in close proximity. The nearest off-site noise-sensitive receptors to the proposed project are residential uses to the west and a single-family home adjacent to the south. More residences are located further to the northeast across East Colton Avenue. On-campus noise sensitive receptors include school classrooms that are analyzed for temporary construction noise impacts.

5.6.2 Thresholds of Significance

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

N-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

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

N-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

5.6.2.1 CONSTRUCTION NOISE THRESHOLDS

The Federal Transit Authority (FTA) provides criteria for construction noise. The FTA criterion of 80 dBA $L_{eq(8hr)}$ for residential daytime is used in this analysis. For onsite receptors which include classrooms, the California Green Building Standards Code (CALGreen) criterion of 50 dBA $L_{eq(1hr)}$ for interior noise is used.

5.6.2.2 TRANSPORTATION NOISE THRESHOLDS

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an exterior environment. Note that a doubling of traffic flows (i.e., 10,000 vehicles per day to 20,000 per day) would be needed to create a 3 dBA CNEL increase in traffic-generated noise levels. Based on this, the following thresholds of significance similar to those recommended by the

Federal Aviation Administration, are used to assess traffic noise impacts at sensitive receptor locations. A significant impact would occur if traffic noise increase would exceed:

- 1.5 dBA in ambient noise environments of 65 dBA CNEL and higher;
- 3 dBA in ambient noise environments of 60 to 64 dBA CNEL; or
- 5 dBA in ambient noise environments of less than 60 dBA CNEL.

5.6.2.3 STATIONARY NOISE THRESHOLDS

As discussed above in Section 5.6.1.2, *Regulatory Background*, the City's noise ordinance establishes exterior noise standards at receiving residential land uses. However, Section 8306.120 (D) exempts noise from operations conducted on the grounds of any public or private elementary, intermediate or secondary school or colleges and universities. Operation of the proposed project could still cause a periodic increase in ambient noise levels. For periodic increases in ambient noise, such as due to proposed stadium events, a threshold of 10 dBA is used.

5.6.2.4 VIBRATION THRESHOLDS

Vibration Annoyance

As mentioned above, the project site is within the Redlands Sphere of influence and the City of Redlands establishes a vibration perception threshold (also referred to as vibration annoyance) of 0.01 in/sec, which is equivalent to 80 VdB.

Architectural Damage

As mentioned above, the project site is within the Redlands Sphere of influence and the City of Redlands does not have specific limits for vibration-induced architectural damage related to construction activities. The FTA provides criteria for acceptable levels of groundborne vibration for various types of buildings. Table 5.6-4, *Groundborne Vibration Criteria: Architectural Damage*, summarizes the thresholds below, which are used to determine impact significance.

Table 5.6-4 Groundborne Vibration Criteria: Architectural Damage

	Building Category	PPV (in/sec)
I.	Reinforced concrete, steel, or timber (no plaster)	0.5
II.	Engineered concrete and masonry (no plaster)	0.3
III.	Non-engineered timber and masonry buildings	0.2
IV.	Buildings extremely susceptible to vibration damage	0.12

Source: FTA 2018.
PPV = peak particle velocity

5.6.3 Environmental Impacts

5.6.3.1 METHODOLOGY

Construction noise modeling was conducted using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). Traffic noise increases were estimated using average daily traffic (ADT) along study roadway segments provided by Garland Associates (see Appendix E).[2] SoundPLAN modeling software is used for stadium noise modeling. Vibration impacts are assessed using methodology included in the FTA guidance document on noise and vibration impact assessment (FTA 2018).

5.6.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.6-1: Construction activities would result in temporary noise increases in the vicinity of the proposed project that would not exceed standards. [Threshold N-1]

Two types of short-term noise impacts could occur during construction: (1) mobile-source noise from transport of workers, material deliveries, and debris and soil haul and (2) stationary-source noise from use of construction equipment. Construction is anticipated to start in March 2022 and be completed November 2022.

Construction Vehicles

The transport of workers and materials to and from the construction site would incrementally increase noise levels along roadways in the vicinity of the project site. Individual construction vehicle pass-bys and haul truck trips may create momentary noise levels of up to approximately 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be infrequent and short lived.

Construction generates temporary worker and vendor trips, and the number of trips vary by activity phase. Construction vehicles would generate up to 126 daily vendor and worker trips during building construction and asphalt paving. The proposed project would generate a maximum of 25 daily haul truck trips during asphalt demolition debris haul for 10 workdays. Site access would be through East Colton Avenue and Opal Avenue. Existing daily volumes along Opal Avenue and East Colton in the vicinity of the project site range between 1,300 and 6,000 daily trips (Garland Associates, 2021). When compared to existing daily trips, worker and vendor trips would result in a noise increase less than 0.5 dBA. The increase in haul truck trips would also result in a noise increase of less than 0.5 dBA CNEL. Therefore, noise impacts related to temporary construction vehicle trips would be **less than significant**.

[2] Traffic noise increase = 10*Log(existing plus project volume/existing volume); Cumulative increase = 10*Log(future plus project volume/existing volume).

Construction Noise

Noise generated by on-site construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each phase of construction involves different types of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest several pieces of equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of up to 85 dBA at 50 feet. However, overall noise emissions vary considerably, depending on the specific construction activity performed at any given moment. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the project site with different loads and power requirements.

Noise levels were calculated at spatially averaged distances from each activity phase (i.e., from the acoustical center of each construction activity phase; paving, grading, building construction, demolition etc.,) to the property line of the nearest receptors. Each acoustical center for construction activity phases best represents the L_{eq} (noise equivalent potential average) construction-related noise levels associated at the various sensitive receptors.

Construction phase activity information provided by the applicant to estimate construction noise using the FHWA RCNM. The average noise produced during each construction phase is determined by combining the L_{eq} contributions from the three loudest pieces of construction equipment, while accounting for the ongoing time variations of noise emissions (commonly referred to as the usage factor).

Off-site Receptors

The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 5.6-5, *Off-site Project-Related Construction Noise*. As shown in Table 5.6-5, construction-related noise levels would not exceed the 80 dBA $L_{eq(8hr)}$ threshold at the nearest off-site sensitive receptors. RCNM modeling input and output worksheets are included in Appendix C.

In addition to the modeled activity phases in the table below, landscaping would include the installation of new trees near the perimeter of the project site. This would also likely generate noise levels above the existing ambient, however, is anticipated to take place over three workdays. Noise disturbances due to finish and landscaping activities would be short-lived and minimal. Therefore, overall construction noise impacts would be **less than significant**.

Table 5.6-5 Off-site Project-Related Construction Noise at Sensitive Receptors

Construction Activity Phase	L_{eq} dBA			
	RCNM Reference Noise Level	Residence to south	Residences to west	Residences to northeast
Distance in feet	*50*	*475*	*500*	*1,000*
Site Preparation	80	60	60	54
Rough Grading	81	61	61	54
Fine Grading	81	61	61	54
Distance in feet	*50*	*NA*	*65*	*760*
Utility Trenching	81	NA	79	58
Distance in feet	*50*	*190*	*240*	*850*
Building Construction	81	70	68	57
Architectural Coating	74	62	60	49
Distance in feet	*50*	*85*	*360*	*1,250*
Asphalt Paving	77	72	60	49
Distance in feet	*50*	*190*	*600*	*970*
Asphalt Demolition	85	73	63	59
Maximum L_{eq} dBA	**85**	**73**	**79**	**59**

Notes: Calculations performed with the FHWA's RCNM software are included in Appendix C.
NA= Not Applicable
Noise levels rounded to the nearest whole number.

Campus Receptors

Under the CALGreen performance method for non-residential uses, a proposed project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq(1hr)}$. While this criterion is intended for use during the design build portion of a new project and not necessarily for the effect of project construction on sensitive receptors, an interior noise threshold of 50 dBA L_{eq} is reasonable to use to assess the potential impact to the Redland East Valley HS's learning environment. This interior noise threshold is also comparable to US EPA recommended limits for potential speech interference of 45 – 60 dBA (US EPA 1974). The nearest campus receptors are classrooms located approximately 750 feet east of the project site boundary. At that distance, noise from various construction activity phases would attenuate to 61 dBA L_{eq} or less. That is a conservative estimate, as it assumes all construction would occur at the nearest edge of the project site to the classrooms. A building's exterior-to-interior noise transmission loss is typically 25 – 30 dBA with windows closed and 15 dBA with windows open. Interior classroom noise levels are, therefore, estimated to be at least 46 dBA L_{eq} or less, which would not exceed the threshold of 50 dBA L_{eq}. Therefore, temporary construction noise impacts to campus receptors would be **less than significant**.

Impact 5.6-2 Project implementation would result in long-term operation-related noise that would cause substantial increases in ambient noise levels. [Threshold N-1]

Traffic Noise

The proposed project would generate up to 1,800 daily trips, periodically, during maximum capacity events and games, which are projected to occur up to five times per year. These maximum trips were distributed

between study roadway segments, and daily segment volumes for Existing, Existing Plus Project, Future 2026 No Project and Future 2026 Plus Project scenarios were provided by Garland Associates. As stated above in Section 5.6.2, *Thresholds of Significant*, the project would have a significant impact if traffic noise increase would exceed:

- 1.5 dBA in ambient noise environments of 65 dBA CNEL and higher;
- 3 dBA in ambient noise environments of 60 to 64 dBA CNEL; or
- 5 dBA in ambient noise environments of less than 60 dBA CNEL.

As shown in Table 5.6-6, traffic noise increases due to implementation of the proposed project would not exceed 1.5 dBA CNEL. Therefore, impacts would be less than significant.

Table 5.6-6 Traffic Noise Levels for Project and Cumulative Buildout Conditions

	Traffic Volumes (ADT)				Traffic Noise Increase (dBA CNEL)	
Roadway Segment	Existing No Project	Existing Plus Project	Future 2026 No Project	Future 2026 With Project	Project Noise Increase	Cumulative Plus Project Noise Increase
Colton Avenue						
West of Wabash Avenue	6,000	6,360	6,600	6,960	0.3	0.6
Wabash to Opal Avenue	4,800	5,610	5,300	6,110	0.7	1.0
Opal Avenue to Beryl Avenue	5,200	6,240	5,700	6,740	0.8	1.1
Beryl Avenue to Agate Avenue	4,700	4,990	5,200	5,490	0.3	0.7
Agate Avenue to Crafton Avenue	3,800	4,090	4,200	4,490	0.3	0.7
East of Crafton Avenue	2,200	2,290	2,400	2,490	0.2	0.5
Mentone Boulevard						
West of Opal Avenue	20,000	20,270	22,100	22,370	0.1	0.5
Opal Avenue to Beryl Avenue	19,100	19,170	21,100	21,170	0.0	0.4
Beryl Avenue to Agate Avenue	18,300	18,340	20,200	20,240	0.0	0.4
East of Agate Avenue	17,400	17,490	19,200	19,290	0.0	0.4
Citrus Avenue						
West of Opal Avenue	3,000	3,180	3,300	3,480	0.3	0.6
Opal Avenue to Agate Avenue	3,300	3,320	3,600	3,620	0.0	0.4
East of Agate Avenue	3,200	3,290	3,500	3,590	0.1	0.5
Wabash Avenue						
North of Colton Avenue	7,900	8,170	8,700	8,970	0.1	0.6
South of Colton Avenue	6,600	6,780	7,300	7,480	0.1	0.5
Opal Avenue						
North of Mentone Boulevard	2,300	2,320	2,500	2,520	0.0	0.4
Mentone Boulevard to Colton Avenue	1,300	1,520	1,400	1,620	0.7	1.0
Colton Avenue to Citrus	1,600	1,820	1,800	2,020	0.6	1.0
South of Citrus	1,300	1,320	1,400	1,420	0.1	0.4
Beryl Avenue						
North of Mentone	1,900	1,920	2,100	2,120	0.0	0.5
Mentone to Colton	1,200	1,330	1,300	1,430	0.4	0.8

Table 5.6-6 Traffic Noise Levels for Project and Cumulative Buildout Conditions

Roadway Segment	Traffic Volumes (ADT)				Traffic Noise Increase (dBA CNEL)	
	Existing No Project	Existing Plus Project	Future 2026 No Project	Future 2026 With Project	Project Noise Increase	Cumulative Plus Project Noise Increase
Agate Avenue						
North of Mentone	2,300	2,320	2,500	2,520	0.0	0.4
Mentone to Colton	1,900	1,970	2,100	2,170	0.2	0.6
Colton to Citrus	1,400	1,490	1,500	1,590	0.3	0.6
South of Citrus	1,000	1,020	1,100	1,120	0.1	0.5
Crafton Avenue						
North of Colton	6,800	6,980	7,500	7,680	0.1	0.5
South of Colton	6,700	6,720	7,400	7,420	0.0	0.4
Maximum CNEL Increase					**0.8**	**1.1**

Source: Garland Associates 2021.

Stadium Noise

Operational stationary noise sources from the proposed stadium PA system and crowd noise were modeled using the SoundPLAN computer program. SoundPLAN uses industry-accepted propagation algorithms based on International Organization for Standardization (ISO) and ÖAL-28 standards for outdoor sound propagation. The modeling calculations account for classical sound wave divergence (spherical spreading loss with adjustments for source directivity from point sources) plus attenuation factors due to air absorption and ground effects. Additionally, SoundPLAN provides for other correction factors, including level increases due to reflections, source directivity, and source tonality. SoundPLAN modeling noise contours can be seen in Figure 5.6-2, *Future Stadium Noise Contours*.

As summarized under Section 5.6.1.2, *Regulatory Background*, activities conducted in any public or private elementary, secondary, or college and universities are exempted from the Municipal Code exterior noise standards. Since activities conducted at the proposed stadium would be exempt from the Municipal Code standards, for periodic increases in ambient noise levels from the proposed stadium events, a threshold of 10 dBA above the ambient is used, which is generally perceived to be a doubling of loudness. Above a 10 dBA increase, periodic events (such as stadium events) would be considered significant.

Noise modeling was conducted for residential locations closest to the project site. The proposed sports field is in an area that is mostly flat. Ongoing operations of the proposed project would generate noise associated with crowds and amplified music and speech from the proposed PA system, which would require use of lights and sound in the evening hours. The future bleacher and PA noise was modeled assuming project operational noise between the hours of 7:00 PM and 10:00 PM. The operational noise analysis assumed full capacity of the stadium. Detailed information about stadium events is included in Chapter 3, *Project Description*. The field would have lighting mounted on four poles. Two of the poles would be located on the home (east) side of the stadium with the remaining two on the visitor (west) side of the stadium. Speakers are proposed to be mounted on all four light poles. Four speakers, two on each light pole, would be mounted at a

height of approximately 42 feet above the track on the home side and two speakers, one on each pole would be mounted visitor's side. Based on available information provided by the District, home bleachers would have a height of 23 feet with a 2,000-seating capacity. Visitor bleachers would have a height of 14 feet with a 1,000-seating capacity. Each speaker set was modeled as an individual point source, and both bleachers were modeled as area sources. The SoundPLAN modeling outputs are included in Appendix C.

As shown in Table 5.6-7 and Table 5.6-8, during short-term noise monitoring in the project vicinity, noise levels ranged from approximately 44.1 to 57.5 dBA L_{eq}. Results of SoundPLAN modeling indicate that future operational noise levels from a maximum capacity stadium event are predicted to increase ambient noise levels up to 21.4 dBA L_{eq} at the second story of the adjacent southern residential property line represented by ST-3 (see Figure 5.6-1). This would exceed the significance threshold of 10 dBA for periodic events. The estimated increase would be less than 10 dBA at all other residences. Special events of less than full capacity would be expected to increase ambient noise levels to a lesser degree. Therefore, because operational noise from maximum capacity events would cause a periodic substantial increase in ambient noise levels at the residence to the south, this impact would be considered **potentially significant**.

Table 5.6-7 Project Stadium Noise Levels 1st Story (dBA)

Location	Levels in dBA			Potentially Significant (Increase > 10 dBA)?
	Measured Evening L_{50}	Modeled L_{eq}	Increase, dBA	
Residential along Colton Avenue (ST-1)	56.1	56.9	0.8	No
Residential along Opal Avenue (ST-2)	57.5	63.8	6.3	No
Adjacent residences to south, 10637 Opal Ave (ST-3)	44.1	64.1	20.0	Yes

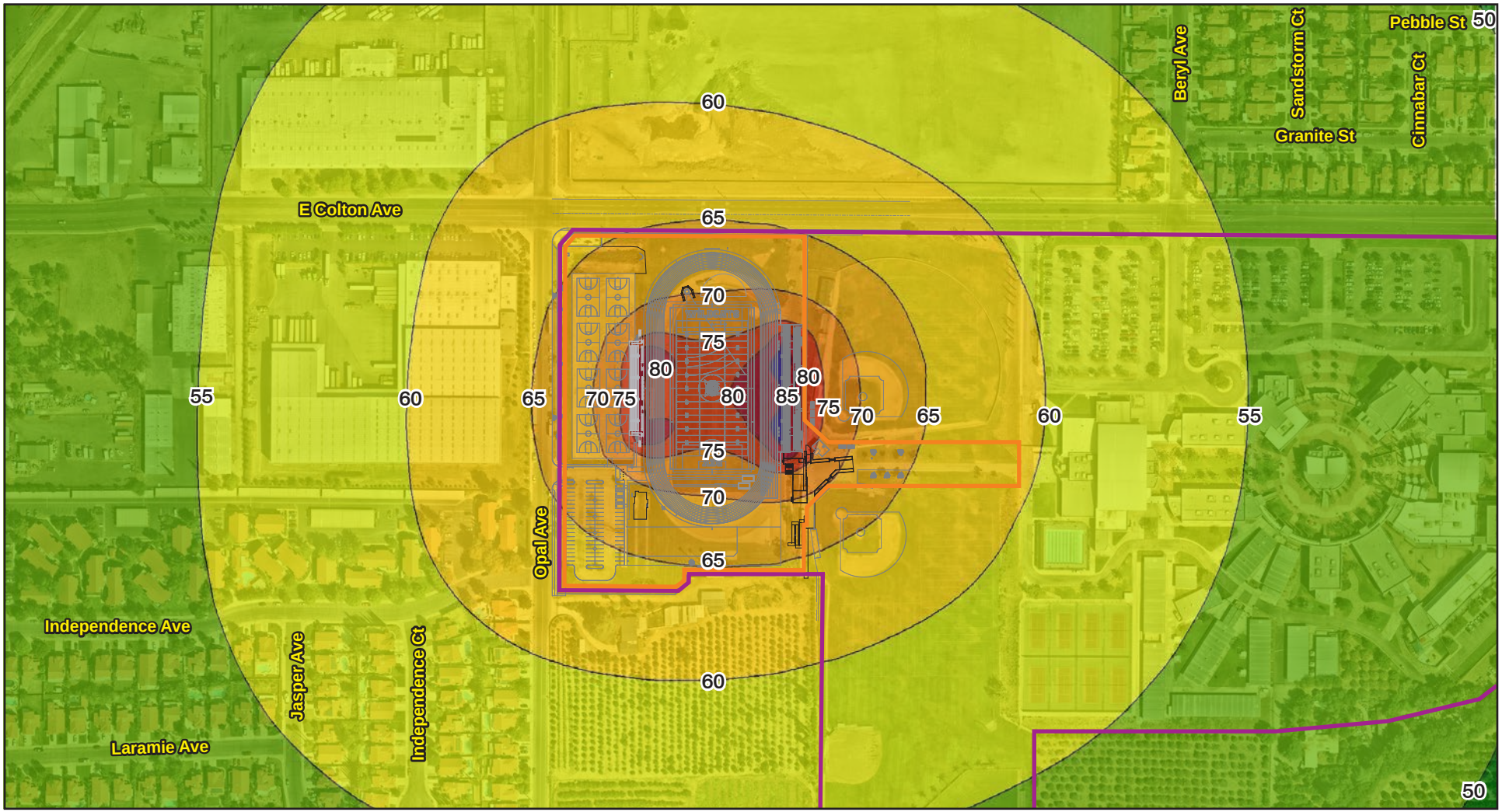
Source: Modeled with SoundPLAN version 8.2 Software. Modeling outputs in Appendix C.

Table 5.6-8 Project Stadium Noise Levels 2nd Story (dBA)

Location	Levels in dBA			Potentially Significant (Increase > 10 dBA)?
	Measured Evening L_{50}	Modeled L_{eq}	Increase, dBA	
ST-1, Residential along Colton Avenue	56.1	58.2	2.1	No
ST-2, Residential along Opal Avenue	57.5	64.9	7.4	No
ST-3, Adjacent residences to south, 10637 Opal Ave	44.1	65.5	21.4	Yes

Source: Modeled with SoundPLAN version 8.2 Software. Modeling outputs in Appendix C.

Figure 5.6-2 - Future Stadium Noise Contours



Source: Nearmap, 2021; PlaceWorks, 2021; PCH Architects, 2021

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Impact 5.6-3: The project would not create excessive groundborne vibration and groundborne noise. [Threshold N-2]

Construction Vibration

Potential vibration impacts associated with development projects are usually related to the use of heavy construction equipment during the demolition and grading phases of construction. Construction can generate varying degrees of ground vibration depending on the construction procedures and equipment. Construction equipment generates vibration that spreads through the ground and diminishes with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures. Pile driving is not proposed.

Vibration Annoyance

As discussed above in Section 5.6.2, *Thresholds of Significant*, a significant impact would occur if vibration annoyance criterion of 80 VdB is exceeded at residential receptors. Vibration annoyance would be predominantly from demotion and grading phases. Table 5.6-9, *Vibration Levels for Typical Construction Equipment (VdB)*, shows VdB levels at a reference distance of 25 feet and attenuated levels at the nearest sensitive receptors.

Table 5.6-9 Vibration Levels for Typical Construction Equipment (VdB)

	Levels in VdB			
Construction Activity Phase	FTA Reference Level at 25 feet	Residence to south at 475 feet	Residences to west at 500 feet	Residences to northeast at 1,000 feet
Clam shovel	94	56	55	46
Hoe Ram	87	49	48	39
Large Bulldozer	87	49	48	39
Caisson Drilling	87	49	48	39
Loaded Trucks	86	48	47	38
Jackhammer	79	41	40	31

Source: FTA 2018. Calculations included in Appendix C.
Notes: Distances measured from the acoustical center of construction site to sensitive receptor property line. Vibration levels rounded to the nearest whole number.

In addition, some vibration would also be generated during paving of the new emergency access road south of the proposed track and sport field. This paving however would be minimal and is estimated to last approximately 3 workdays quickly progressing in a linear fashion. As shown in Table 5.6-9, VdB levels from major construction phases such as demolition and grading would attenuate to 56 VdB or less, which is below the threshold of 80 VdB. Therefore, impacts would be **less than significant**.

Architectural Damage[3]

The FTA criteria for architectural damage varies based on the building category. The applicable FTA threshold for the surrounding off-site commercial structures is 0.30 in/sec PPV, and the applicable FTA threshold for residential uses is 0.20 in/sec PPV. At a distance greater than approximately 20 feet, construction-generated vibration levels at the commercial buildings would be less than the 0.30 in/sec PPV threshold, and at a distance greater than approximately 25 feet, vibration levels would be less than the 0.20 in/sec PPV threshold.

The nearest off-site commercial structure is the P&R Paper Supply Company building, approximately 250 feet west of the project site's nearest area of disturbance, and the nearest residential structure is approximately 78 feet south of the project site. Table 5.6-10, *Vibration Impact Levels for Typical Construction Equipment (in/sec PPV)*, summarizes vibration levels at the various receptors. As shown in the table, vibration levels would not exceed the thresholds of 0.30 in/sec PPV for commercial nor the 0.20 in/sec PPV for residential at the nearest receptor. Impacts would be **less than significant**.

Table 5.6-10 Vibration Levels for Typical Construction Equipment (in/sec PPV)

Equipment	Levels in in/sec, PPV			
	Reference levels at 25 feet	Residences to south at 78 feet[1]	Residences to west at 250 feet[1]	Commercial to west at 250 feet[1]
Vibratory Roller/Clam Shovel	0.21	0.038	0.007	0.007
Hoe Ram	0.089	0.016	0.003	0.003
Large Bulldozer	0.089	0.016	0.003	0.003
Caisson Drilling	0.089	0.016	0.003	0.003
Loaded Trucks	0.076	0.014	0.002	0.002
Jackhammer	0.035	0.006	0.001	0.001
Small Bulldozer	0.003	0.001	0.000	0.000

Source: FTA 2018. Calculations included in Appendix C.
[1] As measured from the nearest edge of construction site to structure/building facade.

Operational Vibration

Operation of the proposed project would include the scholastic and school sport-related uses. Occasionally the project site may be used by community groups consistent with the Civic Center Act and District policy for community functions consistent with existing conditions. The types of uses that would occur at the project site do not generate significant vibration. Thus, operation of the proposed project would not create or cause any significant vibration impacts, and impacts would be **less than significant**.

[3] Nonresidential structures are analyzed for potential vibration impacts in addition to residential structures for vibration damage impacts.

Impact 5.6-4: The proximity of the project site to an airport or airstrip would not result in exposure of future workers to excessive airport-related noise. [Threshold N-3]

The nearest airport or airstrip to the proposed project is Redlands Municipal Airport, approximately 1.5 miles to the northwest. The Redlands Municipal Airport Land Use Compatibility Plan's Noise Contour Map shows that the project site would be outside the 60 CNEL noise contour. Therefore, the proposed project would not expose future workers in the project site area to excessive aircraft noise. **No impact** would occur.

5.6.4 Cumulative Impacts

Operation

There are no other nearby sources of stationary noise in the project area that would significantly contribute to the ambient noise environment during games and events at the proposed stadium. Therefore, there would be **no cumulative operational stationary noise impacts**.

A significant cumulative traffic noise increase would be identified if project traffic were calculated to contribute 1 dBA or more under Cumulative Plus Project conditions to a significant traffic noise increase over existing conditions. That is, if a cumulative traffic noise increase greater than 1.5 dBA, 3 dBA, or 5 dBA relative to the existing environment significance threshold (less than 60 CNEL dBA, 60 to 65 CNEL dBA, greater than 65 CNEL dBA, respectively) is calculated, and the relative contribution from project traffic is calculated to contribute 1 dBA or more to this cumulative impact, it would be considered cumulatively considerable. As shown in Table 5.6-6, the cumulative increase would be up to 1.1 dBA, which is less than the most stringent significance threshold of 1.5 dBA CNEL. Therefore, cumulative traffic noise impacts would be **less than significant**.

Construction

Currently there is one known planned and approved project near the project site, 800 Opal, LLC Manufacturing/Warehouse Project, which is directly across Colton Avenue from the project site. Construction of the 800 Opal LLC Manufacturing/Warehouse Project may overlap with construction of the proposed project. Based on aerial imagery and a visit to the proposed project site, the grading for the 800 Opal site was nearing completion. By the time that the construction of the proposed project is expected to start, grading of the 800 Opal site is anticipated to be complete. Subsequent construction phases such as building construction and architectural finishes may overlap with the construction of the proposed project. Subsequent phases proceeding grading emit lower noise emissions. Because mass grading of the site would be completed before the construction of the stadium and because there is only one other known and approved project in the vicinity of the project site, cumulative construction noise would **be less than significant.**

5.6.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.6-1, 5.6-3, and 5.6-4.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.6-2 Noise generated by the proposed stadium would generate noise levels of up to 21 dBA above the existing ambient at the adjacent residence to the south, exceeding the 10 dBA threshold.

5.6.6 Mitigation Measures

Impact 5.6-2

N-1 Prior to holding the first spectator event, the District shall develop and enforce a good-neighbor policy for sports field events. Signs shall be erected at entry points that state prohibited activities during an event (e.g., use of air horns, unapproved audio amplification systems, bleacher foot-stomping, loud activity in parking lots upon exiting the field), and events shall be monitored by the District staff.

During subsequent design phases of the bleachers and PA system, the District's sound system contractor shall create a Stadium Sound System Design Plan. The project's sound system design goal should be to optimize conveying information to the event attendees while minimizing off-site spill-over effects.

Prior to the first sports field event, the public address system contractor shall perform a system check to verify appropriate sound levels in the seating areas, as well as minimized spill-over sound levels into the adjacent community areas

N-2 Three months prior to holding the first spectator event, the School District shall have completed an offer to the homeowner of 10637 Opal Avenue for the installation of upgraded windows (first and second story windows) to provide additional noise attenuation. Additional acoustic investigations shall be conducted to define the house and windows that would substantially benefit from the installation of upgraded windows (e.g., existing double-paned windows would not warrant replacement). Working with qualified contractor(s), the District shall complete cost estimates for the house, and deposit such funds in an escrow account. The homeowner will be responsible for contracting with qualified contractors and funds not exceeding the cost estimate shall be released by the escrow company upon receipt of a signed improvement contract.

Mitigation Measure Considered but Rejected

N-3 A solid barrier shall be constructed along the adjacent residential property line to the south (10637 Opal Avenue). The barrier would be continuous from grade to top with a height of 15 feet, and have no cracks or gaps, and have a minimum surface density of four pounds per square foot (e.g., a masonry wall).

5.6.7 Level of Significance After Mitigation

Implementation of Mitigation Measure N-3 including the noise barrier would reduce noise levels at adjacent residence at 10637 Opal Avenue on the first and second floors by approximately 15 dBA. With Mitigation Measure N-3, noise levels on the second floor of the single-family residential unit are projected to reach up to 50.5 dBA L_{eq}, which would periodically increase existing ambient noise levels by approximately 6.4 dBA. This would not exceed the significance threshold of a 10 dBA periodic noise increase. However, Mitigation Measure N-3 would be highly undesirable for other reasons. The construction of a 15-foot wall would significantly impact the adjacent homeowner's use and enjoyment of their home and property, obstruct views along Opal Avenue and potentially be misused by graffiti artists.

While the Mitigation Measures N-1 and N-2 are feasible and would reduce interior noise levels during games and events, these mitigation measures would not mitigate exterior noise levels at the property line. Therefore, even mitigation, periodic noise increases at the single-family residence at 10627 Opal Avenue from evening stadium use and events/games would remain **significant and unavoidable**.

5.6.8 References

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5. Environmental Analysis
NOISE

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5.7 PUBLIC SERVICES

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the Redland East Valley High School Stadium Project (proposed project) to public services, including fire protection and emergency services and police protection. Utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in the Initial Study. The Initial Study in Appendix A substantiates that impacts associated with public services would be less than significant for schools, parks, and libraries. These topics are not addressed in the following analysis.

The analysis in this section is based in part on the service provider responses in Appendix D of this DEIR.

One comment letter was received in response to the Initial Study/Notice of Preparation (IS/NOP) circulated for the proposed project— from the San Bernardino County Fire Protection District's Office of the Fire Marshal, Community Safety; however, the Deputy Fire Marshal did not have any comments on the IS/NOP. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.7.1 Environmental Setting

5.7.1.1 REGULATORY BACKGROUND

Federal, state, and local laws, regulations, plans, or guidelines regarding fire, emergency, and police services that are potentially applicable to the proposed project are summarized in this section.

International Fire Code

The International Fire Code (IFC) regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes. The IFC includes general and specialized technical fire and life safety regulations addressing fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire, and explosion hazards safety, use and storage of hazardous materials, protection of emergency responders, industrial processes, and many other topics. The IFC is issued by the International Code Council, an international organization of building officials.

State

California Fire Code

The California Fire Code (CFC; California Code of Regulations, Title 24, Part 9) is based on the 2018 IFC and includes amendments from the State of California fully integrated into the code. The CFC contains fire-safety-related building standards that are referenced in other parts of Title 24 of the California Code of Regulations. The CFC is updated once every three years, and the 2019 CFC took effect on January 1, 2020.

California Health and Safety Code

Sections 13000 et seq. of the California Health and Safety Code include fire regulations for building standards (also in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Occupational Safety and Health Administration

In accordance with the California Code of Regulations, Title 8, Sections 1270, "Fire Prevention," and 6773, "Fire Protection and Fire Fighting Equipment," the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include but are not limited to guidelines on the handling of highly combustible materials; firehouse sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Regional

San Bernardino Countywide Plan

Personal and Property Protection Element

San Bernardino County provides fire prevention services, fire protection for wildfires and urban fires, and emergency medical response in unincorporated areas; portions of incorporated jurisdictions included in the district; and in some incorporated jurisdictions under contract. The County plans for and responds to emergencies and natural disasters countywide, and County Fire also provides regional urban search and rescue services. Additionally, San Bernardino County provides law enforcement, including crime prevention, in unincorporated areas and under contract to some incorporated jurisdictions. It also provides some countywide law enforcement services, including the coroner, and when requested, special investigation assistance to incorporated jurisdictions. The County is also responsible for the administration of justice, both prosecutions and public defenders, for crimes committed in the county; operation of county jails, including rehabilitation of inmates in its custody; for reentry and transition of parolees, probationers, and others living in the county engaged by the criminal justice system; and for assistance to victims of and witnesses to crimes committed in the county.

The Personal and Property Protection Element promotes continuous improvement in the provision of public safety and administration of justice, supports coordinated and effective interagency response to emergencies and natural disasters, provides policy direction to engage communities and respond to identified needs, and fosters collaboration among the Board of Supervisors–directed agencies and departments and the elected Sheriff and District Attorney (San Bernardino County 2020).

The project site is in unincorporated San Bernardino County; therefore, the following goals and policies for fire and emergency services and police protection are relevant to the proposed project (San Bernardino County 2020).

Fire Protection and Emergency Services

Goal PP-3 Fire and Emergency Medical: Reduced risk of death, injury, property damage, and economic loss due to fires and other natural disasters, accidents, and medical incidents through prompt and capable emergency response.

- **Policy PP-3.6 Concurrent protection services.** Require that fire department facilities, equipment, and staffing required to serve new development are operating prior to, or in conjunction with new development.
- **Policy PP-3.7 Fire safe design.** Require new development in the Fire Safety Overlay to comply with additional site design, building, and access standards to provide enhanced resistance to fire hazards.
- **Policy PP-3.10 Community outreach.** Engage with local schools, community groups, and businesses to increase awareness of fire risk, prevention, and evacuation.

Police Protection

Goal PP-1 Law Enforcement: Effective crime prevention and law enforcement that leads to a real and perceived sense of public safety for residents, visitors, and businesses.

- **Policy PP-1.1 Law enforcement services.** The Sheriff's Department provides law enforcement services for unincorporated areas and distributes resources geographically while balancing levels of service and financial resources with continuously changing needs for personal and property protection.
- **Policy PP-1.5 Community-based crime prevention.** The Sheriff's Department provides a range of outreach, education, and training programs for community-based and school-based crime prevention.

San Bernardino County Development Code

Fire Protection and Emergency Services

Section 83.01.060, Fire Hazards. This Section establishes standards for storage of solid materials susceptible to fire hazards and flammable liquids and gases where allowed in compliance with Division 2 (Land Use Zoning Districts and Allowed Land Uses).

Police Protection

Section 12.0511, Search and Rescue. Pursuant to Government Code section 26614, the Sheriff shall have the authority to search for and rescue persons who are lost or are in danger of their lives within or in the immediate vicinity of the county.

5.7.1.2 EXISTING CONDITIONS

Fire Protection and Emergency Services

San Bernardino County Fire Protection District

The San Bernardino County Fire Protection District is a community-based, all hazard emergency services provider. The fire district's jurisdiction encompasses extremely diverse environments that stretch from the Los

Angeles County line on the west, to the Colorado River on the east, to the Nevada State line and Kern and Inyo counties on the north. (San Bernardino County Fire Protection District 2021).

The core services of the fire district are fire protection, paramedic, and emergency response services. The fire district covers approximately 20,105 square miles in San Bernardino County, including 24 incorporated cities and the unincorporated areas of San Bernardino County. The fire district has 48 full-time fire stations, 8 volunteer fire stations, 1,043 county fire personnel, and 640 fire suppression personnel (San Bernardino County Fire Protection District 2021).

According to the fire district's annual report, it received 130,000 calls for service during the 2020/2021 fiscal year,[1] an increase of 3,900 calls from the 2019/2020 fiscal year. The county experienced 10,503 fires (including structural, vegetation, vehicle, and other fires) during 2020/2021, an increase of 2,171 fires from 2019/2020. In addition, the fire district had 98,359 calls for medical aid during 2020/2021, an increase of 2,480 calls from 2019/2020 (San Bernardino County Fire Protection District 2021).

The community of Mentone and Redlands East Valley HS are in San Bernardino County Fire District Division 2 (East Valley). According to the fire district's 2020/2021 annual report, Division 2 received 48,573 calls for service during the 2020/2021 fiscal year, an increase of 1,207 calls from the 2019/2020 fiscal year. Division 2 experienced 4,634 fires (including structural, vegetation, vehicle, and other fires) during 2020/2021, an increase of 916 fires from 2019/2020. In addition, Division 2 had 36,517 calls for medical aid during 2020/2021, an increase of 385 calls for medical aid from 2019/2020 (San Bernardino County Fire Protection District 2021).

The community of Mentone and Redlands East Valley HS are served by Mentone Station 9 and, if necessary, Redlands Fire Station 261 and Station 228 from San Bernardino can also respond to the area. Table 5.12-1, *Fire Stations Serving the Project Site*, provides the location of each fire station and its distance to the project site. There are no existing deficiencies in the fire protection service to the project site, and there are no existing plans to add fire service facilities or expand facilities in the area (San Bernardino County Fire Protection District. 2021b).

Table 5.7-1 Fire Stations Serving the Project Site

Station	Address	Distance from Project Site	Agency/Department
Mentone Fire Station 9	1300 Crafton Ave. Mentone, CA 92359	1 mile	San Bernardino County Fire Protection District
Redlands Fire Station 261	525 E Citrus Ave. Redlands, CA 92373	3.6 miles	City of Redlands Fire Department
Station 228	3398 E Highland Ave. San Bernardino, CA 92346	10.9 miles	San Bernardino County Fire Protection District

Sources: San Bernardino County Fire Protection District 2021; City of Redlands Fire Department 2021; City of Yucaipa Fire Department 2021.

Fire Station 9 is a full-time fire station and is staffed with 3 personnel daily—a captain, engineer, and firefighter/paramedic—and equipped with a type 1 fire engine or a type 3 brush engine. The fire district has

[1] 2020/2021 fiscal year is from July 1, 2020, to June 30, 2021

established an average service response time goal of 7.5 minutes for both first-in response units and basic life support units.

Police Protection

San Bernardino County Sheriff's Department

The San Bernardino County Sheriff's Department is responsible for law enforcement and countywide wilderness rescue services in San Bernardino County. The Sheriff's department includes 8 county and 14 contract patrol stations and approximately 3,600 employees. The department's dispatch center takes in 1,014,509 calls for service annually (San Bernardino County Sheriff's Department 2021a).

The community of Mentone and Redland East Valley HS are served by the Yucaipa Patrol Station at 34144 Yucaipa Boulevard, 5.9 miles southeast of the Redland East Valley HS and project site. The county area patrolled by deputies assigned to Yucaipa Station is about 225 square miles and has a population of over 10,000. The Yucaipa Patrol Station has six staff member and five patrol cars. In addition to paid staff, the patrol station has 167 volunteers who annually donate over 30,000 hours of services. These volunteers provide staffing for line reserves, citizen patrol, two highly trained search-and-rescue teams, a mounted posse, a chaplain corps, and explorer scouts (San Bernardino County Sheriff's Department 2021b).

The sheriff's department has established an average service response time goal of 4.5 minutes for emergency response incidents (a crime in progress or a life-or-death situation), and 12.15 minutes for routine response incidents (a crime that has already occurred and is not a life-or-death situation). There are no existing deficiencies in police protection service in the project site area, and there are no plans to add new stations near the project site (San Bernardino County Sheriff's Department 2021c).

5.7.1.3 THRESHOLDS OF SIGNIFICANCE

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

PS-1 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:

(i) Fire Protection

(ii) Police Protection

(iii) Schools

(iv) Parks

(v) Libraries

(vi) Other Public Facilities

The Initial Study, included as Appendix A to this DEIR, substantiates that impacts associated with the following thresholds would be less than significant; therefore, these impacts will not be further addressed in this DEIR:

- Threshold PS-1(iii), Schools
- Threshold PS-1(iv), Parks
- Threshold PS-1(v), Libraries
- Threshold PS-1(vi), Other Public Facilities

5.7.1.4 ENVIRONMENTAL IMPACTS

Methodology

The potential impacts related to fire and police protection were evaluated based on the ability of existing and planned fire district and sheriff's department staffing, equipment, and facilities to meet the additional demand for fire protection and emergency medical services and police protection resulting from development of the proposed project. Impacts are considered significant if implementation of the proposed project would result in inadequate staffing levels or response times and/or increased demand for services that would require the construction or expansion of new or altered facilities that might have an adverse physical effect on the environment. A significant impact could occur if the project generated the need for additional personnel or equipment that could not be accommodated within the existing stations and would require the construction of a new station or an expansion of an existing fire or sheriff's station.

Impact Analysis

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.7-1: The proposed project would not affect response times or other performance objectives that would result in the need for new or physically altered fire protection facilities, the construction of which would cause significant environmental impacts. [Threshold PS-1(i)]

Construction

Construction of the proposed project would occur in three phases, with construction activities anticipated to begin in March 2022 and end in November 2026. Project construction activities would include grading and excavation, trenching and installation of underground utilities, demolition of the existing track and field, and regrading and recompacting the proper base and slope for the proposed improvements. It would require construction workers, equipment, and vehicles on the site during each phase.

Access to the project site and the surrounding areas could be affected by construction of the proposed project. Temporary construction-related traffic could delay or obstruct the movement of fire department's vehicles within or through the project area. However, designated construction staging areas would be implemented for stockpiling and storage of construction equipment, as the construction contractor would be required to provide

an off-street parking/storage area for vehicles and equipment (see Mitigation Measure T-1 in section 5.8, *Transportation*, of this DEIR). Any disruptions in access would be temporary and short term. Therefore, the proposed project would not adversely affect the fire district's ability to provide adequate service during construction of the proposed project.

The proposed project would comply with the most currently adopted fire codes, building codes, and nationally recognized fire and life safety standards of San Bernardino County and the State of California are maintained during construction and operation. Compliance with these codes and standards is ensured through the County's and the Fire Protection District's development review and building plan check process.

Additionally, in the event of an emergency at the project site that requires more resources than Mentone Station 9 could provide, the fire district would request assistance and resources to the site from other nearby stations that respond to the area, as show in Table 5.7-1. Therefore, construction of the proposed project would not affect response times or other performance objectives that result in the need for new or physically altered fire protection facilities, the construction of which would cause significant environmental impacts. Construction impacts would be **less than significant**.

Operation

The proposed project would result in a new sport stadium, track-and-field facilities, and associated improvements that would include bleacher seating for 3,000 people, lighting, a home ticket booth and restroom/concession building, and visitor ticket booth and restroom/concession building. The proposed project would also include various improvements to landscaping, new chain-link fencing, access and circulation, and emergency access.

Redlands East Valley HS currently hosts approximately 30 games and events onsite and additional 30 games and events offsite at various locations, including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. The proposed project would allow Redlands East Valley HS to hold home games and school events at its own campus and would relocate the 30 offsite games and events to the project site. During operation, the proposed project would host approximately 60 events/games per year, all of which are existing events. The most heavily attended stadium events would be football games. Additional games—likely no more than two—could be scheduled depending on playoff status. Homecoming, games between local school rivals, and possible playoff games could draw maximum-capacity crowds. Occasional special events, such as rallies, may also draw capacity-sized crowds. Approximately five capacity events—crowds of over 2,000 spectators—are anticipated per year (consistent with existing conditions). An average event is anticipated to draw approximately 100 to 200 spectators.

The proposed project would redevelop the existing sports stadium and would not introduce new uses nor new games and events to the project site. The existing access and circulation features at Redlands East Valley HS, including the on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles, and the proposed project would be designed to accommodate emergency access to the facility. Any modifications to the access features are subject to District and San Bernardino County design requirements and would be subject to approval by the San

Bernardino County Fire Protection District. Emergency vehicles have access to the proposed project and all other areas of the school via on-site travel corridors.

According to the County Fire Protection District, the fire services need in the community of Mentone is currently being met, and there are no plans for additional resources, personnel, and equipment in the project area. Although the proposed project may create greater a slight increase in the demand for fire protection services with the relocation of events/games to the project site, the proposed project would have a negligible effect on service standards. Correspondence with San Bernardino County Fire Protection District indicates that the Mentone station has sufficient capacity to adequately serve the proposed project and does not anticipate issues with delivering service to the proposed project (San Bernardino County Fire Protection District 2021b)(see Appendix D). Therefore, operation of the proposed project would not increase the requirement for fire protection facilities and personnel, would not adversely affect the fire district's ability to provide adequate service, and would not require new or expanded fire facilities that could result in adverse environmental impacts. Operational impacts of the proposed project would be **less than significant**.

Impact 5.7-2: The Proposed Project would not affect response times or other performance objectives that result in the need for new or physically altered police protection facilities, the construction of which would cause significant environmental impacts. [Threshold PS-1(ii)]

Construction

Access to the project site and the surrounding areas could be affected by construction of the proposed project. Temporary construction-related traffic could delay or obstruct the movement of county sheriff's vehicles within or through the project area. However, designated construction staging areas would be implemented for stockpiling and storage of construction equipment, as the construction contractor would be required to provide an off-street parking/storage area for vehicles and equipment (see Mitigation Measure T-1 in section 5.8, *Transportation*, of this DEIR). Any disruptions in access would be temporary and short term. Therefore, the proposed project would not adversely affect the county sheriff's ability to provide adequate service during construction of the proposed project and would not require new or expanded police facilities that could result in adverse environmental impacts. Impacts would be **less than significant**.

Operation

The Yucaipa Patrol Station currently has 6 sworn personnel and 167 volunteer staff, and the station can serve the proposed project with existing facilities. Implementation of the proposed project is not anticipated to significantly increase county sheriff's response times to either the project site or the surrounding vicinity; however, in the event of an emergency at the project site that requires more resources than the Yucaipa Patrol Station could provide, the county sheriff would direct resources to the site from other nearby stations, including the Central Station, 12 miles northwest of Redland East Valley HS. If necessary, the sheriff's department can request assistance from other nearby police departments, including the Redlands Police Department.

As discussed above, the proposed project would allow Redlands East Valley HS to hold home games and school events at its own campus. The proposed project would allow the relocation of 30 event and games currently held offsite to be relocated to the project site With the proposed project, up to 60 events and games would be

held onsite. As discussed above, an average event is anticipated to draw approximately 100 to 200 spectators. Approximately five events/games per year are anticipated to reach capacity.

The proposed project is intended the redevelop the sports stadium and track and field facilities. It would not include a residential component that would directly increase the residential population in the area, so the student and staff populations of the school are not anticipated to increase. Thus, according to the county sheriff, the Yucaipa Patrol Station would be able to serve the proposed project with existing facilities (San Bernardino County Sheriff's Department 2021c)(see Appendix D).

Additionally, existing access and circulation features at Redlands East Valley HS, including the on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. The proposed project would be designed to accommodate emergency access to the project site. Any modifications to the access features are subject to District and San Bernardino County design requirements and would be subject to approval by the San Bernardino County Fire Protection District. Emergency vehicles have access to the proposed project and all other areas of the school via on-site travel corridors.

Therefore, the proposed project would not adversely affect the county sheriff's ability to provide adequate service and would not require new or expanded police facilities that could result in adverse environmental impacts. Impacts would be **less than significant**.

5.7.1.5 CUMULATIVE IMPACTS

Fire Protection and Emergency Services

The geographic area for cumulative analysis of fire protection services is the unincorporated community of Mentone in San Bernardino County. Residential and employment population increases would result in an increased demand for public services and facilities, including fire protection. The transportation study prepared for the proposed project assumes a general regional growth rate of 10.4 percent, which is well above the forecasted population and housing unit growth in the Mentone community. The impacts of new development are evaluated on a case-by-case basis. Service providers would continue to evaluate levels of service and potential funding sources to meet demand. However, in the event of an emergency at the project site that required more resources than the Station 9 could provide, the fire district could request assistance from other nearby fire departments, including the City of Redlands Fire Department and the City of Yucaipa Department.

The cumulative analysis considers one cumulative project, the 800 Opal, LLC Manufacturing/Warehouse Project, which is located directly across Colton Avenue from the project site. The 800 Opal LLC Manufacturing/Warehouse Project includes the construction of a new 2,358 square foot office building for on-line vehicle auction company and would involve the shipping, receiving and storage of vehicles, including industrial and construction equipment. As with the proposed project, the 800 Opal LLC project along with other development projects would be required to comply with applicable California Building Code, the California Fire Code, and local code development requirements and standards to reduce potential fire risk. Cumulative projects may require associated infrastructure, such as roads, fuel breaks, and power lines, that could exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. These projects

would be reviewed by their respective jurisdictions for land use and zoning consistency and compliance with applicable design requirements. Correspondence with San Bernardino County Fire Department indicates that the Mentone station has sufficient capacity to adequately serve the proposed project and does not anticipate issues with delivering service to the proposed project. Therefore, the proposed project is not anticipated to contribute to a significant cumulative impact, and thus would result in a **less than significant cumulative impact**.

Police Protection

Cumulative projects within San Bernardino County would require increased law enforcement services to serve new development. Local population growth would result in an increased demand for public services and facilities, including law enforcement. As discusses above, the transportation study prepared for the proposed project assumes a general regional growth rate of 10.4 percent, which is well above the forecasted population and housing unit growth in the Mentone community. The impacts of new development are evaluated on a case-by-case basis. Service providers would continue to evaluate levels of service and potential funding sources to meet demand. Development projects would be reviewed by San Bernardino County Sheriff's Department staff prior to development permit approval to ensure adequate security measures are provided for each site-specific development in the county.

The cumulative analysis considers one cumulative project, the 800 Opal, LLC Manufacturing/Warehouse Project, which is located directly across Colton Avenue from the project site. Each development project would be evaluated and required to adhere to applicable California Building Code, and local code development requirements and standards to reduce potential emergency risks.

As discussed above, the proposed project does not include a residential component that would directly increase the residential population in the area, thus, the student and staff populations of the school are not anticipated to increase. Correspondence with San Bernardino Sheriff Department indicates that the Yucaipa Patrol station has sufficient capacity to adequately serve the proposed project. Therefore, cumulative impacts associated with police services from implementation of the proposed project would result in a **less than significant cumulative impact**.

5.7.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.7-1 and 5.7-2.

5.7.1.7 MITIGATION MEASURES

No mitigation measures required.

5.7.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.7.2 References

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———. 2021b. Yucaipa Patrol Station. https://wp.sbcounty.gov/sheriff/patrol-stations/yucaipa/.

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5.8 TRANSPORTATION

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the Redland East Valley High School Stadium Project (proposed project) to traffic and transportation conditions at the campus and surrounding community.

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

- *Traffic and Parking Impacts Analysis for the Proposed Redlands East Valley High School Stadium*, Garland Associates, January 2022 (Transportation Impact Analysis)

A complete copy of this technical report is provided in Appendix E of this DEIR.

One comment letters was received in response to the Initial Study/Notice of Preparation (IS/NOP) circulated for the proposed project— from the City of Redlands Planning department —regarding the proposed project's potential road system impacts that may affect the City of Redlands, which are evaluated in this section. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.8.1 Environmental Setting

5.8.1.1 REGULATORY BACKGROUND

State, regional, and local laws, regulations, plans, or guidelines related to transportation that are applicable to the proposed project are summarized in this section.

State

Assembly Bill 1358: The California Complete Streets Act

The California Complete Streets Act of 2008 (AB 1358) was signed into law on September 30, 2008. Beginning January 1, 2011, AB 1358 required circulation elements to address the transportation system from a multimodal perspective. The bill states that streets, roads, and highways must "meet the needs of all users in a manner suitable to the rural, suburban, or urban context of the general plan." Essentially, this bill requires a circulation element to plan for all modes of transportation where appropriate, including walking, biking, car travel, and transit.

The Complete Streets Act also requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled. For further clarity, AB 1358 tasked the Governor's Office of Planning and Research to release guidelines for compliance with this legislation by January 1, 2014.

Senate Bill 375: Sustainable Communities and Climate Protection Act

The Sustainable Communities and Climate Protection Act (SB 375) was signed into law on September 30, 2008. The SB 375 regulation provides incentives for cities and developers to bring housing and jobs closer

together and to improve public transit. The goal behind SB 375 is to reduce automobile commuting trips and length of automobile trips, thus helping to meet the statewide targets for reducing greenhouse gas emissions set by AB 32, the California Global Warming Solutions Act of 2006. SB 375 requires each metropolitan planning organization to add a broader vision for growth, called a "sustainable communities strategy" (SCS), to its transportation plan. The SCS must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower greenhouse gas emissions. The SCS should integrate transportation, land use, and housing policies to plan for achievement of the regional emissions target.

Senate Bill 743

On September 27, 2013, SB 743 was signed into law. The legislature found that with the adoption of SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of greenhouse gas (GHG) emissions, as required by AB 32. Additionally, AB 1358, described above, requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users.

SB 743 started a process that fundamentally changes transportation impact analysis as part of California Environmental Quality Act (CEQA) compliance. These changes include the elimination of auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion as the basis for determining significant impacts. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (California Public Resources Code section 21099[b][1]). On January 20, 2016, the Governor's Office of Planning and Research (OPR) released proposed revisions to its CEQA Guidelines for the implementation of SB 743. OPR developed alternative metrics and thresholds based on VMT. The guidelines were certified by the Secretary of the Natural Resources Agency in December 2018. As of July 1, 2020, lead agencies were required to consider VMT as the metric for determining transportation impacts. The guidance provided relative to VMT significance criteria is focused primarily on land use projects, such as residential, office, and retail uses. However, as noted in the updated CEQA Guidelines, agencies are directed to choose metrics that are appropriate for their jurisdiction to evaluate the potential impacts of a project in terms of VMT.

Regional

Southern California Association of Governments

SCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) provides a regional transportation plan for six counties in Southern California: Orange, San Bernardino, Riverside, Los Angeles, Ventura, and Imperial. The primary goal of the regional transportation plan is to increase mobility for the region. With recent legislation, this plan also encompasses sustainability as a key principle in future development. Current and recent transportation plan goals generally focus on balanced transportation and land use planning that:

- Maximize mobility and accessibility for all people and goods in the region.
- Ensure travel safety and reliability for all people and goods in the region.
- Preserve and ensure a sustainable regional transportation system.
- Maximize the productivity of our transportation system.
- Protect the environment and health of residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).
- Encourage land use and growth patterns that facilitate transit and active transportation.

On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt Connect SoCal (2020–2045 RTP/SCS) and the addendum to the Connect SoCal Program EIR. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. The 2020-2045 RTP/SCS focuses on the continued efforts for an integrated approach in transportation and land uses strategies in development of the SCAG region through horizon year 2045. It projects that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. Additionally, it is projected that implementation of the plan would reduce VMT per capita for year 2045 by 4.1 percent compared to baseline conditions for the year. The 2020-2045 RTP/SCS includes a "core vision" that centers on maintaining and better managing the transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit closer together and increasing investments in transit and complete streets.

Local

San Bernardino Countywide Plan

The Countywide Plan's policy plan sets goals concerning the community and gives direction to growth and development. In addition, it outlines programs that were developed to accomplish those goals and policies.

Transportation and Mobility Element

The transportation and mobility element establishes the location and operational conditions of the roadway network; coordinates the transportation and mobility system with future land use patterns and projected growth; provides guidance for the County's responsibility to satisfy the local and subregional mobility needs of residents, visitors and businesses in unincorporated areas; and addresses access and connectivity among the various communities, cities, towns, and regions, as well as the range and suitability of mobility options: vehicular, trucking, freight and passenger rail, air, pedestrian, bicycle, and transit.

The transportation and mobility element has the following goals, policies, and objectives related to traffic and transportation:

Goal TM-1 Roadway Capacity: Unincorporated areas served by roads with capacity that is adequate for residents, businesses, tourists, and emergency services.

- **Policy TM-1.1 Roadway level of service (LOS).** Require our roadways to be built to achieve the following minimum level of service standards during peak commute periods (typically 7:00-9:00 AM and 4:00-6:00 PM on a weekday):
  - LOS D in the Valley Region
  - LOS D in the Mountain Region
  - LOS C in the North and East Desert Regions

- **Policy TM-1.2 Interjurisdictional roadway consistency.** Promote consistent cross-sections along roads traversing incorporated and unincorporated areas.

- **Policy TM-1.8 Emergency access.** When considering new roadway improvement proposals for the CIP or RTP, we consider the provision of adequate emergency access routes along with capacity expansion in unincorporated areas. Among access route improvements, we prioritize those that contribute some funding through a local area funding and financing mechanism.

Goal TM-3 Vehicle Miles Traveled: A pattern of development and transportation system that minimizes vehicle miles traveled.

- **Policy TM-3.1 VMT Reduction.** Promote new development that will reduce household and employment VMT relative to existing conditions.

- **Policy TM-3.2 Trip reduction strategies.** Support the implementation of transportation demand management techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.

- **Policy TM-3.3 First mile/last mile connectivity.** Support strategies that strengthen first/last mile connectivity to enhance the viability and expand the utility of public transit in unincorporated areas and countywide.

Goal TM-4 Complete Streets, Transit, and Active Transportation: On- and off-street improvements that provide functional alternatives to private car usage and promote active transportation in mobility focus areas.

- **Policy TM-4.1 Complete streets network.** Maintain a network of complete streets within mobility focus areas that provide for the mobility of all users of all ages and all abilities, while reflecting the local context.

- **Policy TM-4.2 Complete streets improvements.** Evaluate the feasibility of installing elements of complete street improvements when planning roadway improvements in mobility focus areas, and we require new development to contribute to complete street improvements in mobility focus areas. In evaluating complete street improvements, we prioritize those in mobility focus areas that are within unincorporated environmental justice focus areas.

- **Policy TM-4.4 Transit access for residents in unincorporated areas.** Support and work with local transit agencies to generate a public transportation system, with fixed routes and on-demand service, that provide residents of unincorporated areas with access to jobs, public services, shopping, and entertainment throughout the county.

- **Policy TM-4.6 Transit access to public service, health, and wellness.** In unincorporated areas where public transit is available, prefer new public and behavioral health facilities, other public facilities and services, education facilities, grocery stores, and pharmacies to be located within one-half mile of a public transit stop. Encourage and plan to locate new County health and wellness facilities within one-half mile of a public transit stop in incorporated jurisdictions. We encourage public K-12 education and court facilities to be located within one-half mile of public transit.

- **Policy TM-4.7 Regional bicycle network.** Work with SBCTA and other local agencies to develop and maintain a regional backbone bicycle network.

- **Policy TM-4.8 Local bicycle and pedestrian networks.** Support local bike and pedestrian facilities that serve unincorporated areas, connect to facilities in adjacent incorporated areas, and connect to regional trails. We prioritize bicycle and pedestrian network improvements that provide safe and continuous pedestrian and bicycle access to mobility focus areas, schools, parks, and major transit stops.

- **Policy TM-4.9 Bike and pedestrian safety.** We promote pedestrian and bicyclist safety by providing separated pedestrian and bike crossings when we construct or improve bridges over highways, freeways, rail facilities, and flood control areas. We monitor pedestrian and bicycle traffic accidents and promote safety improvements in unincorporated high-accident areas.

- **Policy TM-4.10 Shared parking.** We support the use of shared parking facilities that provide safe and convenient pedestrian connectivity between adjacent uses.

- **Policy TM-4.11 Parking areas.** We require publicly accessible parking areas to ensure that pedestrians and bicyclists can safely access the site and onsite businesses from the public right-of-way.

San Bernardino County Municipal Code

Chapter 83.11 Parking and Loading Standards

Section 83.11.030, General Parking Provisions

a) **Location.** The required parking spaces shall be located on the same site with the primary use or structure, on premises contiguous to them, or in a location conforming to a Site Plan approved in compliance with Chapter 85.08 (Site Plan Permits). Property within the ultimate right-of-way of a street or highway shall not be used to provide required parking or loading facilities. Parking shall not be allowed in the front yard setback other than in the driveway for a single-family residential use or within a driveway in a multi-family development that is specifically designed for and has sufficient length to provide off-street parking for a specific dwelling unit.

b) **Change in Use.** When the occupancy or use of a property is changed to a different use, parking to meet the requirements of this Chapter shall be provided for the new use or occupancy. In the case of an infill multi-family or affordable (income-restricted) residential development, a Minor Use Permit may be used to review and approve any additional parking required that is a result of the change in use.

c) **Increase in Use.** When the occupancy or use of a premises is altered, enlarged, expanded, or intensified, additional parking to meet the requirements of this Chapter shall be provided for the enlarged, expanded, altered, or intensified portion only.

d) **Two or More Uses.** Where two or more uses are located in a single structure or on a single parcel, required parking shall be provided for each specific use (i.e., the total parking required for an establishment that has both industrial and office uses shall be determined by computing the parking for the industrial use and the office use and then adding the two requirements together.)

e) **Parking and Loading Spaces to Be Permanent.** Parking and loading spaces shall be permanently available, marked and maintained for parking or loading purposes for the use they are intended to serve. The Director may approve the temporary reduction of parking or loading spaces in conjunction with a seasonal or intermittent use with the approval of a Temporary Use Permit issued in compliance with Chapter 85.15.

f) **Parking and Loading to Be Unrestricted.** Owners, lessees, tenants, or persons having control of the operation of a premises for which parking or loading spaces are required by this Chapter shall not prevent, prohibit or restrict authorized persons from using these spaces without prior approval of the Director.

g) **Use of Parking Area for Activities Other than Parking.** Required off-street parking, circulation, and access areas shall be used exclusively for the temporary parking and maneuvering of vehicles and shall not be used for the sale, lease, display, repair, or storage of vehicles, trailers, boats, campers, mobile homes, merchandise, or equipment, or for any other use not authorized by the provisions of this Code. (Ord. 4011, passed - -2007)

Section 83.11.040, Number of Parking Spaces Required

a) **Number of Parking Spaces Required.** Each land use shall provide at least the minimum number of off-street parking spaces, including disabled access spaces required by § 83.11.060 (Disabled Parking Requirements), except where a parking reduction has been granted in compliance with § 83.11.050 (Adjustments to Parking Requirements) or a variance has been granted in compliance with Chapter 85.17 (Variances). Additional spaces may be required through approval of a discretionary permit.

b) **Minimum Requirements for Nonresidential Uses.** A nonresidential use shall provide a minimum of four spaces with one additional parking space for each facility vehicle, except where otherwise noted in this Chapter.

Table 5.8-1 County Parking Requirements by Land Use

Uses	Number of Spaces Required
Meeting facilities - Theaters, auditoriums, stadiums, sport arenas, gymnasiums and similar places of public assembly	1 for each 3 fixed seats or for every 25 sq. ft. of seating area within the main auditorium where there are no fixed seats[1]

1 Twenty-four (24") linear inches of bench or pew shall be considered a fixed seat.

5.8.1.2 EXISTING CONDITIONS

The San Bernardino Countywide Plan identifies the roadway designations for the county shown in Table 5.8-2. Though these roadway designations are generally consistent with the designations of incorporated cities and towns, the County's designations do not officially apply within incorporated boundaries. Additionally, the County may apply roadway designations to freeways and state highways, but the design, construction, maintenance, and improvement of freeways and state highways is under the jurisdiction and responsibility of Caltrans unless the roadway has been relinquished to a local jurisdiction.

Table 5.8-2 County Roadway Designation

Roadway Designation	Typical Cross-Section Characteristics			
	Divided	Right-of-Way	Curb to Curb	Lanes
Major Divided Highway	Yes	120 feet	94 feet	4 to 6
Major Arterial Highway	No	120 feet	94 feet	4 to 6
Major Highway	At Times	104 feet	80 feet	2 to 4
Secondary Highway	At Times	88 feet	64 feet	2 to 4
Controlled/Limited Access Collector	Usually	66 feet	44 feet	2
Mountain Major Highway	No	80 feet	64 feet	2 to 4
Mountain Secondary Highway	No	60 feet	44 feet	2
State Highway/Special Conditions or Special Standards	Determined by Caltrans			
Freeway				

Source: San Bernardino County 2020.

Street Network

The streets that provide access to Redlands East Valley HS include Colton Avenue, Opal Avenue, King Street, Agate Avenue, Beryl Avenue, Mentone Boulevard (State Route 38), Citrus Avenue, Wabash Avenue, and Crafton Avenue.

Colton Avenue

Colton Avenue is a two- to four-lane east-west street that abuts the north side of the Redlands East Valley HS campus. It has four lanes west of Agate Avenue/King Street, three lanes between Agate Avenue and Crafton Avenue (one eastbound and two westbound), and two lanes east of Crafton Avenue. The speed limit on Colton Avenue is 35 miles per hour, and there are three school access driveways on Colton Avenue.

Opal Avenue

Opal Avenue is a two-lane north-south street that abuts the west side of the Redlands East Valley HS campus. It runs along the west side of the stadium site. The speed limit on Opal Avenue is 35 miles per hour, and a driveway on Opal Avenue provides access to a parking lot.

King Street/Agate Avenue

King Street/Agate Avenue is a two-lane north-south street that abuts the east side of the Redlands East Valley HS campus. This street is called King Street south of Colton Avenue and Agate Avenue north of Colton Avenue. The speed limit on King Street/Agate Avenue is 25 miles per hour, and there are two school access driveways on King Street.

Beryl Avenue

Beryl Avenue is a two-lane north-south street that extends north from the Redlands East Valley HS's main driveway. The driveway is the south leg of the Beryl Avenue/Colton Avenue intersection. The speed limit on Beryl Avenue is 25 miles per hour.

Mentone Boulevard (State Route 38)

Mentone Boulevard is a two-lane east-west State highway that is one-half mile north of the Redlands East Valley HS campus. The speed limit on Mentone Boulevard is 40 miles per hour.

Citrus Avenue

Citrus Avenue is a two-lane east-west street one-quarter mile south of the Redlands East Valley HS campus. The speed limit on Citrus Avenue is 45 miles per hour.

Wabash Avenue

Wabash Avenue is a four-lane north-south street one-quarter mile west of the Redlands East Valley HS campus. The speed limit on Wabash Avenue is 40 miles per hour.

Crafton Avenue

Crafton Avenue is a two-lane north-south street one-quarter mile east of the Redlands East Valley HS campus. The speed limit on Crafton Avenue is 35 miles per hour.

Existing Traffic Volumes

Manual traffic counts were taken at 10 study area intersections, shown in Table 5.8-3, *Existing and Future Intersection Levels of Service,* during the Friday evening peak period on November 12, 2021. The peak hour for this analysis refers to the one-hour time period prior to the beginning of an event at the stadium, when patrons are traveling to the stadium. The traffic analysis addresses the pre-event period because the ambient traffic volumes are substantially higher during this period (generally between 6:00 and 7:00 pm) than during the post-event period (after 9:00 pm). Most high school football games in this district begin at 7:00 pm.

Existing Intersection Levels of Service

To quantify the existing baseline traffic conditions, the 10 study area intersections were analyzed to determine their operating conditions during the Friday evening peak hour. Based on the hourly traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the average vehicle delay values and corresponding levels of service have been determined for each intersection, as summarized in Table 5.8-3. The relationship between the average delay values and levels of service is shown in Table 5.8-4, *Relationship Between Delay Values and Levels of Service*.

As shown in Table 5.8-3, all 10 of the study area intersections currently operate at acceptable levels of service (LOS A through D) during the Friday evening peak hour. Seven intersections operate at LOS A, and three intersections operate at LOS C. The delay and LOS values for the intersections with 4-way stop signs represent the average for the entire intersection; the delay and LOS values for the intersections with 2-way stop signs represent the intersection approach that has the highest level of delay at the stop sign.

Table 5.8-3 Existing and Future Intersection Levels of Service

Intersection	Delay Value (seconds/vehicle) and Level of Service Friday Evening Pre-event Peak Hour	
	Existing Conditions	2026 Without Project
Mentone Blvd/Opal Avenue	17.8 – C	21.0 – C
Mentone Blvd/Beryl Avenue	18.8 – C	22.5 – C
Mentone Blvd/Agate Avenue	24.5 – C	30.2 – D
Colton Avenue/Wabash Avenue	9.92 – A	10.38 – B
Colton Avenue/Opal Avenue	7.97 – A	8.10 – A
Colton Avenue/Beryl Avenue-School Driveway	7.99 – A	8.10 – A
Colton Avenue/Agate Avenue-King Street	7.86 – A	7.97 – A
Colton Avenue/Crafton Avenue	9.98 – A	10.50 – B
Citrus Avenue/Opal Avenue	7.70 – A	7.81 – A
Citrus Avenue/King Street	7.87 – A	7.97 – A

Source: Garland Associates 2021.

Table 5.8-4 Relationship Between Delay Values and Levels of Service

Level of Service	Delay Value (seconds) Unsignalized Intersections
A	0.0 to 10.0
B	> 10.0 to 15.0
C	> 15.0 to 25.0
D	> 25.0 to 35.0
E	> 35.0 to 50.0
F	> 50.0

Source: Garland Associates 2021.

5.8.2 Thresholds of Significance

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

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

T-2 Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-4 Result in inadequate emergency access.

T-5 Result in inadequate parking capacity. (This threshold was removed from the CEQA Guidelines in 2010 but is included in this DEIR because it may indirectly result in other impacts.)

During the proposed project's scoping meeting, one commenter asked about parking for the proposed project. This chapter discusses the proposed project's potential impacts related to parking.

5.8.3 Environmental Impacts

5.8.3.1 METHODOLOGY

An analysis has been prepared to evaluate the traffic and parking impacts of the proposed project. The methodology for the traffic study, in general, was to:

1) Establish the existing baseline traffic conditions on the streets that provide access to the school site.

2) Project the future baseline traffic conditions for the target year of completion for the proposed stadium project (year 2026).

3) Estimate the levels of traffic that would be generated by the stadium for a capacity-level event.

4) Conduct a comparative analysis of traffic conditions with and without the stadium.

5) Evaluate the VMT impacts of the proposed stadium.

6) Evaluate the parking supply and demand during a stadium event. The stadium analysis is based on Friday evening traffic conditions on the streets and intersections in the project vicinity.

The traffic analysis addresses the impacts at 10 intersections in the vicinity of the school site. The study area intersections, the type of traffic control at each intersection, and the public agency with jurisdictional responsibility for the intersection are shown in Table 5.8-5, *Study Area Intersections*.

Table 5.8-5 Study Area Intersections

Intersection	Traffic Control	Jurisdiction
Mentone Blvd/Opal Avenue	Stop Signs on Opal Ave	Caltrans
Mentone Blvd/Beryl Avenue	Stop Signs on Beryl Ave	Caltrans
Mentone Blvd/Agate Avenue	Stop Signs on Agate Ave	Caltrans
Colton Avenue/Wabash Avenue	4-Way Stop Signs	Redlands/San Bernardino County
Colton Avenue/Opal Avenue	4-Way Stop Signs	San Bernardino County
Colton Avenue/Beryl Avenue-School Driveway	4-Way Stop Signs	San Bernardino County
Colton Avenue/Agate Avenue-King Street	4-Way Stop Signs	San Bernardino County
Colton Avenue/Crafton Avenue	4-Way Stop Signs	San Bernardino County
Citrus Avenue/Opal Avenue	4-Way Stop Signs	San Bernardino County
Citrus Avenue/King Street	4-Way Stop Signs	San Bernardino County

Source: Garland Associates 2021.

LOS Standards and Scenarios

The transportation impact analysis included an evaluation of the LOS at the affected study area intersections. While SB 375 has shifted the determination of CEQA impacts from LOS to vehicle miles traveled (VMT), LOS is still used by San Bernardino County to describe the operating conditions experienced by motorists; and thus, has been included below to for informational purposes. LOS is an industry standard by which the operating conditions of a roadway segment or an intersection are measured. It is defined on a scale of A through F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS A is characterized as free-flowing traffic conditions with no restrictions on maneuvering or operation speeds, where traffic volumes are low and travel speeds are high. LOS F is characterized as forced flow with many stoppages and low operating speeds. According to San Bernardino County standards, LOS A through D represent acceptable conditions, and LOS E and F represent congested, overcapacity conditions. According to the San Bernardino County Congestion Management Program, LOS A through E represent acceptable conditions, and LOS F represents unacceptable conditions. The levels of service at the study area intersections were determined by using the Highway Capacity Manual methodology, which is consistent with the guidelines for traffic impact studies from the San Bernardino County Congestion Management Program.

The LOS for the intersections in the vicinity of the proposed project were analyzed for the following scenarios:

- Existing conditions (2021).
- Existing conditions plus the proposed stadium project.
- Future baseline conditions without the project for the target year of 2026.
- Future conditions with the proposed stadium project (2026).

The year 2026 was used for the future target year because that is anticipated to be the year of completion for the third and final phase of the proposed project.

5.8.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.8-1: The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. [Threshold T-1]

Nonmotorized Transportation and Transit

The proposed project would generate nonmotorized travel because some event patrons would travel to and from the school as pedestrians or on bicycles. The streets adjacent to Redlands East Valley HS have sidewalks along one or both sides of the street, and the intersections along the Colton Avenue frontage of the school are equipped with four-way stop signs and painted crosswalks. Bike racks are available at the school, and school bus loading/unloading zones are provided on-site. Thus, the proposed project would comply with Policy TM-4.8 of the Countywide Plan, which prioritizes bicycle and pedestrian network improvements that provide safe and continuous pedestrian and bicycle access to mobility focus areas, schools, parks, and major transit stops.

Additionally, Omnitrans operates Line 8 in the vicinity of the Redlands East Valley HS on Mentone Boulevard and Crafton Avenue. The proposed project would not adversely affect the performance of this transit line and would not conflict with any plans or policies relative to transit, including Policy TM-4.6 of the Countywide Plan, which requires education facilities and other public facilities to be within one-half mile of a public transit stop. The proposed project would be consistent with policies supporting alternative transportation because busing would typically be provided from the opposing schools during football games, and bike racks are currently provided at the school. Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts would be **less than significant**.

Vehicle Miles Traveled

The proposed project would result in shorter travel distances for most of the people who would attend games, practices, events, and other activities at the project site, and thus would result in a reduction in total

VMT. The proposed project supports Policy TM-3.1 of the Countywide Plan, to reduce household and employment VMT, and impact would be **less than significant**. VMT impacts of the proposed project are analyzed further in Impact 5.8-2.

Level of Service Analysis (non-CEQA issue)

Though not used for the determination of CEQA impacts, LOS is still used by San Bernardino County to describe the operating conditions experienced by motorists; and thus, has been included below to provide general information regarding potential impacts of the proposed project. LOS is a qualitative measure of the effect of several factors, including speed, travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. LOS are designated A through F from best to worst, which cover the entire range of traffic operations that might occur.

Trip Generation

Trip generation rates and the anticipated volumes of traffic that would be generated by the proposed project when operated at capacity are shown in Table 5.8-6, *Project-Generated Traffic*. They assume that the proposed project would generate a demand of one vehicle for every four seats (for vehicles that remain parked at the site) and that an additional 10 percent of the vehicles arriving at the project site would drop passengers off and leave. The rate of one vehicle for every four seats is based on the parking requirements for places of public assembly from the City of Redlands Municipal Code, which is one space per five fixed seats, and the parking requirement for stadiums according to Chapter 83.11, Parking and Loading, of the San Bernardino County Code, which is one space for every three seats. The average of these two parking requirements is one space for every four seats.

Table 5.8-6 Project-Generated Traffic

Facility	Evening Hour – Pre-event			Daily Traffic
	Inbound	Outbound	Total	
TRIP GENERATION RATES				
Stadium (vehicle trips per seat)	0.275	0.025	0.30	0.60
GENERATED TRAFFIC VOLUMES				
Stadium (3,000 seats)	825	75	900	1,800

Source: Garland Associates 2021.

Table 5.8-6 shows that the 3,000-seat stadium would generate an estimated 900 vehicle trips during the peak hour (825 inbound and 75 outbound). The peak hour for this analysis is the one-hour period before the beginning of an event at the project site, that is, when patrons are traveling to the proposed project. Approximately the same level of traffic would be generated at the end of an event when patrons are exiting (with the inbound and outbound traffic volumes reversed). The proposed project may also generate traffic at other times of the day; however, such traffic activity would be minor compared to a capacity-level event. The estimated daily traffic volume generated by the proposed project on the day of a capacity-level event would be 1,800 vehicle trips per day.

Using the generated traffic volumes in Table 5.8-6, the volumes of project traffic on each access street and at each study area intersection were determined for the transportation impact analysis. The volumes of traffic that would be generated by the 3,000-seat stadium are shown in Table 5.8-6, and Appendix E of this DEIR. Additionally, the volumes of traffic for the existing conditions scenario plus the project-generated traffic and the total volumes of traffic projected for the year 2026 scenario with the proposed stadium are shown in Table 5.8-7 and Table 5.8-8, respectively, and in Appendix E of this DEIR. These projected traffic volumes are for the Friday evening pre-event peak hour.

Intersection Impacts

The transportation impact analysis for the 10 study area intersections was conducted by comparing the delay values and LOS for the "without project" and "with project" scenarios. For the existing conditions scenario, the analysis compares the existing conditions to the conditions with the proposed project. Similarly, for the year 2026 scenario, the analysis compares the year 2026 baseline conditions without the project to the year 2026 scenario with the proposed project. The year 2026 was used as the target year for future conditions because that is anticipated to be the year that all three phases of the proposed project are completed. The peak hour for the analysis represents the time period during which the proposed project would generate the heaviest volumes of traffic (typically between 6:00 and 7:00 pm), which does not coincide with the peak period for the ambient traffic volumes, which generally occurs between 4:00 and 6:00 pm.

The comparative levels of service at the study area intersections for the existing conditions scenario are summarized in Table 5.8-7, *Intersection LOS: Existing Conditions as Baseline*, for the Friday evening peak hour. Table 5.8-7 shows the before-and-after delay values and the LOS at each study area intersection. Also shown are the increases in the delay values as a result of the proposed project. The last column in Table 5.8-7 indicates if the intersections would be significantly impacted by the project generated traffic.

The intersection of Mentone Boulevard and Opal Avenue, for example, would operate with an average delay value of 17.8 seconds per vehicle and LOS C for existing conditions and with an average delay value of 28.0 seconds and LOS D for the existing plus project scenario, which represents an increase in average delay of 10.2 seconds per vehicle. This impact would be less than significant according to the criteria in Section 5.8.3.1 under "LOS Standards and Scenarios" because the intersection would continue to operate at an acceptable LOS D. Table 5.8-7 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed stadium under existing conditions. The comparative levels of service for the year 2026 analysis scenario are shown in Table 5.8-8, *Intersection LOS: Year 2026 as Baseline*. Table 5.8-8 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed stadium for the year 2026 baseline scenario.

Table 5.8-7 Intersection LOS: Existing Conditions as Baseline

Intersection	Delay Value and Level of Service		Increase in Delay Value	Significant Impact
	Existing Conditions	Existing plus Project		
Mentone Blvd/Opal Avenue	17.8 – C	28.0 – D	10.2	No
Mentone Blvd/Beryl Avenue	18.8 – C	23.5 – C	4.7	No
Mentone Blvd/Agate Avenue	24.5 – C	27.0 – D	2.5	No

Colton Avenue/Wabash Avenue	9.92 – A	13.28 – B	3.36	No
Colton Avenue/Opal Avenue	7.97 – A	11.51 – B	3.54	No
Colton Avenue/Beryl Avenue-School Driveway	7.99 – A	15.26 – C	7.27	No
Colton Avenue/Agate Avenue-King Street	7.86 – A	8.56 – A	0.70	No
Colton Avenue/Crafton Avenue	9.98 – A	10.32 – B	0.34	No
Citrus Avenue/Opal Avenue	7.70 – A	8.13 – A	0.43	No
Citrus Avenue/King Street	7.87 – A	8.06 – A	0.19	No

Source: Garland Associates 2021.

Table 5.8-8 Intersection LOS: Year 2026 as Baseline

Intersection	Delay Value and Level of Service		Increase in Delay Value	Significant Impact
	2026 Without Project	2026 With Project		
Mentone Blvd/Opal Avenue	21.0 – C	34.6 – D	13.6	No
Mentone Blvd/Beryl Avenue	22.5 – C	29.3 – D	6.8	No
Mentone Blvd/Agate Avenue	30.2 – D	34.3 – D	4.1	No
Colton Avenue/Wabash Avenue	10.38 – B	14.18 – B	3.80	No
Colton Avenue/Opal Avenue	8.10 – A	11.84 – B	3.74	No
Colton Avenue/Beryl Avenue-School Driveway	8.10 – A	16.15 – C	8.05	No
Colton Avenue/Agate Avenue-King Street	7.97 – A	8.69 – A	0.72	No
Colton Avenue/Crafton Avenue	10.50 – B	10.91 – B	0.41	No
Citrus Avenue/Opal Avenue	7.81 – A	8.26 – A	0.45	No
Citrus Avenue/King Street	7.97 – A	8.18 – A	0.21	No

Source: Garland Associates 2021.

Tables 5.8-7 and 5.8-8 indicate that the proposed project would not have a significant impact at any of the study area intersections during the evening peak hour based on the significance criteria in Section 5.8.3.1 because the intersections would continue to operate at LOS D or better. Thus, the proposed project would be in compliance with Policy TM 1.1 of the Countywide Plan, which states that roadways in the county should achieve minimum LOS D in the Valley Region.

The traffic impacts associated with the capacity-level events would not occur on a daily basis but only when a major event is held at the facility—typically a high school football game. Such events would take place on a Thursday or Friday evening or on a Saturday afternoon five times a year. The analysis addresses the Friday evening scenario because the ambient traffic volumes would typically be higher on Friday than on Thursday evening or Saturday afternoon.

As discussed in Chapter 3, *Project Description*, the proposed project would host up 60 events and games per year. Most of the events and games would not be capacity-level events and would have relatively minor attendance levels typically ranging from 100 to 200 spectators. Because attendance at these activities would be substantially lower than the capacity-level events addressed above, they would also result in a **less than significant** traffic impact.

For purposes of comparison to a capacity-level event, the traffic generation levels for events with 100 and 200 spectators were calculated, as shown in Table 5.8-9, *Generated Traffic for Minor Events*. A 100-spectator event would generate an estimated 30 trips during the peak arrival time and 60 total daily trips. A 200-spectator event would generate 60 trips during the peak arrival time and 120 total daily trips. These traffic volumes are negligible compared to the level of traffic that would be generated by a capacity-level event at the stadium.

Table 5.8-9 Generated Traffic for Minor Events

Facility	Peak Hour – Pre-Event			Daily Traffic
	Inbound	Outbound	Total	
TRIP GENERATION RATES				
Stadium (vehicle trips per seat)	0.275	0.025	0.30	0.60
GENERATED TRAFFIC VOLUMES				
Stadium				
100 spectators	27	3	30	60
200 spectators	55	5	60	120

Source: Garland Associates 2021.

The proposed project would not conflict with the Countywide Plan policies that address the circulation system, and a **less than significant impact** would occur.

Impact 5.8-2: The proposed project would not conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b). [Threshold T-2]

The CEQA Guidelines state that projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

Construction Traffic

Construction of the proposed project would generate various levels of truck and automobile traffic throughout the duration of the construction period. Construction-related traffic includes construction workers traveling to and from the project site as well as trucks hauling construction materials to the site and demolition/excavation material away from the project site. Construction activities would generate an estimated 50 to 60 workers' trips per day and approximately 20 to 30 truck trips per day. The truck trips would be spread out throughout the workday, generally during nonpeak traffic periods. This level of construction-related traffic would not result in a significant traffic impact on the study area roadway network because it would be negligible compared to the volumes of traffic currently generated by the existing Redlands East Valley High School. A **less than significant impact** would occur.

Operational Traffic

The events and activities that would be held at the proposed project are currently held offsite at various locations, including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and

Redlands High School. These facilities are outside the attendance area of Redlands East Valley High School. Table 5.8-10 shows the distance of each of these facilities to the project site.

Table 5.8-10 Offsite Facility Distance to Project Site

Facility	Distance
Beaumont High School	10.8 miles southeast
Yucaipa Community Park	5.1 miles east
Citrus Valley High School	4.9 miles northwest
Redlands High School	2.8 miles west

Because the project site at Redlands East Valley High School is within 2.0 miles of the majority of the homes within the attendance area, the proposed project would result in shorter travel distances for most of the people attending games, practices, events, and other activities at the project site. Therefore, the proposed project would result in a reduction in total VMT compared to existing conditions, and the proposed project would have a **less than significant impact** on VMT.

Impact 5.8-3: Project circulation improvements have been designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access. [Thresholds T-3 and T-4]

Traffic Hazards and Incompatible Uses

The proposed project would not development new driveway access points onto the public right-of-way and access points would be the same as existing conditions. The proposed project includes access improvements internal to the project site which would aid in vehicle, pedestrian, and emergency vehicle circulation onsite. These internal improvements would not change existing access points onto the project site from the public right-of-way. Access to the project site would be provided by existing driveways at Redlands East Valley HS, which includes three driveways along Colton Avenue, two driveways along King Street, and one driveway on Opal Avenue. The proposed project's increased levels of traffic, number of pedestrians, and number of vehicular turning movements at the school entrances and at the nearby intersections can result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. However, these impacts would not be significant because the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related traffic on a daily basis. The addition of the proposed project would be compatible with the design and operation of Redlands East Valley HS, and the proposed project would not result in any major modifications to the existing access or circulation features at the school.

Most of the streets in the vicinity of Redlands East Valley HS have sidewalks adjacent to the street, and the intersections along the Colton Avenue frontage of the school are equipped with four-way stop signs and painted crosswalks. These features enhance pedestrian safety and facilitate pedestrian access to the school. Therefore, the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses. Impacts would be **less than significant**.

Emergency Access

The existing access and circulation features at Redlands East Valley HS, including the on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles, and the proposed project would be designed to accommodate emergency access to the facility. Any modifications to the access features are subject to District and San Bernardino County design requirements and would be subject to approval by the San Bernardino County Fire Protection District. Emergency vehicles have access to the proposed project and all other areas of the school via on-site travel corridors. Therefore, the proposed project would not result in inadequate emergency access. Impacts would be **less than significant**.

Impact 5.8-4: The proposed project would result in inadequate parking capacity during construction. The proposed project would not result in inadequate parking during operation. [Threshold T-5]

Parking During Construction

The primary parking impact that would occur during construction is that there would be parking demands associated with the construction vehicles, including workers' vehicles, trucks, and equipment. A potentially significant impact may occur if the construction parking, including vehicles and equipment, are parked or stored offsite along public rights-of-way. Therefore construction of the proposed project could result in a **potentially significant** parking impact if the vehicles and equipment were to be parked and stored along the public streets in the project vicinity.

Parking During Stadium Events

To determine parking for the proposed project, the Transportation Impact Analysis reviewed parking ratios for San Bernardino County and surrounding jurisdictions. According to the parking requirements for the City of Redlands, a place of public assembly (including a stadium, like the proposed project) is required to have one parking space for every five fixed seats. Based on this standard, the proposed 3,000-seat stadium would generate a parking requirement of 600 spaces during a capacity-level event. As shown in section 5.8.1.1, *Regulatory Background*, Chapter 83.11, "Parking and Loading Standards," of the Bernardino County Development Code indicates that the parking requirement for a stadium is one space for each three fixed seats (Table 5.8-2, County Parking Requirements by Land Use). Based on this rate, the proposed 3,000-seat stadium would require 1,000 parking spaces.

In compliance with the Chapter 83.11 of the municipal code, the proposed project would provide 1,086 parking spaces—858 spaces within the school's main campus, 78 spaces in the parking lot onsite adjacent to the football field that is accessed from Opal Avenue, and 150 spaces at the outdoor basketball courts adjacent to the stadium at the southeast corner of Colton Avenue and Opal Avenue. Thus, parking supply on campus and at the project site would exceed the parking requirements of the City of Redlands and San Bernardino County. Therefore, the proposed project would result in a **less than significant** impact on parking.

5.8.4 Cumulative Impacts

Because the proposed project is expected to be fully completed in the year 2026, the existing (2021) traffic volumes were expanded by a growth factor of 10.4 percent to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area, including traffic associated with construction of the 800 Opal Manufacturing/Warehouse project (800 Opal project) located across Colton Avenue from the project site. This growth factor represents a 2 percent annual growth rate for five years (compounded annually).

Consistency with Appliable Plans and Policies

The proposed project would be consistent with adopted policies, plans, and programs regarding circulation, including roadway and pedestrian facilities. Other development projects in the region, including the 800 Opal project, would also be required to show evaluate consistency with applicable plans and policies, including but not limited to the Countywide Plan. Development projects' consistency with applicable plans and policies would be separately reviewed by the applicable lead agency. If needed, the lead agency would require appropriate mitigation measures for each development project to reduce identified impacts.

Cumulative changes in VMT can be caused by other development, roadway, and transit infrastructure projects in the region, separate from the proposed project. Because the proposed project would result in a reduction of VMT compared to existing conditions, it would not contribute to any cumulative VMT impacts in the region.

Each development project, including the 800 Opal project, would be designed to minimize design hazards and incompatible uses. Further, the design of each development project would be evaluated individually by the lead agency, including in coordination with applicable departments that review transportation and safety (such as department of transportation, building and safety, and fire department). This review process would minimize potential impacts from hazardous design features and incompatible uses. The proposed project is consistent with the existing use onsite and would not create new hazardous design features.

Therefore, the proposed project would not contribute to a cumulative impact, and cumulative impacts would be **less than significant**.

5.8.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.8-1, 5.8-2, and 5.8-3.

Without mitigation, the following impact would be **potentially significant**:

- Impact 5.8-4 The proposed project would result in an insufficient number of parking spaces.

5.8.6 Mitigation Measures

Impact 5.8-4

T-1 The construction contractor shall provide an off-street staging area that would be used for parking/storage of construction vehicles and equipment. This staging area should be within the school property.

5.8.7 Level of Significance After Mitigation

Mitigation Measure T-1 would reduce potential impacts associated with transportation to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to transportation remain.

5.8.8 References

Garland Associates. 2021, December. *Traffic and Parking Impacts Analysis for the Proposed Redlands East Valley High School Stadium.* Appendix E of this DEIR.

San Bernardino County. 2020. "Policy Plan." San Bernardino Countywide Plan. http://www.sbcounty.gov/Uploads/LUS/GeneralPlan/Policy%20Plan%20and%20Policy%20Maps.pdf.

5.9 TRIBAL CULTURAL RESOURCES

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of Redland East Valley High School Stadium Project (proposed project) to impact tribal cultural resources. This section discusses state laws and regulations protecting resources, along with the existing cultural resource conditions on and near the project site.

Two comment letters were received in response to the Initial Study/Notice of Preparation (IS/NOP) circulated for the proposed project— from the Native American Heritage Commission (NAHC) and the San Manuel Band of Mission Indians —regarding the proposed project's potential impacts that may affect tribal cultural resources, which are evaluated in this section. The IS/NOP and all scoping comment letters are included as Appendix A of this DEIR.

5.9.1 Environmental Setting

5.9.1.1 REGULATORY BACKGROUND

Federal

National Register of Historic Places

The National Register of Historic Places recognizes properties that are significant at the national, state, and/or local levels and includes districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Properties are nominated to the National Register by the State Historic Preservation Officer of the state in which the property is located, by the Federal Preservation Officer for properties under federal ownership or control, or by the Tribal Historic Preservation Officer if a property is on tribal lands.

The criteria for listing in the National Register follow the standards for determining if properties, sites, districts, structures, or landscapes of potential significance are eligible for nomination. In addition to meeting any or all of the following criteria, properties nominated must also possess integrity of location, design, setting, feeling, workmanship, association, and materials:

- Associated with events that have made a significant contribution to the broad patterns of history.
- Associated with the lives of persons significant in our past.
- Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction.
- Yield, or may be likely to yield, information important in prehistory or history.

National Historic Preservation Act

The National Historic Preservation Act supplements the provisions of the Antiquities Act of 1906 and established laws for historic resources to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The law makes it illegal to destroy, excavate, or remove from federal or Indian lands any archaeological resources without a permit from the land manager. Regulations for the ultimate disposition of materials recovered as a result of permitted activities state that archaeological resources excavated on public lands remain the property of the United States. Archaeological resources excavated from Indian lands remain the property of the Indian or Indian tribe having rights of ownership over such resources.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 proclaims that the US government will respect and protect the rights of Indian tribes to freely exercise their traditional religions. The courts have interpreted this as requiring agencies to consider the effects of their actions on traditional religious practices.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (US Code, Title 16, Sections 470aa–mm) became law on October 31, 1979, and has been amended four times. It regulates the protection of archaeological resources and sites that are on federal and Indian lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (US Code, Title 25, Sections 3001 et seq.) is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items—such as human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants and culturally affiliated Indian tribes.

State

Assembly Bill 52

The Native American Historic Resource Protection Act (Assembly Bill (AB) 52 took effect July 1, 2015 and incorporates tribal consultation and analysis of impacts to tribal cultural resources (TCR) into the CEQA process. It requires TCRs to be analyzed like any other CEQA topic and establishes a consultation process for lead agencies and California tribes. Projects that require a notice of preparation of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration are subject to AB 52. A significant impact on a TCR is considered a significant environmental impact and requires feasible mitigation measures.

TCRs must have certain characteristics:

1) Sites, features, places, cultural landscapes (must be geographically defined), sacred places, and objects with cultural value to a California Native American tribe that are either included or

determined to be eligible for inclusion in the California Register of Historic Resources or included in a local register of historical resources. (Public Resources Code [PRC] Section 21074(a)(1))

2) The lead agency, supported by substantial evidence, chooses to treat the resource as a TCR. (PRC § 21074(a)(2))

The first category requires that the TCR qualify as a historical resource according to PRC Section 5024.1. The second category gives the lead agency discretion to qualify that resource—under the conditions that it support its determination with substantial evidence and consider the resource's significance to a California tribe. The following is a brief outline of the process in PRC Sections 21080.3.1 to .3.3.

1. A California Native American tribe asks agencies in the geographic area with which it is traditionally and culturally affiliated to be notified about projects. Tribes must ask in writing.

2. Within 14 days of deciding to undertake a project or determining that a project application is complete, the lead agency must provide formal written notification to all tribes who have requested it.

3. A tribe must respond within 30 days of receiving the notification if it wishes to engage in consultation.

4. The lead agency must initiate consultation within 30 days of receiving the request from the tribe.

5. Consultation concludes when both parties have agreed on measures to mitigate or avoid a significant effect to a TCR, *or* a party, after a reasonable effort in good faith, decides that mutual agreement cannot be reached.

6. Regardless of the outcome of consultation, the CEQA document must disclose significant impacts on TCRs and discuss feasible alternatives or mitigation that avoid or lessen the impact.

Native American Historic Resource Protection Act

PRC 5097.993

a) (1) A person who unlawfully and maliciously excavates upon, removes, destroys, injures, or defaces a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historic Resources pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site, any inscriptions made by Native Americans at such a site, any archaeological or historic Native American rock art, or any archaeological or historic feature of a Native American historic, cultural, or sacred site, is guilty of a misdemeanor if the act was committed with specific intent to vandalize, deface, destroy, steal, convert, possess, collect, or sell a Native American historic, cultural, or sacred artifact, art object, inscription, or feature, or site, and the act was committed as follows:

   i. On public land.

   ii. On private land, by a person, other than the landowner, as described in subdivision (b).

2) A violation of this section is punishable by imprisonment in the county jail for up to one year, by a fine not to exceed ten thousand dollars ($10,000), or by both that fine and imprisonment.

b) This section does not apply to any of the following:

(1) An act taken in accordance with, or pursuant to, an agreement entered into pursuant to subdivision (l) of Section 5097.94.

(2) An action taken pursuant to Section 5097.98.

(3) An act taken in accordance with the California Environmental Quality Act (Division 13 (commencing with Section 21000)).

(4) An act taken in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. Sec. 4321 et seq.).

(5) An act authorized under the Z'berg-Nejedly Forest Practice Act of 1973 (Chapter 8 (commencing with Section 4511) of Part 2 of Division 4).

(6) An action taken with respect to a conservation easement in accordance with Chapter 4 (commencing with Section 815) of Division 2 of the Civil Code, or any similar nonperpetual enforceable restriction that has as its purpose the conservation, maintenance, or provision of physical access of Native Americans to one or more Native American historic, cultural, or sacred sites, or pursuant to a contractual agreement for that purpose to which most likely descendants of historic Native American inhabitants are signatories.

(7) An otherwise lawful act undertaken by the owner, or an employee or authorized agent of the owner acting at the direction of the owner, of land on which artifacts, sites, or other Native American resources covered by this section are found, including, but not limited to, farming, ranching, forestry, improvements, investigations into the characteristics of the property conducted in a manner that minimizes adverse impacts unnecessary to that purpose, and the sale, lease, exchange, or financing of real property.

(8) Research conducted under the auspices of an accredited postsecondary educational institution or other legitimate research institution on public land in accordance with applicable permitting requirements or on private land in accordance with otherwise applicable law. (Added by renumbering Section 5097.995 by Stats. 2004, Ch. 286, Sec. 9. Effective January 1, 2005.)

PRC 5097.994.

a) A person who violates subdivision (a) of Section 5097.993 is subject to a civil penalty not to exceed fifty thousand dollars ($50,000) per violation.

b) A civil penalty may be imposed for each separate violation of subdivision (a) in addition to any other civil penalty imposed for a separate violation of any other provision of law.

c) In determining the amount of a civil penalty imposed pursuant to this section, the court shall take into account the extent of the damage to the resource. In making the determination of damage, the court may

consider the commercial or archaeological value of the resource involved and the cost to restore and repair the resource.

d) A civil action may be brought pursuant to this section by the district attorney, the city attorney, or the Attorney General, or by the Attorney General upon a complaint by the Native American Heritage Commission.

e) (1) All moneys collected from civil penalties imposed pursuant to this section as a result of an enforcement action brought by a city or county shall be distributed to the city or county treasurer of the city or county that brought the action. These moneys shall be first utilized to repair or restore the damaged site, and the remaining moneys shall be available to that city or county to offset costs incurred in enforcing this chapter.

(2) All moneys collected from civil penalties imposed pursuant to this section as a result of an enforcement action brought by the Attorney General shall be first distributed to, and utilized by, the Native American Heritage Commission to repair or restore the damaged site, and the remaining moneys shall be available to the Attorney General to offset costs incurred in enforcing this chapter. (Added by renumbering Section 5097.996 by Stats. 2004, Ch. 286, Sec. 10. Effective January 1, 2005.)

Human Remains

California Health and Safety Code Section 7050.5 requires that if human remains are discovered in the project site, disturbance of the site shall halt and remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and has reason to believe they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

California Register of Historical Resources

The California Register is the state version of the National Register of Historic Places. It was enacted in 1992 and became official January 1, 1993. The California Register was established to serve as an authoritative guide to the state's significant historical and archaeological resources. Resources that may be eligible for listing include buildings, sites, structures, objects, and historic districts. According to subsection (c) of PRC Section 5024.1, a resource may be listed as a historical resource in the California Register if it meets any of the four criteria listed under "National Register of Historic Places," above.

Local

San Bernardino Countywide Plan

The Countywide Plan's Policy Plan sets goals concerning the community and gives direction to growth and development. The Business Plan outlines programs that were developed to accomplish the goals and policies of the Countywide Plan.

Cultural Resources Element

The cultural resources element has the following goals, policies, and objectives related to tribal cultural resources:

Goal CR-1 Tribal Cultural Resources: Tribal cultural resources that are preserved and celebrated out of respect for Native American beliefs and traditions.

- **Policy CR-1.1 Tribal notification and coordination.** Notify and coordinate with tribal representatives in accordance with state and federal laws to strengthen our working relationship with area tribes, avoid inadvertent discoveries of Native American archaeological sites and burials, assist with the treatment and disposition of inadvertent discoveries, and explore options of avoidance of cultural resources early in the planning process.

- **Policy CR-1.2 Tribal planning.** Will collaborate with local tribes on countywide planning efforts and, as permitted or required, planning efforts initiated by local tribes.

- **Policy CR-1.3 Mitigation and avoidance.** Consult with local tribes to establish appropriate project-specific mitigation measures and resource-specific treatment of potential cultural resources. We require project applicants to design projects to avoid known tribal cultural resources, whenever possible. If avoidance is not possible, we require appropriate mitigation to minimize project impacts on tribal cultural resources.

- **Policy CR-1.4 Resource monitoring.** Encourage coordination with and active participation by local tribes as monitors in surveys, testing, excavation, and grading phases of development projects with potential impacts on tribal resources.

Goal CR-2 Historic and Paleontological Resources: Historic resources (buildings, structures, or archaeological resources) and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.

- **Policy CR-2.1 National and state historic resources.** Encourage the preservation of archaeological sites and structures of state or national significance in accordance with the Secretary of Interior's standards.

- **Policy CR-2.2 Local historic resources.** Encourage property owners to maintain the historic integrity of resources on their property by (listed in order of preference): preservation, adaptive reuse, or memorialization.

- **Policy CR-2.3 Paleontological and archaeological resources.** Strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.

- **Policy CR-2.4 Partnerships.** Encourage partnerships to champion and financially support the preservation and restoration of historic sites, structures, and districts.
- **Policy CR-2.5 Public awareness and education.** Increase public awareness and conduct education efforts about the unique historic, natural, tribal, and cultural resources in San Bernardino County through the County Museum and in collaboration with other entities.

San Bernardino County Development Code

Chapter 82.12: Cultural Resources Preservation (Cp) Overlay

The Cultural Resources Preservation (CP) Overlay is intended to provide for the identification and preservation of important archaeological and historical resources. This is necessary because:

a) Many of the resources are unique and non-renewable; and

b) The preservation of cultural resources provides a greater knowledge of County history, thus promoting County identity and conserving historic and scientific amenities for the benefit of future generations. (Ord. 4011, passed - -2007)

§ 82.12.020 Location Requirements.

The CP Overlay may be applied to areas where archaeological and historic sites that warrant preservation are known or are likely to be present. Specific identification of known cultural resources is indicated by listing in one or more of the following inventories:

a) California Archaeological Inventory;

b) California Historic Resources Inventory;

c) California Historical Landmarks;

d) California Points of Historic Interest; and/or

e) National Register of Historic Places. (Ord. 4011, passed - -2007)

§ 82.12.030 Application Requirements.

The application for a project proposed within the CP Overlay shall include a report prepared by a qualified professional that determines through appropriate investigation the presence or absence of archaeological and/or historical resources on the project site and within the project area, and recommends appropriate data recovery or protection measures. The measures may include:

a) Site recordation;

b) Mapping and surface collection of artifacts, with appropriate analysis and curation;

c) Excavation of sub-surface deposits when present, along with appropriate analysis and artifact curation;

d) Preservation in an open space easement and/or dedication to an appropriate institution with provision for any necessary maintenance and protection; and/or

e) Proper curation of archeological and historical resource data and artifacts collected within a project area pursuant to federal repository standards. Such data and artifacts shall be curated at San Bernardino County Museum. Pursuant to State Historical Resources Commission motion dated February 2, 1992, the repository selected should consider 36 C.F.R. 79, Curation of Federally-owned and Administered Archaeological Collection, Final Rule, as published Federal Register, September 12, 1990, or a later amended for archival collection standards. (Ord. 4011, passed - -2007)

§ 82.12.040 Development Standards.

a) The proposed project shall incorporate all measures recommended in the report required by § 82.12.030.

b) Archaeological and historical resources determined by qualified professionals to be extremely important should be preserved as open space or dedicated to a public institution when possible. (Ord. 4011, passed - -2007)

§ 82.12.050 Native American Monitor.

If Native American cultural resources are discovered during grading or excavation of a development site of the site is within a high sensitivity Cultural Resources Preservation Overlay District, the local tribe will be notified. If requested by the tribe, a Native American Monitor shall be required during such grading or excavation to ensure all artifacts are properly protected and/or recovered. (Ord. 4011, passed - -2007)

5.9.1.2 EXISTING CONDITIONS

Tribal Cultural Setting

The project area is within the traditional boundaries of the San Manuel Band of Mission Indians. The San Manuel Band of Mission Indians is a federally recognized American Indian tribe in San Bernardino County, California. It is one of several clans of Serrano Indians, who are the indigenous people of the San Bernardino highlands, passes, valleys mountains, and high deserts and who share a common language and culture. The San Manuel reservation was established in 1891 and recognized as a sovereign nation with the right of self-government. The San Manuel tribal government oversees many governmental units, including the departments of fire, public safety, education, and environment.

The San Manuel Band of Mission Indians has become a self-sufficient tribal government with an established economic and social outlook. San Manuel is active in supporting projects in neighboring communities. Nearby cities and towns receive support from the San Manuel Band of Mission Indians in the way of monetary donations for cultural, social, and economic projects to benefit the common good of the communities in which they live and work (SCTCA 2021).

AB 52

AB 52 is triggered when a Native American tribe submits a request for consultation. Redlands Unified School District (RUSD or District) notified tribal representatives of the San Manual Band of Mission Indians about the proposed project on November 9, 2021, and requested information about known potential resources at or near the project site. The District did not receive a response pertaining to AB 52 consultation. In December 2021 in response to the NOP, the Tribe sent an email to the District explaining that they were unable to attend the scoping meeting and stated that their goal is to be a helpful resource and auxiliary support for lead agencies.

California Office of Historic Preservation

The Zanja

A streamline named the Zanja runs through southern border of Redlands East Valley HS. The Zanja stream originates in the San Bernardino mountains, approximately 3 miles northeast of the campus, and terminates in the City of Redlands, approximately 2.6 miles west of the campus. Spanish missionaries introduced the principle of irrigation in San Bernardino Valley, thus opening the way to settlement. Franciscan fathers engineered and Indians dug this first ditch, or *zanja*, in 1819 to 1820. It supported the San Bernardino Asistencia, the Rancho San Bernardino, then pioneer ranches and orchards, and finally Redlands' domestic water supply (OPH 2021).

5.9.2 Thresholds of Significance

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

TCR-1 Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 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:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii) 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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

5.9.3 Environmental Impacts

5.9.3.1 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.9-1: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). [Threshold TCR-1.i]

Redlands East Valley HS and the project site are not listed as a historic landmark in San Bernardino County under the Office of Historic Preservation (OHP 2021). As described above in section 5.9.1.2, *Existing Conditions*, the Zanja is a streamline the that runs through southern border of Redlands East Valley HS. The Zanja stream originates in the San Bernardino mountains and terminates in the City of Redlands, and is listed a historic landmark in San Bernardino County due to its introduction by Spanish missionaries and use as the principal irrigation in San Bernardino Valley (OHP 2021). However, construction and operation of the proposed project would occur entirely within the project site and Redlands East Valley HS, and would not affect or alter the Zanja streamline. Additionally, the proposed project does not include extensive earthwork as no subterranean levels are proposed, and therefore, the probability of encountering tribal cultural resources is low. As the District is dedicated to the preservation of tribal cultural resources, in the event that subsurface resources are uncovered, the District will comply with CEQA Guidelines Section 15064.5, which provides that work in the area of a discovery shall be suspended until a qualified archaeologist can assess the significance of the find, and, if necessary, develop appropriate avoidance and/or recovery. Furthermore, the District would implement Mitigation Measure TCR-1, in the event that resources are inadvertently discovered during construction activities. With the implementation of Mitigation Measure TCR-1, the proposed project would not adversely affect the significance of a tribal cultural resource. Impacts would be **less than significant with mitigation incorporated**.

Impact 5.9-2: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant pursuant to criteria in Public Resources Code section 5024.1(c). [Threshold TCR-1.ii]

As described in Impact 5.9-1, the Zanja is a streamline that runs through the southern border of Redlands East Valley HS. According to the National Register of Historic Places (Reference #77000329), the Zanja stream from Sylvan Street to Mill Creek Road is listed as a historic landmark in San Bernardino County due to its introduction by Spanish missionaries and use as the principle of irrigation in San Bernardino Valley (OHP 2021; NRHP 2021). However, construction and operation of the proposed project would occur entirely within the project site and Redlands East Valley HS and would not affect or alter the Zanja streamline. Additionally, the proposed project does not include extensive earthwork as no subterranean levels are proposed, and therefore, the probability of encountering tribal cultural resources is low. As the District is dedicated to the preservation of tribal cultural resources, in the event that subsurface resources are uncovered, the District will comply with CEQA Guidelines Section 15064.5, which provides that work in the area of a discovery shall be suspended until a qualified archaeologist can assess the significance of the find, and, if necessary, develop appropriate avoidance and/or recovery. Furthermore, the District would implement Mitigation Measure TCR-1, in the event that resources are inadvertently discovered during construction activities. With the implementation of Mitigation Measure TCR-1, the proposed project would not adversely affect the significance of a tribal cultural resource. Impacts would be **less than significant with mitigation incorporated**.

5.9.4 Cumulative Impacts

Each related cumulative project would be required to comply with CEQA Guidelines Section 15064.5, which addresses accidental discoveries of archaeological sites and resources, including tribal cultural resources. Therefore, any discoveries of TCRs caused by the project or related projects would be mitigated to a less than significant level. Project impacts would not be cumulatively considerable.

5.9.5 Level of Significance Before Mitigation

Impact 5.9-1 and Impact 5.9-2 would be potentially significant before the implementation of mitigation.

5.9.6 Mitigation Measures

TCR-1 If tribal cultural resources are inadvertently discovered during ground disturbing activities for this project, the following procedures will be carried out for treatment and disposition of the discoveries:

- Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 50 feet) until the find can be assessed.
- All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist. If the resources are Native American in origin, the proper Tribe(s) will retain it/them in the form and/or manner the Tribe(s) deems appropriate, for educational, cultural and/or historic purposes.
- If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).
- Work may continue on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources.
- Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native

American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the San Bernardino County Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

5.9.7 Level of Significance After Mitigation

Impacts would be less than significant with the implementation of Mitigation Measure TCR-1.

5.9.8 References

National Register of Historic Places (NRHP). 2021. *National Register Database and Research*. https://www.nps.gov/subjects/nationalregister/database-research.htm.

Office of Historic Preservation (OHP). 2021. *San Bernardino*. https://ohp.parks.ca.gov/?page_id=21476.

San Bernardino County. 2020. *San Bernardino Countywide Plan*. http://www.sbcounty.gov/Uploads/LUS/GeneralPlan/Policy%20Plan%20and%20Policy%20Maps.pdf.

San Bernadino County. 2021. San Bernardino County Code of Ordinances. https://codelibrary.amlegal.com/codes/sanbernardino/latest/overview.

Southern California Tribal Chairmen's Association (SCTCA). 2021. *San Manuel Band of Mission Indians*. https://sctca.net/san-manuel-band-of-mission-indians/.

6. Significant Unavoidable Adverse Impacts

At the end of Chapter 1, *Executive Summary*, is a table that summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Mitigation measures would reduce the level of impact, but the following impacts would remain significant, unavoidable, and adverse after mitigation measures are applied:

Noise

- Impact 5.6-2: Project implementation would result in long-term operation-related noise that would cause substantial increases in ambient noise levels to the residence located at 10637 Opal Avenue. [Threshold N-1]

6. Significant Unavoidable Adverse Impacts

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7. Alternatives to the Proposed Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant effects of the project and evaluate the comparative merits of the alternatives" (CEQA Guidelines § 15126.6[a]). As required by CEQA, this chapter identifies and evaluates potential alternatives to the proposed project.

Section 15126.6 of the CEQA Guidelines explains the foundation and legal requirements for the alternatives analysis in an EIR. Key provisions are:

- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (15126.6[b])

- "The specific alternative of 'no project' shall also be evaluated along with its impact." (15126.6[e][1])

- "The no project analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (15126.6[e][2])

- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." (15126.6[f])

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries…, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (15126.6[f][1]).

- "Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (15126.6[f][2][A])

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6[f][3])

For each development alternative, this analysis:

- Describes the alterative.
- Analyzes the impact of the alternative as compared to the proposed project.
- Identifies the impacts of the project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the basic project objectives.
- Evaluates the comparative merits of the alternative and the project.

According to Section 15126.6(d) of the CEQA Guidelines, "[i]f an alternative would cause…significant effects in addition those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

7.1.2 Project Objectives

As described in Section 3.2, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts.

1. Provide adequate stadium facilities at the Redlands East Valley High School to accommodate school sport games and school events at the campus.

2. Provide lighting to allow night use of the track and field to accommodate school-related events and activities.

3. Provide bleachers with adequate capacity to accommodate various spectator events currently held on and off campus.

4. Utilize existing space to enhance opportunities for after-school athletic and extracurricular activities.

5. Enhance sense of community by allowing home games on campus.

6. Upgrade the athletic fields to boost school pride.

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

The following is a discussion of the land use alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this EIR.

7.2.1 Alternative Development Areas

CEQA requires the discussion of alternatives to focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (CEQA Guidelines § 15126[5][B][1]). Key factors in evaluating the feasibility of potential off-site locations for EIR project alternatives include:

- If it is in the same jurisdiction.
- Whether development as proposed would require a general plan amendment.
- Whether the project applicant could reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent). (CEQA Guidelines § 15126.6[f][1])

The District owns other properties in the city, but the proposed stadium is site specific because its purpose is to accommodate school athletic games and school events at the Redlands East Valley High School campus. However, even if the proposed project could be located on another site, any development of the size and type proposed by the project would have substantially the same impacts on aesthetics, air quality, energy, greenhouse gas emissions, hydrology and water quality, noise, public services, transportation, and tribal cultural resources.

It was determined, therefore, that it is unlikely that there is an alternative project site that could potentially meet the objectives of the proposed project and reduce significant impacts of the project as proposed.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed above, the following two alternatives have been determined to represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the project, but which may avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in the following sections.

- No Project Alternative
- Siting Alternative

An EIR must identify an "environmentally superior" alternative and where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. Section 7.6 identifies the Environmentally Superior Alternative. The preferred land use alternative (proposed project) is analyzed in detail in Chapter 5 of this DEIR.

7.4 NO PROJECT ALTERNATIVE

The CEQA Guidelines require analysis of a No Project Alternative. The purpose of this alternative is to describe and analyze a scenario under which the proposed project is not implemented so that decision makers can compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project Alternative analysis must discuss the existing site conditions as well as what would reasonably be expected to occur in the foreseeable future based on any current plans, and it must be consistent with available infrastructure and community services.

Under the No Project Alternative, the proposed improvements at the Redlands East Valley High School would not be implemented. The existing facilities at the project site would remain in their current state, and the program would continue its current operations.

7.4.1 Aesthetics

Under this alternative, the existing facilities at the project site would remain as they area. Since no physical or operational changes would occur at the project site, this alternative would result in no impact to visual/aesthetic resources. Although the proposed project would result in upgraded athletic facilities and would beautify the campus through landscaping and other improvements, these impacts would result in changes to views across the site and introduce additional sources of light and glare. Under this alternative, the existing views across the property would remain unchanged. Because the No Project Alternative would not change views across the site nor introduce additional sources of light and glare, it would not require mitigation measures to reduce the proposed project's less than significantimpacts to light and glare.

7.4.2 Air Quality

No construction would occur under this alternative, and no new emissions would be generated. This alternative would eliminate the proposed project's potentially significant impacts to air quality, and mitigation measures would not be required.

7.4.3 Energy

No construction would occur under this alternative, and no new energy consumption would be generated. This alternative would eliminate the proposed project's less than significant impacts.

7.4.4 Greenhouse Gas Emissions

No construction would occur under this alternative, and no new emissions that could contribute to climate change would be generated. This alternative, compared to the proposed project, would eliminate the proposed project's less than significant impacts to greenhouse gas emissions.

7.4.5 Hydrology and Water Quality

No soil disturbance or changes to site hydrology and water quality would occur under this alternative. The proposed project's less than significant impacts to hydrology and water quality would be eliminated under this alternative.

7.4.6 Noise

No stadium construction or operational noise and vibration would be generated under this alternative. This alternative, compared to the proposed project, would eliminate the proposed project's less than significant and potentially significant impacts related to temporary and operational noise and vibration.

7.4.7 Public Services

The No Project Alternative would not introduce new facilities to the project site, and therefore, although the proposed project would result in greater fire protection and police service demands that would have a negligible effect on service standards, the No Project Alternative would eliminate the proposed project's less than significant effects.

7.4.8 Transportation

Under the proposed project, events and activities that are held at other schools within the District would redirect those trips to the project site, which would result in shorter travel distances for most spectators. Under this alternative, the consolidation of trips would not occur, and impacts would be greater than the proposed project, but would continue to be less than significant.

7.4.9 Tribal Cultural Resources

No earthwork or soil disturbance would occur under this alternative, and any undiscovered subsurface cultural resources at the project site would not be altered. This alternative, compared to the proposed project, would eliminate the less than significant impacts to tribal cultural resources.

7.4.10 Conclusion

The No Project Alternative would eliminate impacts to all the environmental resources analyzed in the EIR, except transportation, where impacts would be slightly greater than the proposed project. The No Project Alternative would not meet any of the project objectives.

7.5 SITING ALTERNATIVE

Under the Siting Alternative, the proposed stadium and associated improvements, as envisioned under the proposed project, would be located on the northeastern corner of the project site boundary, closer to East Colton Avenue, and farther from the residential community along Opal Avenue. To accommodate the proposed improvements at the northeastern corner, the existing stormwater pipe at the northern part of the

site would need to be relocated. If the proposed improvements are constructed over the existing site plan, the synthetic turf would need to be removed to repair/replace this stormwater pipe. This alternative would require major soil export and possibly retaining walls between the proposed improvements and the city sidewalk.

Figure 7-1, *Siting Alternative: Site Plan,* shows the proposed improvements at the northeastern corner of the project site, as proposed under this alternative.

7.5.1 Aesthetics

Under this alternative, the improvements as proposed under the project would be located on the northeastern corner of the site. Therefore, the visual character of the site under the proposed project and this alternative would be the same and less than significant. The light impacts, as with the proposed project, would continue to be less than significant with the implementation of the mitigation measure. This alternative's impact to nighttime lighting would be similar to the proposed project and would continue to be less than significant with mitigation incorporated.

7.5.2 Air Quality

Under this alternative, the existing stormwater pipe in the northern part of the site would be relocated to accommodate the placement of the proposed improvements in the northeastern corner of the site. Additionally, major soil export would be required to accommodate improvements at the northeastern corner, which would increase air quality impacts compared to the proposed project. Construction impacts would be slightly greater under this alternative compared to the proposed project, but operational impacts would be similar to the proposed project. Compared to the proposed project, impacts of the Siting Alternative would be greater but would also be less than significant with mitigation measures incorporated.

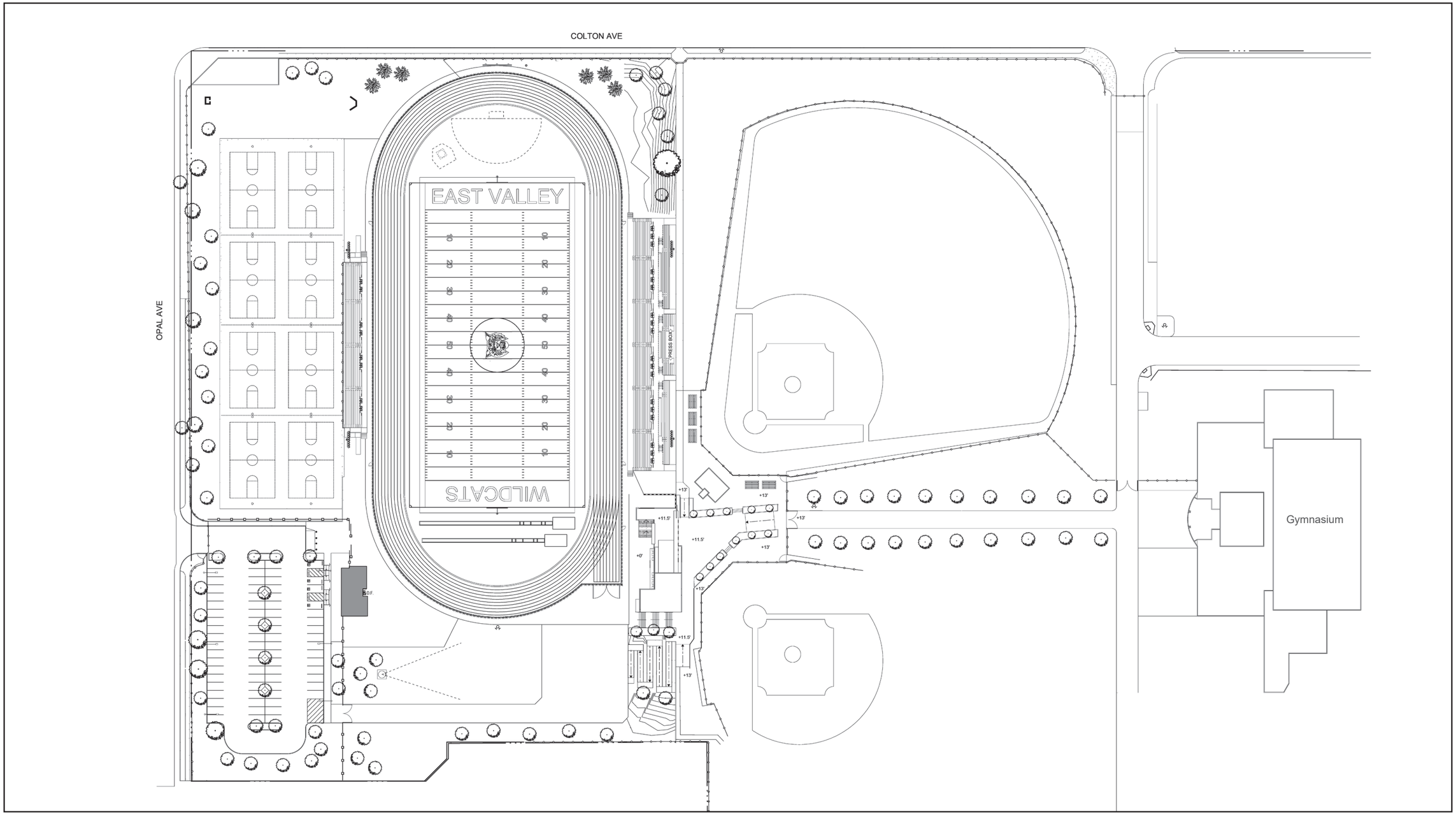
7.5.3 Energy

This alternative would site the proposed improvements at the northeastern corner of the project site, which would require the relocation of the existing stormwater pipe and major export of soil. Construction impacts would be slightly greater and operational impacts would be similar to the proposed project. Compared to the proposed project, impacts would be greater but would continue to be less than significant.

7.5.4 Greenhouse Gas Emissions

Construction impacts under this alternative would be slightly greater than the proposed project due to the relocation of the stormwater pipe and major soil export, but operational impacts would be similar. Overall, impacts would be greater under this alternative, but would still be less than significant.

Figure 7-1 - Siting Alternative: Site Plan



0 100
Scale (Feet)

Source: PCH Architects, 2021

7. Alternatives to the Proposed Project

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7.5.5 Hydrology and Water Quality

Impacts under the Siting Alternative would be greater than the proposed project because the existing stormwater pipe that runs across the northern part of the site would need to be relocated. Additionally, drainage patterns on-site would change to accommodate improvements in the northeastern corner of the project site. Therefore, impacts under this alternative would be greater than the proposed project, but would still be less than significant.

7.5.6 Noise

Under this alternative the proposed stadium would be located on the northeast corner of the project site boundary, as mentioned above. Moving the stadium to this location would add a greater buffer distance between the proposed stadium and the adjacent residence south of the project site's property line, 10637 Opal Avenue. It would also shorten the distance between the stadium and the residences to the northeast near Colton Avenue and Beryl Avenue. However, based on the SoundPLAN modeling noise contours, the increased buffer distance would not lessen the noise impacts to 10637 Opal Avenue to less than significant. Similarly, the shorten distance between the stadium and the residences to the northeast would not move the stadium close enough to result in a new impact to those residences. This alternative would result in neutral noise impacts.

7.5.7 Public Services

The proposed improvements under this alternative would be the similar to those under the proposed project; impacts would remain less than significant.

7.5.8 Transportation

Transportation impacts under this alternative and the proposed project would be similar, and impacts would remain less than significant.

7.5.9 Tribal Cultural Resources

This alternative would result in similar impacts as the proposed project, and impacts would remain less than significant.

7.5.10 Conclusion

The Siting Alternative would result in similar impacts to aesthetics, and, mitigation would still be required to reduce light and glare impacts. The Siting Alternative would not reduce the proposed project's significant and unavoidable impact to operational noise. This alternative would result in greater impacts to air quality, energy, greenhouse gas emissions, and hydrology and water quality, and similar impacts to noise, public services, transportation, and tribal cultural resources compared to the proposed project. This alternative would meet all of the project objectives.

7.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where the "No Project" Alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. One alternative has been identified as "environmentally superior" to the proposed project:

- Siting Alternative

The Siting Alternative has been identified as the environmentally superior alternative. While this alternate does not eliminate the significant and unavoidable impact related to operational noise to the residence to the south of the project site, it would slightly lessen impacts associated with noise by relocating the proposed improvements farther away from the residential uses along Opal Avenue.

"Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts" (CEQA Guidelines § 15126.6[c]).

8. Impacts Found Not to Be Significant

California Public Resources Code Section 21003 (f) states: "…it is the policy of the state that…[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the State California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant environmental impacts of the proposed project" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the Draft EIR.

8.1 ASSESSMENT IN THE INITIAL STUDY

The Initial Study prepared for the proposed project in November 2021 determined that the impacts in Table 8-1 would be less than significant. Consequently, they have not been further analyzed in this Draft EIR. Please refer to Appendix A for explanations of these conclusions. Impact categories and questions are summarized directly from the CEQA Environmental Checklist, as contained in the Initial Study.

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:	
a) Have a substantial adverse effect on a scenic vista?	Less Than Significant
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	
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 California Resources Agency, to non-agricultural use?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
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))?	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	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?	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:	
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?	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 Wildlife or U.S. Fish and Wildlife Service?	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?	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?	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less Than Significant
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?	No Impact
V. CULTURAL RESOURCES. Would the project:	
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	Less Than Significant
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	Less Than Significant
VII. GEOLOGY AND SOILS. Would the project:	
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 a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact
ii) Strong seismic ground shaking?	Less Than Significant
iii) Seismic-related ground failure, including liquefaction?	No Impact
iv) Landslides?	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	Less Than Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
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?	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?	Less Than Significant
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?	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less Than Significant
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	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?	Less Than Significant
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less Than Significant
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	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 for people residing or working in the project area?	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Less Than Significant
X. HYDROLOGY AND WATER QUALITY. Would the project:	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less Than Significant
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less Than Significant
XI. LAND USE AND PLANNING. Would the project:	
a) Physically divide an established community?	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact
XII. MINERAL RESOURCES. Would the project:	
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	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?	No Impact

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
XIII. NOISE. Would the project result in:	
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?	Less Than Significant
XIV. POPULATION AND HOUSING. Would the project:	
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)?	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact
XV. 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:	
c) Schools?	No Impact
d) Parks?	No Impact
e) Other public facilities?	Less Than Significant
XVI. RECREATION.	
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?	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?	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:	
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects?	Less Than Significant
A comment letter from the City of Redlands Planning Department was received in response to the Initial Study/Notice of Preparation (IS/NOP), regarding the proposed project's potential water demand and wastewater generation that may affect the City of Redlands (the IS/NOP and all scoping comment letters are included as Appendix A of this DEIR). Based on the design flow rate for the proposed water fixtures, the proposed project's wastewater generation for a full capacity event would be approximately 1,770 gallons per day. Water consumption is approximately 110% the generation of wastewater which is 1,947 gallons per day for a full capacity event. These water and wastewater values are for full capacity events which are expected to occur up to five times per year. The proposed project would be required to comply with applicable regulations from the California Building Code and California Green Building Code, which includes requirements for water flow and water conservation. Additionally, prior to the connection to the public sewer line or water line, the project applicant would be required to pay a connection fee and the availability of the local water and sewer system will be reviewed at the time of connection. Therefore, impacts to utilities would be less than significant.	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less Than Significant
c) Result in a determination by the waste water 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?	Less Than Significant
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?	Less Than Significant
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	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?	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?	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	
a) Does the project have the potential to 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, 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?	Less Than Significant

8. Impacts Found Not to Be Significant

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9. Significant Irreversible Changes Due to the Proposed Project

The CEQA Guidelines requires that an Environmental Impact Report (EIR) describe any significant irreversible environmental changes that would be caused by the proposed project should it be implemented. Specifically, Section 15126.2(c) of the CEQA Guidelines states:

> Use of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highways improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The following significant irreversible changes would be caused by implementation of the proposed project:

- Construction of the proposed improvements would require the commitment of nonrenewable and/or slowly renewable energy resources, including gasoline, diesel fuel, and electricity; human resources; and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water.

- Operation of the proposed project would require continued use of electricity, petroleum-based fuels, fossil fuels, and water, similar to existing school operations.

- Operation of the proposed improvements would require a continued commitment of social services and public maintenance services (e.g., police, fire, electricity).

The commitment of resources required for the construction of the proposed project and associated improvements would limit the availability of resources for future generations or for other uses during the life of the project.

9. Significant Irreversible Changes Due to the Proposed Project

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10. Growth-Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth or the construction of additional housing in the surrounding environment, either directly or indirectly. Also required is an assessment of other projects that would foster other activities which could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

The proposed project would result in the construction of a stadium and associated improvements to support athletic programs at the school. The proposed project would not increase student enrollment and would not generate new games nor events. The project site is in an urbanized area served by existing infrastructure, including water and sewer mains and electricity and natural gas services. The improvements would only affect the existing school site and would not remove obstacles to growth or affect population growth.

10. Growth-Inducing Impacts of the Proposed Project

Would this project result in the need to expand one or more public services to maintain desired levels of service?

The proposed project would enhance athletic facilities at the project site and would not result in an increase in student population or school events at the site. The proposed project would not result in the need for additional public government services or expanded utility infrastructure. See Section 5.7, *Public Services*, of this DEIR, and Section 3.15, *Public Services,* and Section 3.19, *Utilities and Service Systems,* of the Initial Study (Appendix A).

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Construction of the proposed project would generate short-term employment that would be absorbed from the regional labor force, so it would not attract new workers to the region. There would be no operational changes under the proposed project compared to existing conditions.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

The proposed project would support and enhance athletic programs at the school. District approval would not set a precedent that could encourage and facilitate local and regional activities and government actions that could significantly affect the environment. School construction activities to enhance educational and athletic programs are common state- and nationwide.

11. Organizations and Persons Consulted

San Bernardino County Fire Protection District

Dan Mejia, Assistant Chief, Division 2 – East Valley

San Bernardino County Sheriff Department

Captain James William, Yucaipa Patrol Station

11. Organizations and Persons Consulted

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12. Qualifications of Persons Preparing EIR

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12. Qualifications of Persons Preparing EIR

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13. Bibliography

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Appendix A Initial Study/Notice of Preparation (NOP) and Comments

Appendices

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November 2021 | Initial Study EIR Scoping Document

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM PROJECT

Redlands Unified School District

Prepared for:

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PLACEWORKS

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Abbreviations and Acronyms

AAQS	ambient air quality standards
AB	Assembly Bill
ACM	asbestos-containing materials
ADT	average daily traffic
amsl	above mean sea level
AQMP	air quality management plan
AST	aboveground storage tank
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CAA	Clean Air Act
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfs	cubic feet per second
CGS	California Geologic Survey
CMP	congestion management program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level

Abbreviations and Acronyms

CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Corps	US Army Corps of Engineers
CSO	combined sewer overflows
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCM	Highway Capacity Manual
HQTA	high quality transit area
HVAC	heating, ventilating, and air conditioning system
IPCC	Intergovernmental Panel on Climate Change
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LBP	lead-based paint
LCFS	low-carbon fuel standard
LOS	level of service
LST	localized significance thresholds
M_W	moment magnitude
MCL	maximum contaminant level
MEP	maximum extent practicable
mgd	million gallons per day
MMT	million metric tons

Abbreviations and Acronyms

MPO	metropolitan planning organization
MT	metric ton
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OES	California Office of Emergency Services
PM	particulate matter
POTW	publicly owned treatment works
ppm	parts per million
PPV	peak particle velocity
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RMP	risk management plan
RMS	root mean square
RPS	renewable portfolio standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	state implementation plan
SLM	sound level meter
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SQMP	stormwater quality management plan
SRA	source receptor area [or state responsibility area]
SUSMP	standard urban stormwater mitigation plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TNM	transportation noise model

Abbreviations and Acronyms

tpd	tons per day
TRI	toxic release inventory
TTCP	traditional tribal cultural places
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	urban water management plan
V/C	volume-to-capacity ratio
VdB	velocity decibels
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
WSA	water supply assessment

1. Introduction

Redlands Unified School District (RUSD or District) intends develop a stadium at Redlands East Valley High School (Redlands East Valley HS) over three phases. The proposed project would include a new track and synthetic grass football field (including scoreboard and competitive-level lighting), bleachers for 3,000 people, new visitor and home ticketing booth, concessions, custodial and restroom buildings, landscaping, and pedestrian and vehicle circulation access and entryway improvements. Redlands East Valley HS is located at 31000 East Colton Avenue in the Mentone community of unincorporated San Bernardino County, California. RUSD will serve as the Lead Agency for the proposed project in accordance with the California Environmental Quality Act (CEQA), Section 15051(c). This Initial Study is a preliminary evaluation of the potential environmental consequences associated with the proposed project. As part of the District's approval process, the proposed project is required to undergo an environmental review pursuant to CEQA. The lead agency uses the Initial Study analysis to determine whether an environmental impact report (EIR) or a negative declaration (ND) is required. If the Initial Study concludes that the project may have a significant effect on the environment, an EIR must be prepared. Otherwise, a ND or mitigated negative declaration (MND) is prepared.

1.1 PROJECT LOCATION

Redlands East Valley HS is located at 31000 East Colton Avenue (Assessor's Parcel Map Numbers 0299-031-30) in the Mentone community of unincorporated San Bernardino County, California (Figure 1, *Regional Location*). The Redlands East Valley High School Stadium project (proposed project) would be developed within the existing school campus. Specifically, the proposed project would disturb approximately 6.95 acres of the western side of the approximately 60.1-acre campus (project site). The proposed project would not impact other areas of the campus.

Regional access to the Redlands East Valley HS campus is provided by State Route (SR) 38 located 0.5 miles north of the project site and Interstate 10 located approximately 3 miles west and south (see Figure 1, *Regional Location*). Redlands East Valley HS is bounded by East Colton Avenue to the north, Opal Avenue to the west, King Street to the east, and agricultural uses to the south (Figure 2, *Local Vicinity* and Figure 3, *Aerial Photograph with Photo Locations*).

1.2 ENVIRONMENTAL SETTING

1.2.1 Existing Development and Use

Redlands East Valley HS campus is approximately 60.1 acres in size. The main eastern portion of the campus is generally configured with classroom buildings and student, staff, and visitor parking lots. The western portion of the campus is configured with athletic fields and amenities, including baseball and softball fields, tennis courts, hard courts, a track and field, restrooms, and an additional student parking lot. The northwest corner, north of the hard courts, also includes a drainage way and above grade utility infrastructure that is fenced off.

1. Introduction

The high school presently provides a total of 951 regular parking stalls and 37 handicapped. East Valley High School was built in the mid-1990s and has a 2020-21 enrollment of 1,892 students in grades ninth through twelfth (CDE 2021). The school operates a "collaboration day" schedule on Monday, which includes six 48 minute periods and regular day schedules Tuesday through Friday, which includes six 55 minute periods. Collaboration day school hours are Monday from 8:30 AM to 2:30 PM, and Regular Day school hours are Tuesday through Friday from 8:30 AM to 3:15 PM. After-school activities may conclude as late as 10:00 PM, including use of sport fields on the west side of the campus. The school also provides optional Period 0 or Period 7 Monday through Friday which occur one hour before and after the school hours.

The proposed project would be located on the western side of the Redlands East Valley HS campus. The project site encompasses existing sport fields, including football field and track and field, restrooms, hardcourts, parking lot, paved walkways, drainage way, utility infrastructure, and grassy areas. The project site is approximately 6.95 acres and is generally flat with a slope that runs along the eastern side of the project site. The football field is natural grass. The football field is surrounded by a clay track. There are eight existing hardtop courts to the west of the track and field, along Opal Avenue (See Figure 4, *Site Photos*).

During the school year, the existing track and field are regularly used by the high school for conducting athletic practices, physical education classes, and a variety of other scholastic-related events. The high school presently has no varsity events happen at complex, and it is used mainly for practice, physical education and lower-level competition. Football games generally occur Thursdays and Fridays from 7 PM to 9:30 PM. Home games occur at different facilities nearby in addition to the existing project site. Soccer home games generally occur Wednesday immediately after school until 6:30 PM for boys teams and Fridays immediately afterschool until 6:30 PM for girls teams, with Junior Varsity (JV) playing before Varsity for both teams. Additionally, track and field events typically occur Thursday after school until 6 PM, and cross country events typically occur on Saturday mornings, starting at 7:30 AM, however track and field and cross country events do not currently occur at the project site. Currently, Redlands East Valley HS hosts around 30 games/events per season, including lower-level sporting events, and 30 games/events are hosted at other facilities. Historically, Redlands East Valley HS averages about 100 to 200 spectators per game and/or event at the existing track and field.

In addition to Redlands East Valley HS uses, outside sporting groups and non-school related events have been individually permitted by RUSD to use the practice field. Currently there is only one non-school related event that uses the stadium, a fundraiser walk, which occurs once per year. Occasional joggers and walkers use the track and field.

1.2.2 Parking and Access

Main vehicular access to the Redlands East Valley HS campus is provided along East Colton Avenue with three access points that lead to the primary parking lots. Two additional access points are located on King Street along the east side of the campus provide access to the primary parking lots, and one additional access point is provided on Opal Avenue that provides access to the surface parking lot onsite. The primary campus parking lot on the northeast portion of the campus along East Colton Avenue, offering 858 spaces. Additional parking is available in a parking lot located on the west side of the Redlands East Valley HS campus on the surface

parking lot on the project site. The surface parking lot on the project site accessed via Opal Avenue currently includes 78 parking spaces. In total, the currently campus provides 936 parking spaces.

Pedestrian access to the project site includes crosswalks at the intersections along Colton Avenue, and a sidewalk surrounding the perimeter of the campus on the north, east, and west sides. The campus includes internal walkways and paths between buildings throughout the campus and includes a path between the two baseball fields connecting the buildings on campus to the sports fields.

1.2.3 Existing Land Use

Redlands East Valley HS is within an unincorporated area of San Bernardino County. According to the San Bernardino County Zoning District Maps, the project site is designated as "IN" Institutional (San Bernardino 2021). The San Bernardino General Plan Land Use map designation is "PF" Public Facility (San Bernardino 2020)

The proposed project would be developed onsite within the boundaries of the existing Redlands East Valley HS campus, and no new property acquisition would be required to implement the proposed project. The proposed project's development would not require modification to the project site's current General Plan and zoning designations.

1.2.4 Surrounding Land Use

The project site is bordered by East Colton Avenue and an active development site across Colton Avenue to the north. The Redlands East Valley HS baseball fields to the east, a single-family residential dwelling and an agricultural orchard to the south, and Opal Avenue to the west. A single-family and multifamily neighborhood and a paper supply company are to the west of the campus, across Opal Avenue. See Figure 3, *Aerial Photograph with Photo Locations*, and Figure 5, *Surrounding Land Use Photos*.

The properties surrounding the project site are zoned Community Industrial to the north and west, single residential to the northeast, rural living-5 acre minimum to the east and south, rural living-5 acre minimum-agricultural preserve to the southeast, and multiple residential to the west (San Bernardino 2021). The surrounding General Plan Lan Use designation include Limited Industrial to the northwest, Low density residential to the north, very low density residential to the east and south, and medium density residential to the west (San Bernardino 2020).

1. Introduction

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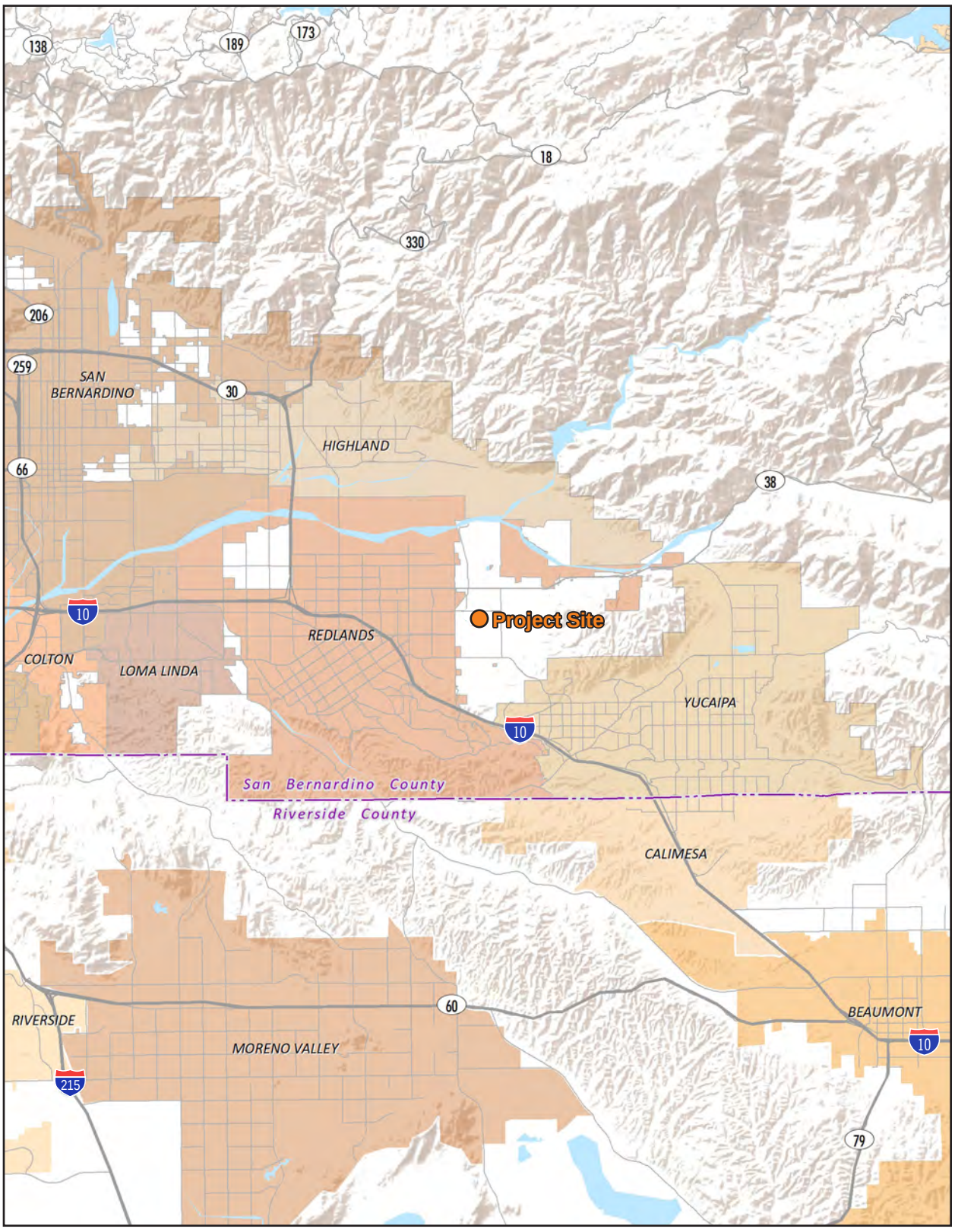
Figure 1 - Regional Location



Note: Unincorporated county areas are shown in white.

Source: ESRI, 2021

0 3
Scale (Miles)

1. Introduction

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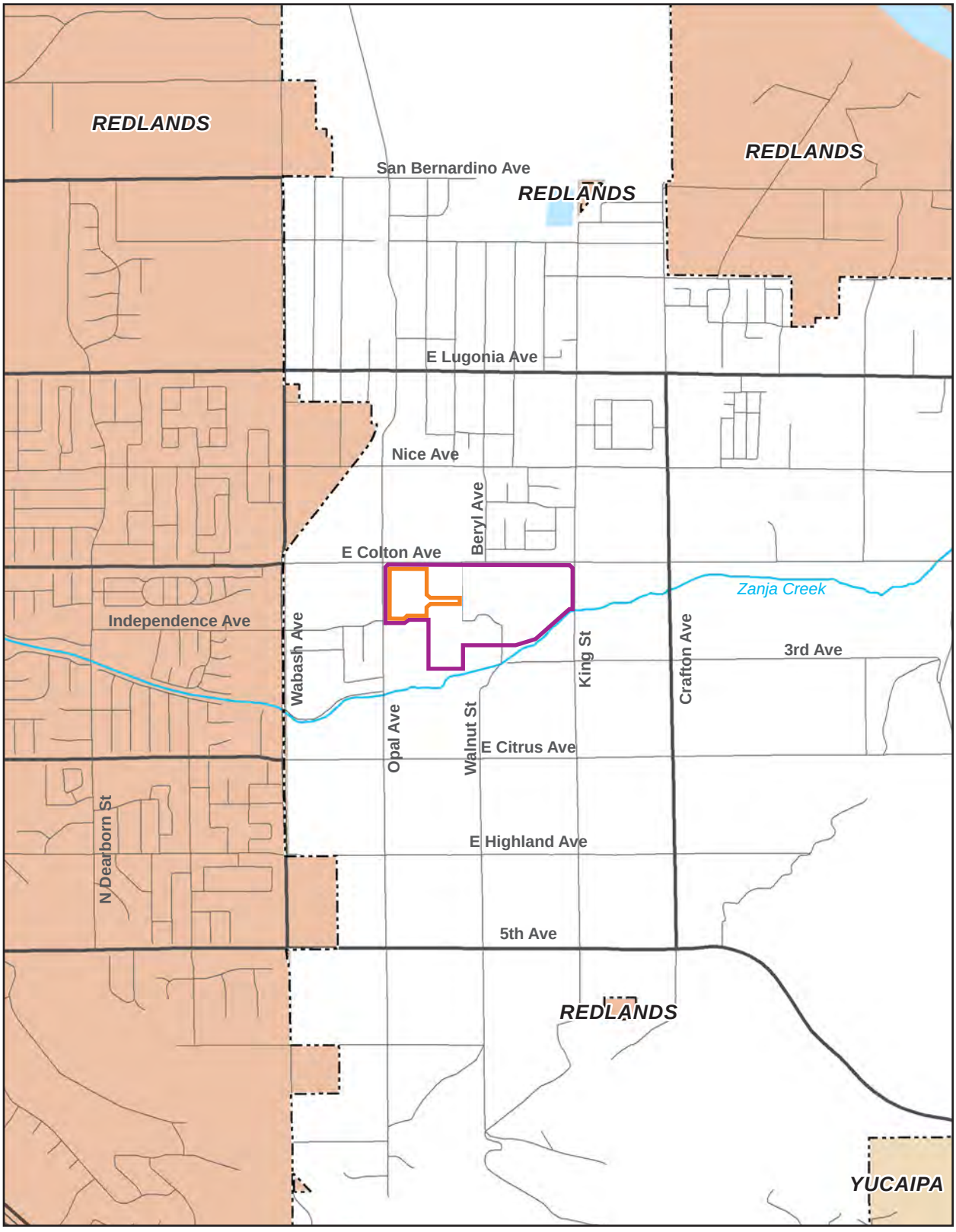
Figure 2 - Local Vicinity



School Boundary Project Site Boundary

Note: Unincorporated county areas are shown in white.

Source: ESRI, 2021

0 2,000
Scale (Feet)

1. Introduction

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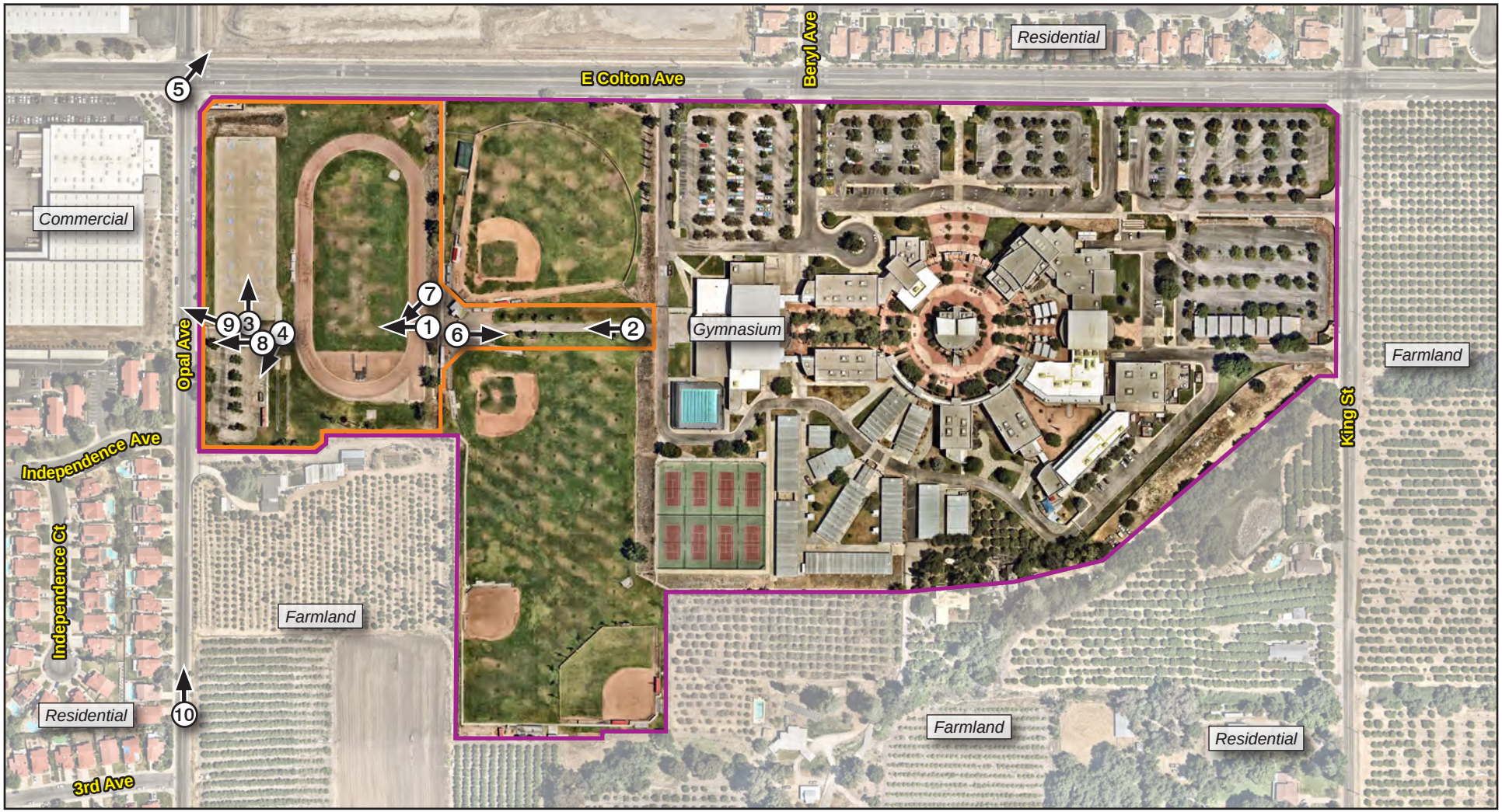
Figure 3 - Aerial Photograph with Photo Locations



Source: Nearmap, 2021

1. Introduction

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Figure 4 - Site Photographs

View 1: From the east side of the track and field, looking west at the track and field on the project site.

View 2: From the gymnasium building to the east of the project site, looking west towards the west side of the project site.

View 3: From the south side of the hardtop basketball courts onsite, looking north at the basketball courts and towards the north side of project site.

View 4: From the northeast corner of the existing surface parking lot onsite, looking southeast at the parking lot.

Source: PlaceWorks, 2021

1. Introduction

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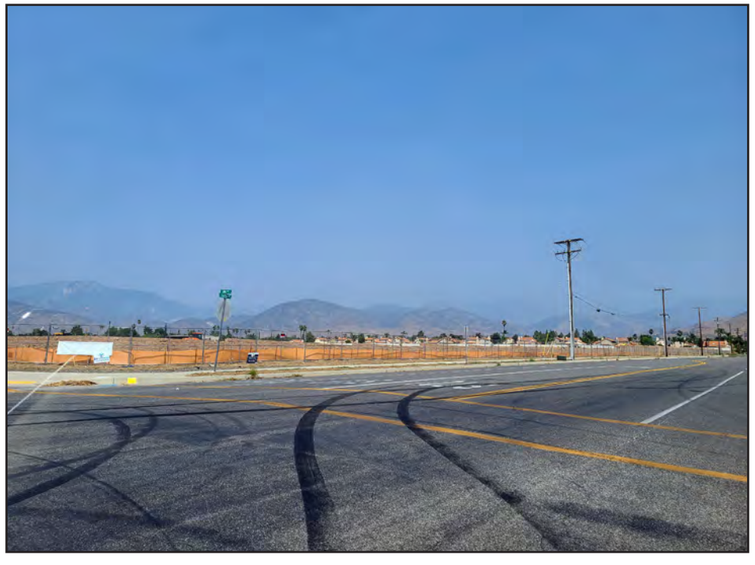
Figure 5 - Surrounding Land Use Photographs



View 5: From the intersection of Colton Avenue and Opal Avenue, looking northeast at the active construction site north of the project site and the residential neighborhood to the northeast of the project site.

View 6: From the east side of the project site, looking east towards the east side of the Redlands East Valley High School campus.

View 7: From the east side of the track and field, looking southwest towards the residential and agricultural uses to the south of the project site.

View 8: From the existing parking lot on the west side of the project site, looking southwest at the residential uses along Opal Avenue.

View 9: From the existing parking lot on the west side of the project site, looking northwest at the industrial use along Opal Avenue.

View 10: From Opal Avenue, south of the project site, looking north along Opal Avenue at the residential and agricultural uses along Opal Avenue.

Source: PlaceWorks, 2021

1. Introduction

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1.4 PROJECT DESCRIPTION

1.4.1 Proposed Development

The proposed new football stadium and track and field facilities and associated improvements would replace the existing football field and track facilities. Plans include bleacher seating for 3,000 people, lighting, a home ticket booth and restroom/concession building, and visitor ticket booth and restroom/concession building. The proposed project would also include various improvements to landscaping, new chain-link fencing, access and circulation improvements, and emergency access.

The new stadium would allow Redlands East Valley High School to hold home games at its own campus. The high school presently conducts its football home games and track meets at various locations, including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. The onsite stadium would eliminate the need to bus event participants, e.g., coaches, athletes, and band members, to home games. The new stadium/track and field facility would also serve as a source of school and community pride by providing the high school with a state-of-the art facility, while at the same time increasing the quality of the high school's athletic curriculum.

1.4.1.1 STADIUM

The proposed project would demolish the existing track and field and regrade and recompact the project site to allow for the proper base and slope for the proposed improvements. Site demolition will also include removal of associated concrete and hard surfaces and five trees along the eastern side of the project site. The proposed project will also relocate the existing metal storage container that currently sits on the southeast corner of the parking lot along Opal Avenue.

The proposed track and field would be sited approximately 45 feet south of Colton Avenue (approximately 48 feet north of the footprint of the existing track and field), which is approximately 49 feet closer to Colton Avenue than the existing track and field. The new field will be synthetic turf for soccer and football. The new track will be synthetic and contain nine lanes. Long and triple jump zone and a new vehicle access gate to the track on the south side of the new track. High jump and discuss zones will be provided on the north side of the track. The sport field and track will be surrounded by a new four-foot-high chain link fence and eight-foot-wide concrete walkway. A new scoreboard with steel and support structure and a 35-foot flagpole will be installed on the north end of the track and walkway. Four new Musco stadium lights[1] will be installed around the track and field, two on the east side at the top of the slope and two on the west side adjacent to the existing hardtop courts. The eastern stadium lights would be 90 feet tall and would be located on either side of the stadium seating facing to the west towards the football/soccer field. The western stadium lights would be 80 feet tall, set 12 feet above grade and would be located behind the stadium seating on either end facing towards

[1] Musco Lighting is a company and brand that designs and manufactures sport field lighting in addition to other lighting solutions (https://www.musco.com/).

the east onto the football/soccer field. Each stadium light pole would include 11 lighting fixtures at the maximum height and two to three fixtures.

The proposed project's development would also involve the installation of bleacher seating and a public address system. The public address system includes six EV. S x 600 High-Output Indoor/Outdoor Speakers. Four speakers would be located at the back of the bleachers on the home side at 42 feet tall two additional speakers would be located at the middle of the visitor side bleachers at 37 feet tall. All size speakers would be positioned in a downward angle. As shown in Figure 6, *Conceptual Stadium Site Plan*, the stadium would include separate bleachers for home and visiting team spectators, providing a combined seating capacity for 3,000 spectators. The 2,000 home team bleachers and a press box would be installed on the east side of the football field, and 1,000 visiting team bleachers would be installed on the west side of the playing field. The proposed bleacher structures would be of aluminum construction and installed on a concrete foundation.

The proposed project would construct a new visitor ticket booth, concessions, custodial and restroom building that would be approximately 1,711 square feet and one story(approximately 14.5 feet above grade); this building will be located on the southwest of the proposed track and field. The proposed project would also construct a new home ticket booth, concessions, custodial, and restroom building that would be approximately 5,417 square feet and two stories high (approximately 16.5 feet relative to upper grade and 28 feet relative to field grade); this building will be located to the southeast of the proposed track and field.

The proposed project would also include other common or associated amenities, such as the security fencing, landscaping and groundcover, walkways, and a subsurface drainage system to manage stormwater drainage throughout the project site.

1.4.1.2 PEDESTRIAN ACCESS, FENCING, AND VEHICULAR PARKING

The proposed project includes pedestrian access and improvements from the west side (visitor side) and the east side (home side). The visitor side includes fencing along the basketball courts and fencing between the parking lot and visitor ticket booth. Pedestrian access from the visitor parking lot through a gate adjacent to the visitor ticket booth and onto concrete pavement. The home side includes fencing between the baseball fields with a gated entrance, and a walking path from the eastern portion of the campus between the baseball fields, lined with trees and gated for access to the stadium. Additional fencing is provided along Colton Avenue from Opal Avenue to the driveway adjacent to the baseball fields. The visitor side of the proposed project would be accessed from Opal Avenue. The existing parking lot would be used as visitor parking. The existing hardtop basketball court would be used for overflow event parking, when necessary, with access via the parking lot on the west side of the project site. The overflow parking can accommodate up to 150 additional vehicles. The overflow parking lot would provide an additional 150 parking stalls.

1.4.1.3 EMERGENCY ACCESS

The proposed project would provide emergency access to the field with a fire access road from the southwest parking lot which would access the field along the south end. Additionally, the walking path from the central school campus and facilities to the fields would be widened to provide direct fire access.

1.4.2 Use and Scheduling

The proposed project is primarily intended to facilitate interscholastic athletic events and competitions, including football games and track meets. The facility would also be used for athletic team practices, band and color guard practices and occasional classroom activities, rallies, assemblies, and other academic functions. The proposed project would allow the District to host varsity events onsite. As scheduling permits, the proposed project may also accommodate a variety of community-sponsored events in accordance with the Civic Center Act (Education Code Section 38130–38139) and District policy.

The District anticipates the scheduling of approximately 60 events/games per year that require the use of the stadium's public address and/or field lighting systems, five of which would have the potential to be full capacity. All of the 60 events/games that would be held at the project site are existing events. Thirty of these events/games currently exist onsite and thirty events/games would be relocated from other facilities; no new events would occur on the project site. The most heavily attended stadium events would be football games. An additional number of games, likely no more than two, would be scheduled depending on the team's playoff status. Homecoming, games between local school rivals, and possible playoff games could result in maximum-capacity crowds. Occasional special events, such as rallies, may also result in capacity-sized crowds. As such, approximately five capacity events are anticipated per year which would have the potential to reach crowds of over 2,000 spectators.

The District anticipates the scheduling of approximately three home football games per year each for varsity and Freshman teams. High school football season generally extends from the end of August through the middle of November, depending on team playoff status. Varsity games would generally be scheduled on Thursday and Friday evenings between the hours of 7:00 PM and 9:30 PM. Freshman games would be scheduled immediately following the end of the school day on Thursday or Friday afternoons. The stadium's field lights would be in operation for approximately four hours during any single evening, with lights being turned off by 10:30 PM. Football practice sessions at the stadium would occur on a regular basis and may, when necessary, utilize the stadium's lighting system, with lights being shut off before 9:00 PM.

Track season takes place during the late winter and spring months. The District anticipates the scheduling of approximately three home track meets during the average school year. Track and field meets would generally be conducted on Thursday after school until 6 PM, and cross county competitions would be held on Saturdays , starting at approximately 7:30 AM. Track and field meets are usually held during daylight hours, and generally do not require the use of stadium lights. However, there a possibility that some meets may require use of the lighting system. Lights would be turned off prior to 10:30 PM.

Soccer take place during the late winter and spring months home games generally occur Wednesday immediately after school until 6:30 pm for boys teams and Fridays immediately afterschool until 6:30 for girls teams, with JV playing before Varsity for both teams. Each team (Girls JV, Girls V, Boys JV, and Boys V) have 5 home games per year, for a total of 20 homes games typically occurring with JV and Varsity games occurring consecutively. Soccer Games at the stadium may, when necessary, utilize the stadium's lighting system, with lights being shut off before 9:00 PM.

1. Introduction

Other school uses may include band and color guard practices and competitions, classroom activities, and possibly rallies and assemblies, most of which would be conducted during daylight hours. The high school's band would use the stadium and lighting system one or two nights a week during football season for practice. Band practice would conclude by approximately 9:00 PM. It is anticipated that daily physical education classes would not normally utilize the stadium facility. Additionally, some summer events may occur at the project site, and would be shown in the school's event schedule.

In addition to scholastic-related uses, the proposed project may also accommodate a variety of community-sponsored events and activities, potentially including youth soccer practices and youth football. Stadium use by community organizations would be subject to approval by the District and the Civic Center Act. Community events would generally be scheduled on weekends and would conclude by 10:00 PM. Currently, one community-sponsored event (a fundraiser walk) uses the facilities, which occurs one time per year.

1.4.3 Project Phasing

The proposed project would be constructed in three phases, with construction activities anticipated to begin in April 2022 and completed in June 2026. Figures 7 to 9 for site plans for each phase.

1.4.3.1 PHASE 1

Phase 1 of the proposed project includes installing artificial turf sport field, installation of 9-lane synthetic track and track and field spaces, four Musco stadium lights, and public address system. This would include installation of the scoreboard and flag pole, trenching and installation of underground utilities, construction of concrete walking path around the track, installing stadium fencing, parking lot restriping, and relocation of the metal storage container on the southeastern corner of the parking lot. Following the completion of this phase, the project site would host home track and field events, and varsity soccer for boys and girls teams, without bleachers. Refer to Figure 7, *Phase 1 Site Plans*.

1.4.3.2 PHASE 2

Phase 2 would include the installation of a 1,000-person bleacher on the visitor team side and a 2,000-person bleacher on the home team side. Phase 2 would include construction of the new visitor concessions/restroom/ticket booth building and pedestrian entry improvements, as well as emergency access improvements such as access gate, roadway, and fire hydrant. This phase also includes new chain-link fencing, trees, irrigation, and turf surrounding the stadium and basketball courts, landscape improvements and fencing around the baseball fields and the walking path to the stadium, and several new concrete pavement areas. Following completion of phase 2, full use of stadium for football games and other events would occur. Refer to Figure 2, *Phase 2 Site Plans*.

1.4.3.3 PHASE 3

During Phase 3, the construction of the home concession/restroom buildings and entry improvements would occur. The new home concession/restroom building would include a ticket booth, concessions, custodial space, and restrooms. Additionally, new masonry and landscaping would occur between the access point near the

baseball fields to the home concession building. This phase also includes upgrades to the walking path on the home side to allow fire access and staircase to the stadium for direct fire access. Refer to Figure 3, *Phase 3 Site Plans*.

1.5 DISCRETIONARY APPROVALS

The Redlands Unified School District is the Lead Agency under CEQA and has the approval authority over the proposed project. Discretionary actions for the proposed project would include: (1) certification of the environmental document and (2) approval of the proposed project.

1.6 OTHER AGENCY ACTION REQUESTED

The Redlands Unified School District is the Lead Agency under CEQA and has the approval authority over the proposed project. The District would require approval and/or coordination from the following agencies to implement the proposed project.

State Agencies

The District will seek approval of the proposed project from the Division of the State Architect (DSA). Since the project will not receive state funding, CDE and DTSC approvals are not required.

Local Agencies

The District would require approval of the addition of a new fire hydrant from San Bernardino County Fire Department.

1. Introduction

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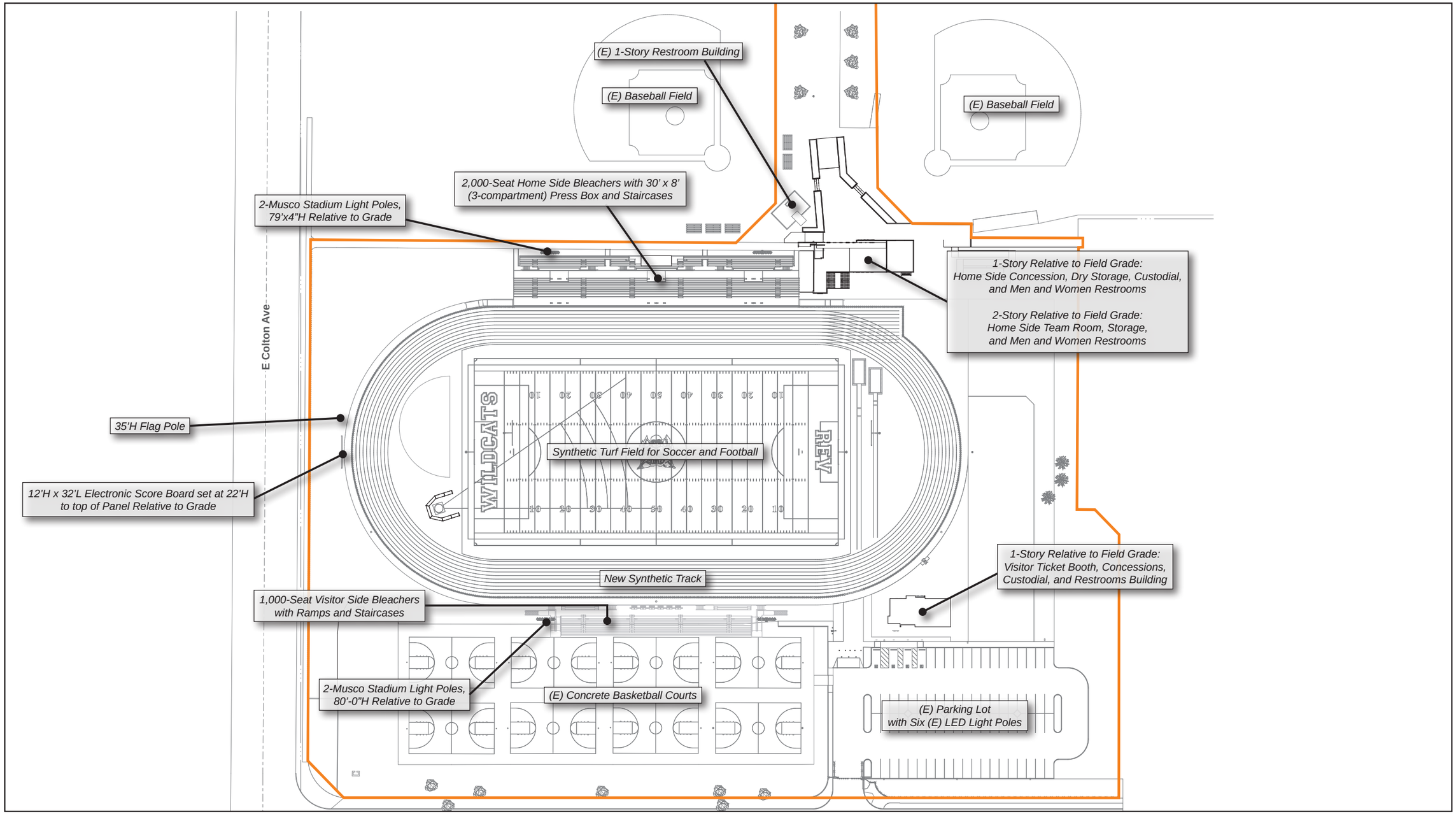
Figure 6 - Site Plan



Source: PCH Architects, 2021

1. Introduction

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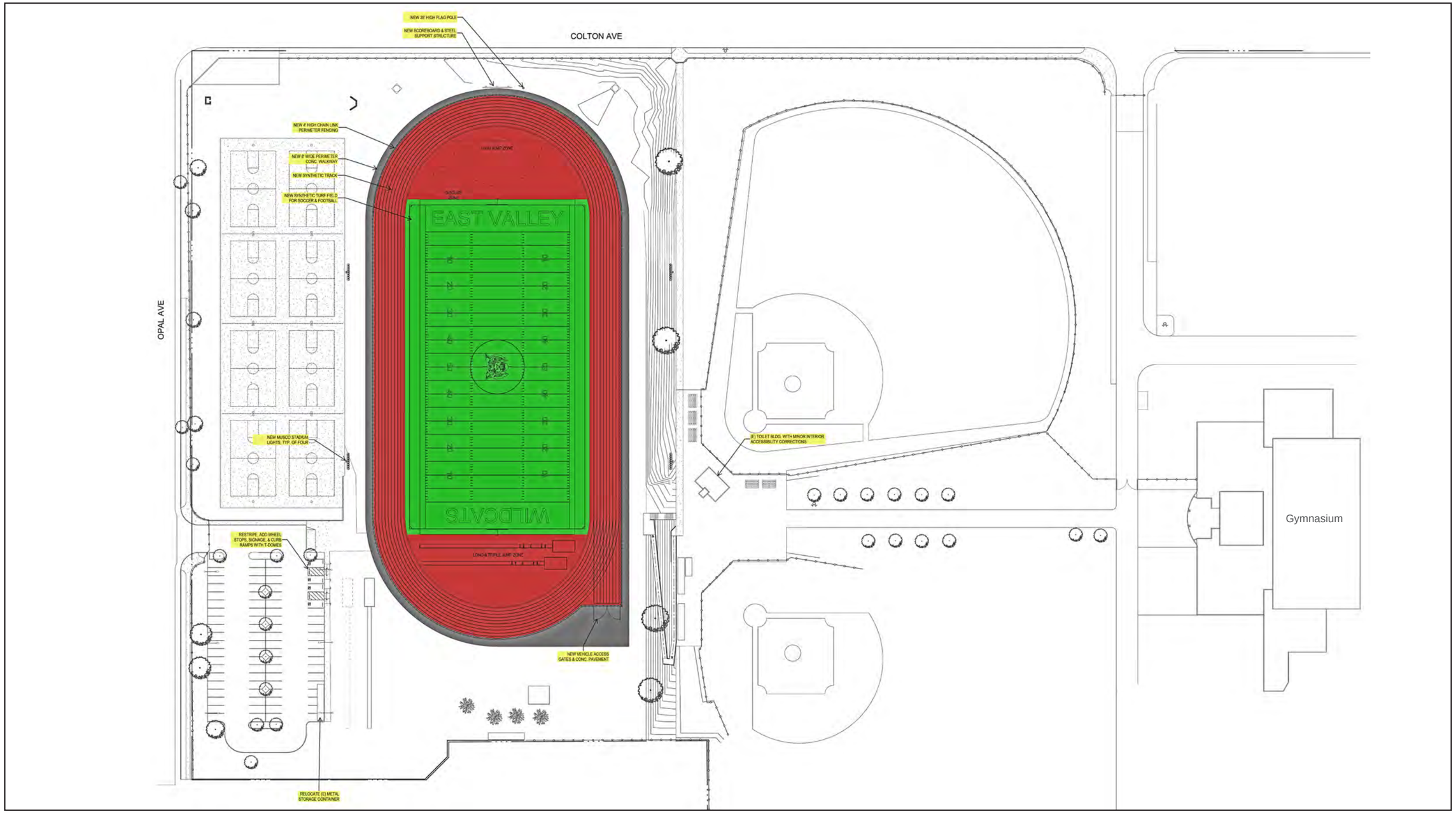
Figure 7 - Phase 1 Site Plans



Source: PCH Architects, 2021

1. Introduction

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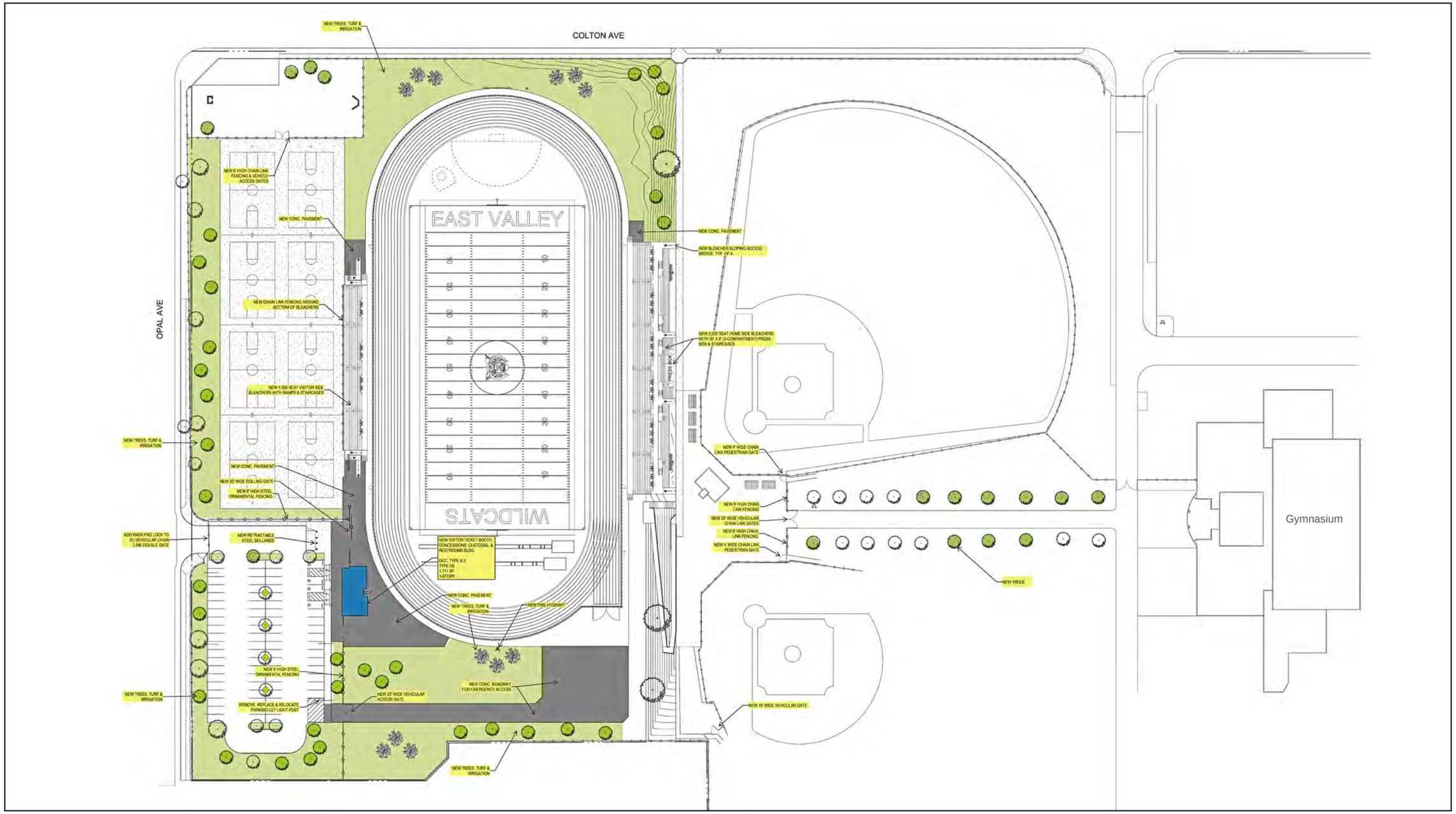
Figure 8 - Phase 2 Site Plans



Source: PCH Architects, 2021

1. Introduction

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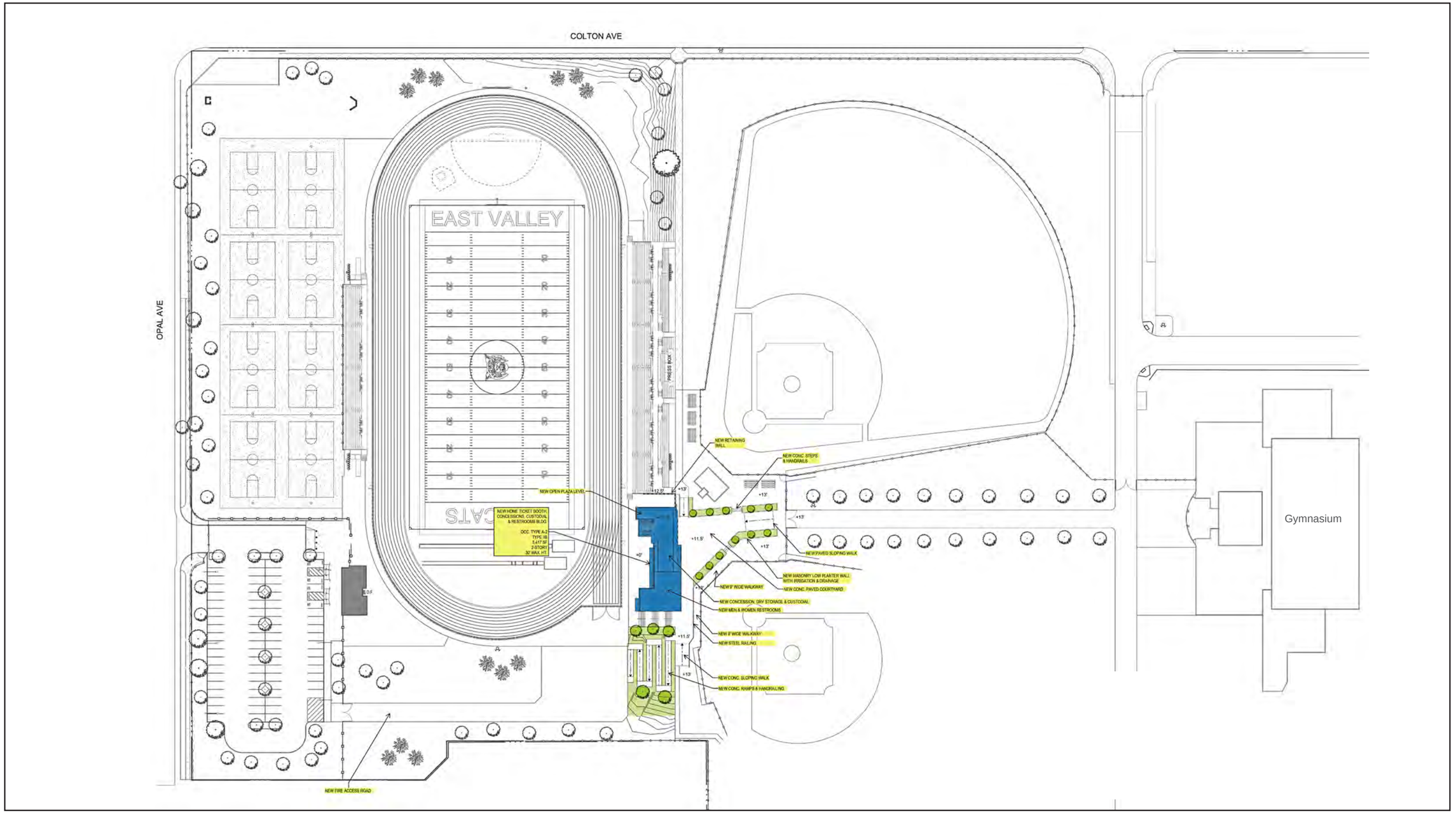
Figure 9 - Phase 3 Site Plans



Source: PCH Architects, 2021

1. Introduction

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2. Environmental Checklist

2.1 PROJECT INFORMATION

1. **Project Title:** Redlands East Valley High School Stadium Project

2. **Lead Agency Name and Address**:
   Redlands Unified School District
   20 W. Lugonia Avenue
   Redlands, CA 92374

3. **Contact Person and Phone Number:**
   Ken S. Morse, Coordinator, Operations & Facilities Planning
   (909) 748-6730

4. **Project Location:** The project site is located at 31000 East Colton Avenue (Assessor's Parcel Map Numbers 0299-031-30) in the Mentone community of unincorporated San Bernardino County, California

5. **Project Sponsor's Name and Address:**
   Redlands Unified School District
   20 W. Lugonia Avenue
   Redlands, CA 92374

6. **General Plan Designation:** The project site is designated as "PF" Public Facility in the San Bernardino General Plan Land Use map.

7. **Zoning:** The project site is designated as "IN" Institutional in the San Bernardino County Zoning District Maps.

8. **Description of Project:** Redlands Unified School District intends to redevelop the stadium at Redlands East Valley High School over three phases. The proposed project would include a new track and synthetic grass football field (including scoreboard and Musco field lights), bleachers for 3,000 people, new visitor and home ticketing booth, concessions, custodial and restroom buildings, landscaping, and pedestrian and vehicle circulation access and entryway improvements.

9. **Surrounding Land Uses and Setting:** The project site is bordered by East Colton Avenue and an active development site across Colton Avenue to the north. The Redlands East Valley HS baseball fields to the east, a single-family residential dwelling and an agricultural orchard to the south, and Opal Avenue to the west. A single-family and multifamily neighborhood and a paper supply company are to the west of the campus, across Opal Avenue. The properties surrounding the project site are zones Community Industrial to the north and west, single residential to the northeast, rural living-5 acre minimum to the east and south, rural living-5 acre minimum- agricultural preserve to the southeast, and multiple residential to the west.

2. Environmental Checklist

The surrounding General Plan Lan Use designation include Limited Industrial to the northwest, Low density residential to the north, very low density residential to the east and south, and medium density residential to the west.

10. Other Public Agencies Whose Approval Is Required (e.g., permits, financing approval, or participating agreement):

State Agencies

- Division of the State Architect (DSA)

Local Agencies

- Mentone community of unincorporated San Bernardino County
- San Bernardino County Fire Department

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.94 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

The proposed project would comply with tribal consultation requirements pursuant to Assembly Bill 52 (AB 52). One California Native American tribe, the San Manuel Band of Mission Indians is on the RUSD's notification list pursuant to AB 52. The District provided a notification letter to this tribe on November 9, 2021 and as of the time of publication of this Initial Study, no response has been received.

2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

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

2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature — *Date* 11/19/21

2.4 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063I(3)(D). In this case, a brief discussion should identify the following:

   a) **Earlier Analyses Used.** Identify and state where they are available for review.

   b) I**mpacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In nonurbanized areas, 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 publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	X			
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	X			
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the **state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment** project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
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 California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
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
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	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
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	X			
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			
c) Expose sensitive receptors to substantial pollutant concentrations?	X			
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	X			
IV. BIOLOGICAL RESOURCES. Would the project:				
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
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 Wildlife or U.S. Fish and Wildlife Service?				X
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
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
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			X	
c) Disturb any human remains, including those interred outside of formal cemeteries?			X	

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	X			
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	X			
VII. GEOLOGY AND SOILS. Would the project:				
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 a 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
b) Result in substantial soil erosion or the loss of topsoil?			X	
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
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	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	X			
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
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	

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	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	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
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
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	X			
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
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 a 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 offsite;	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; or	X			
iv) impede or redirect flood flows?	X			
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?				**X**
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**
XIII. NOISE. Would the project result in:				
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**			
b) Generation of excessive groundborne vibration or groundborne noise levels?	**X**			
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**	
XIV. POPULATION AND HOUSING. Would the project:				
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**
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				**X**
XV. PUBLIC SERVICES. Would the project:				
a) 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:				
Fire protection?	**X**			
Police protection?	**X**			
Schools?				**X**
Parks?				**X**
Other public facilities?			**X**	
XVI. RECREATION.				
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**

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	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
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	X			
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	X			
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			
d) Result in inadequate emergency access?	X			
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 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:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	X			
ii) 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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	X			
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
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	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
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	

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	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	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
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
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
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.				
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	
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			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

2. Environmental Checklist

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3. Environmental Analysis

Section 2.4 provided a checklist of environmental impacts. This section provides an evaluation of the impact categories and questions contained in the checklist and identifies mitigation measures, if applicable.

3.1 AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:

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

Less Than Significant Impact. A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape feature (e.g., a mountain range, lake, or coastline) or of a significant historic or architectural feature (e.g., views of a historic structure). Although the project site is located in a developed urban area and is not part of a scenic vista, views around the project site include the San Bernardino Mountains in the distance.

The proposed project would develop a stadium at the project site that would include bleachers, new visitor and home ticketing booths, concessions, custodial and restroom buildings, a new scoreboard with steel and support structure, a 35-foot flagpole on the north end of the track, and four new stadium lights around the track and field. As described in section 1.4.1, *Project Development*, the eastern stadium lights would be 90 feet tall and would be located on either side of the stadium and the western stadium lights would be 80 feet tall, set 12 feet above grade, and would be located behind the stadium seating on either end. These proposed lighting features and building at the project site would be consistent with the overall existing character and features of the campus and would not result in substantial adverse changes to the project site. Additionally, from its location, proposed project amenities would primarily be visible to those visiting the project site and the adjacent roadways, residences and businesses. The proposed project, including the light poles, would not substantially interfere with views of the San Bernardino Mountains. Thus, the proposed project would not result in a substantial adverse effect to scenic vistas from the project site, when compared to existing conditions. Therefore, impacts would be less than significant. This issue will not be reviewed further in the EIR.

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

No Impact. The proposed project would involve the development of new athletic facilities on the campus of an existing high school. The nearest officially designated state scenic highway is a portion of State Route 38 (SR-38) beginning at Post Mile (PM) 31 and ending at PM 46.7, located approximately 19 miles northeast of the project site. Additionally, the nearest eligible scenic highway is located approximately 0.5-mile north of the project site, on SR-38, beginning at PM S0.372 and ending at PM 49.5 (Caltrans 2021). The project site is not located near a scenic highway and no damage to any scenic resources within a state scenic highway would result from project development. This issue will not be reviewed further in the EIR.

c) In nonurbanized areas, 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 publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Potentially Significant Impact. The proposed project would involve the construction of a new athletic stadium on the campus of an existing high school in an area presently developed with athletic facilities. Project development would not change the visual character of the site in this regard. The proposed project's development would not involve extensive grading or substantial changes in site elevation, and the project site does not contain habitat nor other significant natural features that could be considered a visual resource. The proposed project would include the installation of bleacher structures and stadium lighting. The stadium lighting would range from 80 to 90 feet in height. Installation of these features would be readily visible from the areas surrounding the project site, and particularly those nearby residences to the north and east of the site. This issue will be further discussed in the EIR.

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

Potentially Significant Impact. The proposed project would include elevated field lighting to allow for the scheduling of nighttime games and activities. Use of high-intensity elevated lighting does have the potential to result in substantial changes to nighttime light levels at neighboring residences. Lighting and glare impacts resulting from the proposed project will be addressed further in the EIR.

3.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

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 California Resources Agency, to non-agricultural use?

No Impact. The proposed project would be developed on the campus of an established high school. The project site is identified as Urban Built-Up Land and is not identified as an area of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2021a). The project site is adjacent to a residential development and agricultural fields, but they are not designated as unique farmland, prime farmland, or farmland of statewide importance. Operation of the proposed project would be limited to the project site, and the proposed project would not physically impact nor alter the use of the existing agricultural fields. Further,

the project site's developed state, current use as a school campus, and relatively small acreage preclude its use for significant large-scale agricultural uses. No significant impacts to any farmland resources would result from the development of the proposed project. This issue will not be reviewed further in the EIR.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. According to the San Bernardino County Zoning District Maps, the project site is designated as "IN" Institutional (San Bernardino 2021); additionally, the San Bernardino General Plan Land Use map designation is "PF" Public Facility (San Bernardino 2020). The proposed project site is not zoned for agricultural use and is not bound by a Williamson Act contract. While there are agricultural uses to the south of the project site, development and operation of the proposed project would occur within the boundaries of the project and would not conflict with neighboring agricultural uses. Development of the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. This issue will not be reviewed further in the EIR.

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))?

No Impact. The project site is currently zoned "IN" Institutional and has a General Plan land use designation of "PF" Public Facility. The project site is on the Redlands East Valley HS campus and currently developed with a track and field, surface parking lot, hardtop basketball courts, walkways and supporting structures. No forested land nor timberland exist onsite. Further, the proposed project site is not zoned for forest land or timberland. Therefore, development of the proposed project would not conflict with existing zoning for forestland or timberland. This issue will not be reviewed further in the EIR.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed project site is located on the campus of an existing high school within an urbanized area, and no significant forest land uses are present onsite nor in the immediate vicinity. Development of the proposed project would not require any changes to the existing environment that could result in the conversion of forest land to non-forest use. No impacts would occur as a result of the proposed project. This issue will not be reviewed further in the EIR.

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?

No Impact. The project site is located on the campus of an existing high school within an urbanized area, and no significant agricultural uses or forest land uses are present onsite nor in the immediate vicinity. Development of the proposed project would not require any changes to the existing environment that could result in the conversion of farmland to nonagricultural uses or forest land to non-forest use. No significant impacts would occur as a result of the proposed project. This issue will not be reviewed further in the EIR.

3.3 AIR QUALITY

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

a) Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impact. Construction and operation of a new 3,000-seat stadium would generate criteria air pollutants that have the potential to increase the severity of the nonattainment designation of the South Coast Air Basin (SoCAB) or exceed the assumptions of the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan (AQMP). Potential impacts associated with consistency with the AQMP will be analyzed in the EIR.

b) Result in a 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?

Potentially Significant Impact. The SoCAB is designated nonattainment for ozone (O_3) and fine particulate matter ($PM_{2.5}$) under the California and National AAQS, nonattainment for particulate matter (PM_{10}) under the California AAQS, and nonattainment for lead (Pb) under the National AAQS (CARB 2018). Project-related construction or operational phases of the proposed project have the potential to exceed the SCAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB. Any project that produces a significant project-level regional air quality impact in a nonattainment area adds to the cumulative impact. Due to the extent of the SoCAB area and the number of cumulative project emissions, a project would be cumulatively significant when project-related emissions exceed the SCAQMD regional significance emissions thresholds (SCAQMD 1993). Therefore, air quality impacts of the proposed project will be examined further in the EIR.

c) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. Air pollutant emissions associated with the proposed project would occur over the short term from construction activities, and over the long term from project-generated vehicle trips and stationary sources. During construction activities, off-road equipment exhaust and fugitive dust have the potential to elevate concentrations of air pollutants at onsite and offsite sensitive receptors. Air pollutant emissions generated by the proposed project will be evaluated against SCAQMD's localized significance thresholds (LST). During operation, on-road emissions from vehicles traveling to and from the project site have the potential to generate elevated concentrations of carbon monoxide (CO) at congested intersections. Localized impacts from project-related construction and operational activities will be examined further in the EIR.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Potentially Significant Impact. Air pollutant emissions would occur over the short term for site preparation and construction activities, and over the long term associated with project-related vehicle trips generated during

operation. The EIR will evaluate the increase in air pollutant emissions generated by construction and operation of the proposed project against SCAQMD's regional significance thresholds. Mitigation measures will be recommended, if applicable, to minimize the proposed project's contribution to air pollutant emissions in the SoCAB.

3.4 BIOLOGICAL RESOURCES

Would the project:

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?

No Impact. The proposed project would be implemented on the campus of an existing high school, in an area currently developed with school-related facilities. The project site does not contain, or provide habitat for, any sensitive or special status species. Further, San Bernardino's Biotic Resources map identifies no areas of valued habitat at the site (San Bernardino 2012). According to this map, the closest critical habitat for a threatened and endangered species designated by the USFWS, is the San Bernardino kangaroo rat; additionally the three nearest habitats to the project site of species of special concern include the burrowing owl, California gnatcatcher, the, and the Santa Ana River Woolly Star. However, all habitats located are approximately 1.5 miles from the project site.

The proposed project would not result in direct or indirect impacts on any candidate, sensitive, or special status species or the elimination or modification of any natural habitat, which may provide habitat for any sensitive or special status species. Impacts relating to the removal of ornamental trees and vegetation would not constitute a constraint on the site's development and would be less than significant. This issue will not be reviewed further in the EIR.

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 Wildlife or U.S. Fish and Wildlife Service?

No Impact. The proposed project would be developed on the campus of an existing high school, which does not contain any riparian habitat (USFWS 2021). Further, according to San Bernardino's Biotic Resources map, the project site does not have sensitive natural community on the project site (San Bernardino 2012).

Project development would not impact riparian habitat or other sensitive natural communities identified in local, regional, or national plans, regulations, or policies. Construction of the proposed project would be confined to within the developed the project site. No additional areas of property would be acquired and no impacts to offsite areas of habitat would occur. This issue will not be reviewed further in the EIR.

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?

No Impact. According to the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI), the project site is developed and does not contain any wetland resources or other natural habitat. The proposed project would not have an adverse effect on federally protected wetlands (USFWS 2021). The project site is located approximately 0.2 mile north of an identified creek located south of the campus; however, the proposed project would be constructed and operated within the project site and would not affect this wetland. No impacts to state or federally protected wetlands would result from project implementation. This issue will not be reviewed further in the EIR.

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?

No Impact. Development of the proposed project would occur on the campus of an existing high school. The project site is currently development and does not contain habitat that is used as a migratory wildlife corridor nor a wildlife nursery. Construction and operation of the proposed project is limited to the project site. No impacts to wildlife movement nor wildlife nursery sites would occur as a result of the proposed project's construction and operation. This issue will not be reviewed further in the EIR.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact. The proposed project would be implemented within the boundaries of an existing high school campus, which does not contain a significant number of trees. However, a number of ornamental landscape trees are planted around the perimeter area of the proposed track and field location and within the existing parking lot. While impacts to the school's existing landscape would be avoided to the extent feasible, approximately five onsite trees would require removal to accommodate the proposed project, these tree species include *Pinus coulteri* (Coulter Pine) and *Acacia melanoxylon* (Blackwood Acacia). These species are not protected species.

The proposed project's development would not conflict with any applicable policies or ordinances protecting biological resources, including Goal NR-5 from the General Plan's Natural Resources Element that supports an interconnected landscape of open spaces and habitat areas that promotes biodiversity and healthy ecosystems. No significant impacts would occur as a result of the project's development and no mitigation measures are required. This issue will not be reviewed further in the EIR.

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?

No Impact. The project site is not located within the boundaries of a Habitat Conservation Plan (HCP) nor a Natural Community Conservation Plan (NCCP). Further, the project would be developed on the campus of

an existing high school within a developed urban area, and as discussed under checklist question 3.4(a), the project site does not contain sensitive habitat. Therefore, no impact would result from the development of the proposed project. This issue will not be reviewed further in the EIR.

3.5 CULTURAL RESOURCES

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

No Impact. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally a resource is considered "historically significant" if it meets one of the following ceria:

i) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

ii) Is associated with the lives of persons important in our past;

iii) Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

iv) Has yielded, or may be likely to yield, information important in prehistory or history.

According to the California Historical Landmarks database, California Register of Historical Resources, and National Register of Historic Resources Places, no listed or known archeological resources within are on the project site (OHP 2021; NPS 2021). Construction would be confined to the project site, which is located on the west side of the Redlands East Valley High School campus. The areas of the school campus proposed for development are presently developed with athletic fields and amenities, including baseball and softball fields, tennis courts, hard courts, a track and field, restrooms, and an additional student parking lot. Redlands East Valley High School began construction in 1995, and opened on September 9, 1997 (Redlands East Valley High School 2021); thus, all existing development on the project site post-dates 1995 and therefore has no historical significance. The proposed project does not involve the demolition or modification of any potentially historic structures, and no facilities eligible for historic preservation would be impacted by the project's development.

Based on this review of the project site, no significant historical resources would be impacted by project development. Additionally, no important or historically significant persons or events are known to be associated with the project site. No impact to historic resources would result from project construction and operation. This issue will not be reviewed further in the EIR.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less Than Significant Impact. The proposed project would require ground-disturbing activities and the construction of new buildings.

In the unlikely event that archaeological resources are discovered during excavation or grading, work would cease in the area of the find and a qualified archaeologist would be contacted. A qualified archaeologist will evaluate the find in accordance with federal, State, and local guidelines, including those set forth in the California Public Resources Code Section 21083.2. Consistent with regulatory requirements, personnel of the proposed project will not collect or move any archaeological materials and associated materials. Construction activity may continue unimpeded on other portions of the project site. The found deposits would be treated in accordance with federal, State, and local guidelines, including those set forth in California Public Resources Code Section 21083.2. Impacts would be less than significant. This issue will not be reviewed further in the EIR.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. A significant impact would occur if previously interred human remains would be disturbed during excavation of the project site. Given the project site was previously disturbed, it is unlikely to support conditions conducive to the discovery of human remains. However, there is a remote possibility that human remains could be encountered during excavation and grading activities associated with for the proposed project.

If human remains are encountered during ground-disturbing activities, California Health and Safety Code Section 7050.5 requires that disturbance of the site shall halt and remain halted. The county coroner shall investigate the circumstances, manner, and cause of any death and recommend the treatment and disposition of the human remains to the person responsible for the excavation or to his or her authorized representative, in the manner provided in Section 5097.98 of the California Public Resources Code. The coroner is required to make a determination within two working days of being notified of the discovery of the human remains. If the coroner determines that the remains are not subject to his or her authority or has reason to believe they are Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC), who will contact the "most likely descendant." The most likely descendant shall receive access to the discovery and will provide recommendations or preferences for treatment of the remains within 48 hours of accessing the discovery site. Disposition of human remains and any associated grave goods, if encountered, shall be treated in accordance with procedures and requirements in Sections 5097.94 and 5097.98 of the Public Resources Code; Section 7050.5 of the California Health and Safety Code; and CEQA Guidelines Section 15064.5.

While unlikely, any accidental discovery of human remains during project construction and operation would be required to comply with all applicable laws and regulations establishing the proper handling of human remains. Compliance with these laws and regulations would ensure that proposed project would result in a less than significant impact. This issue will not be examined further in the EIR.

3.6 ENERGY

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Potentially Significant Impact. Following is a discussion of the potential impacts related to the consumption of energy sources resulting from the construction and operational phases of development that would be accommodated by the proposed project.

Construction

Construction of the proposed project would require energy use to power the construction equipment. The energy use would vary during different phases of construction. Construction equipment would potentially include gas or diesel-powered machinery and/or vehicles. Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. Transportation energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline. Impacts related to energy use during construction would be addressed further in the EIR, and applicable mitigation measures would be identified.

Operation

The proposed project involves the construction of field lighting on the existing field and would result in an increase in energy consumption upon completion. The project site is currently developed with institutional uses. The existing facilities onsite consumes electricity for various needs, including but not limited to operation of electrical systems; lighting; and use of on-site equipment and appliances. Compliance with existing energy standards would minimize the environment impact of energy during operation. However, operation of the proposed project would have the potential to increase energy consumption that could significantly impact the environment. The EIR will evaluate the potential for the project to generate a substantial increase in energy use, and mitigation measures will be incorporated as needed.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Potentially Significant Impact. The state's electricity grid is transitioning to renewable energy under California's Renewable Energy Program. Renewable sources of energy include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Executive Order S-14-08, signed in November 2008, expanded the state's renewable portfolios standard (RPS) to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Senate Bill 350 also set a new goal to double the savings in electricity and natural gas through energy efficiency and conservation measures. On September 10, 2018, Governor Brown signed Senate Bill 100 (SB 100), which raises California's RPS requirements to 60

percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under SB 100 the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target. A project found to be consistent with the adopted implementation of state and local plans is presumed to have less than significant energy consumption impacts. Energy consumption will be addressed and reviewed in the EIR to determine the significance of potential impacts.

3.7 GEOLOGY AND SOILS

Would the project:

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 a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact. According to the DOC, no known faults or fault traces pass through the project site (DOC 2015). In addition, the project site is not located within an Alquist-Priolo Earthquake Fault Zone (San Bernardino 2020). The nearest Alquist-Priolo Earthquake Fault Zone is the Crafton Hills Fault, located about 2.6 miles southeast of the project site (DOC 2021b). The proposed project would not have substantial adverse effects involving Alquist-Priolo Fault Zones and surface rupture. No impacts would occur. This issue will not be reviewed further in the EIR.

ii) Strong seismic ground shaking?

Less Than Significant Impact. There are a number of faults in the southern California area that are considered active and can produce earthquakes that can cause ground shaking at the project site. All proposed structures would be constructed in accordance with applicable building codes and standards. The most recent building standard adopted by the legislature and used throughout the state is the 2019 version of the California Building Code (CBC) (Title 24, Part 2, California Code of Regulations). These codes provide minimum standards to protect property and the public welfare and safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock onsite, and the strength of ground motion with specified probability of occurring at the site. Additionally, the CBC requires the preparation of project-specific geotechnical/engineering reports by a Certified Engineering Geologist and/or Geotechnical Engineer prior to construction of the proposed structures. The proposed project would be required to comply with the recommendations contained in these reports. Any structures

built for this proposed project would adhere to the most recent version of the CBC. Impacts would be less than significant. This issue will not be reviewed further in the EIR.

iii) Seismic-related ground failure, including liquefaction?

No Impact. According to San Bernardino County's Geological Hazards Maps, the project site is not located within a Zone of Suspected Liquefaction Susceptibility or a generalized liquefaction susceptibility area (San Bernardino 2021). In general, liquefaction is a phenomenon that occurs where there is a loss of strength or stiffness in the soils that can result in the settlement of buildings, ground failure, or other hazards. The main factors contributing to this phenomenon are 1) cohesionless, granular soils having relatively low densities; 2) shallow groundwater (generally less than 50 feet); and 3) moderate to high ground shaking. The project site is not located within an area susceptible to liquefaction (DOC 2021c) As such, no liquefaction impacts would occur. This issue will not be reviewed further in the EIR.

iv) Landslides?

No Impact. According to San Bernardino County's Geological Hazards Maps, the project site is not located within a generalized landslide susceptibility area (San Bernardino 2021). Based on a review of the DOC's Landslide Information Maps and the United States Geological Survey (USGS) 7.5-minute Topographic Series, Redlands, California Quadrangle Map (DOC 2015, USGS 2018), the project site has a gentle gradient to the west. There are no large or steep slopes on or near the site. The lack of significant slopes on or near the project site indicates that there is not a significant hazard from slope instability, landslides, or debris flows at the project site. Based on the lack of significant slopes on or adjacent to the site, landslides are not expected at the project site. No impacts would occur. This issue will not be reviewed further in the EIR.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Erosion is a normal and inevitable geologic process whereby earthen materials are loosened, worn away, decomposed, or dissolved, and removed from one place and transported to another. Precipitation, water, waves, and wind are all agents of erosion. Ordinarily, erosion proceeds so slowly as to be imperceptible, but when the natural equilibrium of the environment is changed, the rate of erosion can be greatly accelerated. Accelerated erosion within an urban area can cause damage by undermining structures, blocking storm sewers, and depositing silt, sand, or mud in roads and tunnels. Eroded materials may eventually be deposited into local waters, where the carried silt can remain suspended in the water for some time, constituting a pollutant and altering the normal balance of plant and animal life.

Construction and operation of the proposed project may result in small amounts of soil erosion. However, the construction and operation of the proposed project would be required to comply with all applicable water quality regulations and standards and incorporate best management practices to reduce erosion. The proposed project would comply with the County General Plan's Hazards Element Policy HZ-1.8, which requires new development in medium-high or high wind erosion hazard areas to minimize the effects of wind-blown soil through building and site design features such as fencing, surface treatment or pavement, attenuation or wind barriers, architectural features, building materials, and drought resistant landscaping (San Bernardino 2020).

3. Environmental Analysis

Additionally, the project site is relatively level and contains no unusual geographic features. The proposed project would not result in exposing any soil at the project site for prolonged periods of time. Soils may be exposed during project construction, but that exposure would be temporary and would not result in substantial soil erosion.

Compliance with applicable regulations would ensure that the proposed project would in a less than significant impact to soil erosion and loss of top soil. This issue will not be reviewed further in the EIR.

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?

No Impact. Hazards arising from liquefaction and landslides would have no impact, as discussed above in sections a(iii) and a(iv).

Lateral spreading. Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. As discussed above, the project site is not located within a Zone of Suspected Liquefaction Susceptibility or a generalized liquefaction susceptibility area (San Bernardino 2021). Therefore, the proposed project would not expose people or the project site to adverse effects associated with lateral spreading. No impacts would occur.

Subsidence. The major cause of ground subsidence is withdrawal of groundwater. The project site is located within the Upper Santa Ana Valley – San Bernardino basin (California Department of Water Resources 2019). However, the proposed project would not increase withdrawal of groundwater and project implementation would not pose substantial hazards to people or structures due to ground subsidence. Therefore, no impacts would occur.

Collapsible Soils. Collapsible soils consist of loose, dry, low-density materials that are weakly cemented and that thus can collapse or be compressed with the addition of water or weight. Collapsible soils include young fine-grained alluvial materials, wind-deposited soils, and soils with salts. The project site is unlikely to have collapsible soils, as much of the Valley Region is covered with either alluvial or wind-blown soils (San Bernardino 2020). Therefore, no impacts would occur.

No impacts related to lateral spreading, subsidence, or collapsible soils would occur. This issue will not be reviewed further in the EIR.

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?

Less Than Significant Impact. Expansive soils swell when they become wet and shrink when they dry out, resulting in the potential for cracked building foundations and, in some cases, structural distress of the buildings themselves. The project site is located within the Valley Region of San Bernardino County, which is unlikely to have expansive soil (San Bernardino 2019). Standard grading technologies and compliance with current grading requirements in accordance with the seismic requirements of the California Building Code (CBC), CCR Title

24, and DSA seismic safety would reduce impacts from expansive soils to a less than significant level. This issue will not be reviewed further in the EIR.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

No Impact. Development of the proposed project would not require the installation of a septic tank or alternative wastewater disposal system. The proposed project would utilize the local sewer system. Therefore, no impacts would result from septic tank or other onsite wastewater disposal systems. This issue will not be reviewed further in the EIR.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. The Valley Region of San Bernardino County, in which the project site is located, is characterized by a broad valley floor deposit of Younger Alluvium (Q), which is likely underlain by Older Alluvium (Qoa) and Pleistocene-Pliocene Nonmarine Sediments (QPc), such the San Timoteo Formation. The Younger Alluvium (Q) across the valley floor is too young to preserve fossil resources in the upper layers, but the deeper layers and underlying sediments have high paleontological sensitivity, as do the Miocene Marine Sediments (M) (San Bernardino 2020).

The proposed project would require ground-disturbing activities. Therefore, the potential exists that construction of the proposed project and earthwork activities may unearth unknown paleontological resources. In the unlikely event that paleontological resources are discovered during earthwork activities, the proposed project would be required to comply with regulatory requirements in California Public Resources Code Section 21083.2, which requires the lead agency to make reasonable efforts to permit any or all resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to,(1) Planning construction to avoid archaeological sites, (2) Deeding archaeological sites into permanent conservation easements, and (3) Capping or covering archaeological sites with a layer of soil before building on the sites. Additionally, the proposed project would comply with the County General Plan's Resource Conservation Element Goal CR-2 and Policy CR-2.3, to protect and preserve paleontological resources for their cultural importance to local communities as well as their research and educational potential (San Bernardino 2020).

Therefore, through compliance with PRC Section 21083.2, the proposed project's potential for disturbing unknown paleontological or a unique geological resource would be less than significant. This issue will not be examined further in the EIR.

3.8 GREENHOUSE GAS EMISSIONS

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant Impact. Construction and operation of a new 3,000 seat stadium would generate greenhouse gas (GHG) emissions. The EIR will discuss potential climate change impacts from GHG emissions generated by construction and operation of the proposed project. Mitigation measures will be recommended, as applicable, to minimize the proposed project's contribution to GHG emissions.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impact. The California Air Resources Board (CARB) adopted the Scoping Plan in conformance with Assembly Bill 32. In addition, SB 375, the Sustainable Communities and Climate Protection Act of 2008, was adopted by the legislature to reduce per capita vehicle miles traveled and associated GHG emissions from passenger vehicles. SCAG's 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016) identifies the per capita GHG reduction goals for the SCAG region. SCAG recently released the 2020-2045 RTP/SCS (Draft Connect SoCal Plan) which replaced the 2016-2040 RTP/SCS. Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SCAG's RTP/SCS. Construction of the proposed project could have the potential to conflict with GHG reduction strategies and goals of CARB's Scoping Plan and SCAG's 2020 RTP/SCS. The EIR will discuss consistency of the proposed project with the GHG reduction strategies of the Scoping Plan. Mitigation measures will be recommended, as applicable, to minimize the proposed project's contribution to GHG emissions.

3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

No Impact. The proposed project would involve the development and operation of a new athletic stadium on the campus of an existing high school. Significant amounts of hazardous materials would not be transported, used, or disposed of in conjunction with the proposed project. Maintenance of the new facility would likely require the use of cleaners, solvents, paints, and other janitorial products that are potentially hazardous. However, these materials would be utilized in relatively small quantities and would be stored in compliance with established state and federal requirements. These materials would be used in accordance with normal operational safety practices, as employed at other school facilities within the District. No significant impacts would occur. This issue will not be reviewed further in the EIR.

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?

Less Than Significant Impact. The proposed project does not have the potential to release hazardous materials into the environment during either the construction or long-term operation of the proposed facilities.

Construction

The project site does not appear on any regulatory agency database including, but not limited to GeoTracker and EnviroStor (DTSC 2019; State Water Resources Board 2019). Construction activities of the proposed project could result in the exposure of construction personnel and the public to unidentified hazardous substances in the construction debris and soil. There are no hazardous material sites located within 0.5-mile of the project site (State Water Resources Board 2019).

Exposure to unanticipated hazardous substances could also occur from previously unidentified soil contamination caused by migrating contaminants originating at nearby listed sites. Exposure to hazardous materials during construction activities could occur as a result of any of the following:

- Direct dermal contact with hazardous materials
- Incidental ingestion of hazardous materials (usually due to improper hygiene, when workers fail to wash their hands before eating, drinking, or smoking)
- Inhalation of airborne dust released from dried hazardous materials

California Division of Occupational Safety and Health (Cal/OSHA) regulates worker safety with respect to the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals, and documenting employee training programs.

Compliance with existing regulations would ensure that construction workers and the general public are not exposed to any unusual or excessive risks related to hazardous materials during construction activities. Project construction would be required to follow all state and federal regulations, which would ensure that construction-related impacts would not occur. Therefore, impacts associated with the exposure of construction workers and the public to hazardous materials during construction activities for the proposed project would be less than significant.

Operational

It is not anticipated that operation of the proposed project would create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment. Hazardous materials that could be stored within the project site would consist of common chemicals used for maintenance and cleaning, similar to existing conditions. Development of the proposed project would include the use and storage of common hazardous materials such

as paints, solvents, and cleaning products for maintenance of the home and visitor buildings, concession stands, and restrooms.

The products used for common maintenance would be similar to those currently used on the Redlands East Valley HS campus and would be stored and used consistent with manufacturers specifications and existing RUSD guidelines. The volumes and use of these hazardous materials would be very limited, and the transport, storage, use, and disposal of these materials would be subject to federal, state, and local health and safety requirements. The potential for the proposed project's operation to result in a release, accidental or otherwise, of any hazardous materials into the environment is considered less than significant. This issue will not be reviewed further in the EIR.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. The proposed project site is on the existing Redlands East Valley HS campus. The next closest school to the project site is Franklin Elementary School located 2.9 miles to the west. As discussed above under Responses 3.9(a) and 3.9(b), the use of hazardous materials and substances during the operation of the proposed project is generally minimal and in small quantities. Currently, limited quantities of hazardous materials are used at Redlands East Valley HS, including the project site, for maintenance and repair activities, landscaping, cleaning, and educational purposes, such as science labs. All hazardous materials and substances at the proposed project site would be subject to federal, state, and local health and safety requirements—e.g., Resource Conservation and Recovery Act; California Hazardous Waste Control Law; and principles prescribed by the California Department of Health Services, Centers for Disease Control and Prevention, and National Institutes of Health—and the proposed project would be under the regulatory oversight of agencies such as the San Bernardino County Environmental Health Division, Department of Toxic Substance Control, and the Regional Water Quality Control Board. The proposed project would result in a less than significant impact with regard to the emission or handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school. This issue will not be reviewed further in the EIR.

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?

No Impact. Government Code section 65962.5 specifies lists of the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated. As discussed above in 3.9(b), the project site is not listed on a regulatory data base for hazardous material sites and is not within 0.5 miles of a hazardous material site (Waterboards 2021; DTSC 2021). Additionally, compliance with existing regulations would ensure that construction workers and the general public are not exposed to any unusual or excessive risks related to hazardous materials during construction activities. Project construction would be required to follow all state

and federal regulations, which would ensure that construction-related impacts would not occur. Therefore, the proposed project would not be located on a site which is included on a list of hazardous materials sites and would not create a hazardous risk to the public or the environment This topic will not be reviewed further in the EIR.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or 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?

No Impact. Redlands Municipal Airport is approximately 1.3 nautical miles (1.5 statutory miles) north of the project site. California Education Code Section 17215 requires approval by the Department of Transportation, Aeronautics Program for the acquisition or lease of land by a school district for a new school site within two nautical miles of an airport. However, as the proposed project would make improvements at an existing site and would not acquire or lease any land or create a new school site, approval from the Department of Transportation, Aeronautics Program is not required. The proposed project would comply with Education Code Section 17215, and all other applicable regulations and requirements.

The proposed project would install seating for up to 3,000 spectators at the project site. It would therefore increase the use of the project site, although full-capacity events would be fewer than 5 times a year. The Redlands Municipal Airport would not pose a significant hazard, as the project site is not aligned with the runway and is not beneath flight paths for airplanes arriving at or departing from the airport. No significant impacts related to nearby airports would occur. This issue will not be analyzed further in the EIR.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The proposed project would not conflict with any adopted emergency response or evacuation plans. The site's surrounding roadways would continue to provide emergency access through the project area and to surrounding properties during the project's construction. In the event that a temporary closure of any street is required, the project's contractor would be required to provide the County of San Bernardino with a construction schedule and plans for the closure of the street and to ensure that the placement of construction materials and equipment does not obstruct a detour route. The project's contractor would be required to comply with all county and/or San Bernardino County Fire Department recommendations, as applicable, for reducing impacts to emergency response or evacuation plans.

Onsite emergency response would be facilitated through the use of the school's driveways, parking lot, and paved areas, which would provide emergency vehicle access to the stadium. The District would be required to obtain local fire authority approval of the project site plan, including emergency access routes, prior to initialization of any construction activities. Mandatory compliance with existing rules and regulations would ensure that no significant impacts would occur. This issue will not be reviewed further in the EIR.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. The project site is not adjacent to wildland and would not be immediately exposed to wildland fires. The project site is in a developed area and is surrounded by developed land uses. The maps of Very High Fire Hazard Severity Zones in southwest San Bernardino County indicate that the project site is not within a Very High Fire Hazard Severity Zone (VHFHSZ) for a State or Federal Responsibility Area or Local Responsibility Area (LRA)(CAL FIRE 2008). The proposed project is therefore not expected to expose people or structures to risks related to wildland fires. Furthermore, the proposed project would comply with all applicable fire safety regulations, including the San Bernardino County Uniform Fire Code. Impacts related to wildland fires would be less than significant. This issue will not be discussed further in the EIR.

3.10 HYDROLOGY AND WATER QUALITY

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Potentially Significant Impact. Pursuant to Section 402 of the Clean Water Act, the US Environmental Protection Agency (EPA) has established regulations under the National Pollutant Discharge Elimination System (NPDES) program to control stormwater discharges. In California, the State Water Quality Control Board (SWQCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates pollutant discharges, including those generated from construction activities. Because the project site is larger than one acre, the proposed project's construction and operation would be subject to the NPDES program. Water quality and discharge requirements will be reviewed in the EIR.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The City of Redlands is the school's water service provider. The city provides potable water to more than 75,000 residents in Redlands, Mentone, parts of Crafton Hills and San Timoteo Canyon, and a small parts of unincorporated San Bernardino County. Redlands receives its water from the following sources (Redlands 2021a):

- Mill Creek Watershed: Water from the Mill Creek watershed is treated at the Henry Tate (Tate) Water Treatment Plant (WTP) located on Highway 38 east of Mentone.
- Santa Ana River Watershed: Water from the Santa Ana River watershed is treated at the Hinckley WTP located north of Mentone.
- Local Groundwater: Local groundwater is pumped from wells in Redlands, Mentone, and Yucaipa.

- California State Water Project (SWP) Water: When required, SWP water is treated at the Hinckley WTP and Tate WTP.

Redlands East Valley High School, including the project site, does not contain any wells or direct groundwater connections. The proposed project would not increase student enrollment at Redlands East Valley High School. While the stadium's operation would result in increased volumes of potable water consumed at the project site during events and games, the proposed project would operate on an established schedule. The scheduling of events with the potential to attract large groups of spectators will be minimal. It is estimated that the proposed project would host up to five games or events that have the potential to meet the maximum spectators. Although water would be consumed in conjunction with landscape and facility maintenance on a regular basis, these volumes would be substantially less than generated during an event. The proposed project's use of an artificial turf playfield would further reduce the volume of water used for maintenance because regular watering of the field would not be required. Since the proposed project would not increase student enrollment, Redlands East Valley High School's use of the proposed project for physical education uses and team practices, among other scholastic activities, would not result in a substantial increase in water consumption because these activities are currently being conducted at the school and would take place either with or without the proposed project.

Currently, Redlands East Valley HS conducts its home games at Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. Without the proposed project, Redlands East Valley HS would continue to play games at these alternate locations. The development of the proposed project would not involve the siting of a new land use, but rather a relocation of an existing use and modernization of the current facilities onsite. Therefore, increases in water consumption resulting from the proposed project would be nominal, and would not result in a need to increase pumping of groundwater resources.

The District would coordinate with the city of Redlands as appropriate. No significant impacts to the local groundwater resources would result from project development. This issue will not be discussed in the EIR.

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 a substantial erosion or siltation on- or off-site?

Potentially Significant Impact. While no direct impacts to any stream or river are proposed by the proposed project, the project site's existing drainage patterns could change as a result of project development. Drainage plans will be analyzed in the EIR. Requirements of the NPDES permit, as they apply to the site, will also be examined in the EIR. Mitigation measures will be recommended, as necessary, to ensure that any potential impacts from erosion or siltation are less than significant.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Potentially Significant Impact. While no direct impacts to any stream or the river are proposed by the project, the site's existing drainage patterns could change as a result of project construction. Drainage plans will be analyzed in the EIR. Mitigation measures will be recommended, as appropriate.

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?

Potentially Significant Impact. Project development would result in the conversion of presently natural turf field and grassy areas to impermeable surfaces through the placement of structural foundations and pavement, thereby reducing the current rate of absorption and increasing the volume of surface water runoff experienced at the site. The potential for the proposed project to create or contribute runoff water that would impact stormwater drainage systems, and applicable drainage discharge requirements, will be reviewed in the EIR.

iv) Impede or redirect flood flows?

Potentially Significant Impact. According to the Federal Emergency Management Agency (FEMA), the project site lies within an area identified as "Zone X: Area with reduced flood risk due to a levee". The project site does not lie within the 100-year flood plain (FEMA 2021). This topic will be further evaluated in the EIR.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact. A seiche is an oscillating surface wave in a restricted or enclosed body of water generated by ground motion, usually during an earthquake. Seiches may cause inundation if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. Seven Oaks Dam is approximately four miles northeast of the project site. However, in the event of overtopping as a result of a seiche, the dam spillway for Seven Oaks Dam would divert any overflow from the reservoir into the adjacent drainage subbasins located to the north, away from Redlands East Valley High School and the project site (DSOD 2021). As there are no other large bodies of water on, or topographically upgradient in the immediate vicinity of, the project site, a seiche is not considered to be a potential hazard for the site.

Tsunamis are a type of earthquake-induced flooding that is produced by large-scale sudden disturbances of the sea floor. Tsunami waves interact with the shallow sea floor topography upon approaching a landmass, resulting in an increase in wave height and a destructive wave surge into low-lying coastal areas. Due to the distance of the site from the Pacific Ocean, there is no potential for tsunamis to impact the site.

Mudflows are events in which a mass of saturated soil flows downhill as a very thick liquid. Based on flat surface of the project site and surrounding area, the project site is not susceptible to mudflows.

This topic will not be reviewed further in the EIR.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The quality of surface and groundwater is affected by land uses in the watershed and the composition of subsurface geologic materials. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board and RWQCB. The project site is located within the Upper Santa Ana Valley – San Bernardino basin (California Department of Water Resources 2019). However, the proposed project would be in compliance with existing laws and regulations, including the Santa Ana River Basin Plan (State Water Resources Control Board 2019) and the Upper Santa Ana Watershed Integrated Regional Water Management Plan (San Bernardino Valley Water Conservation District 2015), which would ensure that it would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and would result in a less than significant impact.

3.11 LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?

No Impact. The proposed project would replace existing athletic facilities on an existing school campus with a new stadium that would include a new track and synthetic grass football field (including scoreboard and field lights), bleachers for 3,000 people, and new visitor and home ticketing booth, concessions, custodial and restroom buildings. The proposed project also includes a new fire lane along the southern side of the project site, pedestrian walkway improvements, and landscaping. Construction and operation of the proposed project would be limited to the project site and campus. Development of the proposed project would not change the existing land use nor zoning designation on the project site. The proposed project would not create any new land use barriers or otherwise divide or disrupt the physical arrangement of any communities. Development of the proposed project would not result in the division of an established community and no impacts would occur. The issue will not be further reviewed in the EIR.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project site is designated as Institutional (IN) by the San Bernardino County Zoning District Maps and has a General Plan land use designation of Public Facility (PF). The proposed project would include a new track and synthetic grass football field (including scoreboard and field lights), bleachers for 3,000 people, new visitor and home ticketing booth, concessions, custodial and restroom buildings, landscaping, and pedestrian and vehicle circulation access and entryway improvements. The proposed project would be developed within the boundaries of the Redlands East Valley HS campus. As the project site currently contains a track and athletic field, the proposed project would not change the use of the site. Project development would not require modification to the site's current General Plan land use and zoning designations. Development of the proposed project would not conflict with any applicable land use plans, policies or regulations. The issue will not be further reviewed in the EIR.

3.12 MINERAL RESOURCES

Would the project:

a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

No Impact. Due to its large washes and stream channels, Mentone contains regionally significant construction aggregate and mineral resources. The primary minerals found in Mentone are decorative rocks, sand, and gravel. A relatively large portion of Mentone, including the project site is classified as Mineral Resource Zone 2 (MRZ-2) (San Bernardino 2019). The MRZ-2 designation is defined by the California Geological Survey as an area where significant mineral deposits are likely to occur. MRZ-2 areas also indicate the existence of a construction aggregate deposit that meets certain state criteria for value and marketability based solely on geologic factors.

While the project site is within an MRZ-2 zone, the project site is developed with school use and is located on the Redlands East Valley HS campus. The project site is not currently used for the mining, and the proposed project would not remove any mines nor interfere with mineral extraction activities. The proposed project does not change the land use of the project site, as the project site would remain part of the Redlands East Valley High School campus and would continue to be used for athletics and school activities. Therefore, development of the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. This issue will not be reviewed further in the EIR.

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?

No Impact. Designation of a site as a mineral resource recovery site is a process limited to the identification of significant mineral resources within existing MRZ-2s only. MRZ-2s are areas where the available geologic information indicates that there are significant mineral deposits. As mentioned above, the project site is located within an MRZ-2 designation (San Bernardino 2019). However, the project site is a part of the Redlands East Valley HS and is developed with and used for athletics and events. The project site is not used for mineral extraction, and the proposed project would not remove nor interfere with mineral extraction activities. Therefore, development of the proposed project would not result in the loss or availability of a locally important mineral resource recovery site. This issue will not be reviewed further in the EIR.

3.13 NOISE

Would the project result in:

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?

Potentially Significant Impact. Noise that exceeds adopted thresholds may be generated during construction and operation of the proposed project. Specific during operation, noise generated during a full capacity stadium

event at the proposed project has the potential to generate excessive noise levels that exceed the standards adopted by the District. The EIR will address potential noise impacts associated with operation of the stadium, and if necessary, mitigation measures will be identified.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact. The nearest offsite vibration-sensitive land uses are on the west side of Opal Avenue, approximately 50 feet west of the proposed project at its nearest point. Operation of the proposed stadium would not generate substantial levels of vibration. Construction activities have the potential to generate strong levels of vibration. The EIR will evaluate the potential for vibration generated by project-related construction activities to impact the residents to the west and disrupt classroom activities.

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?

Less Than Significant Impact. The project site is located within 1.3 miles (1.5 miles) of the Redlands Municipal Airport. According to the Redlands Municipal Airport Land Use Compatibility Plan (Redlands 2015), the project site is outside of the 60 dBA and 65 dBA CNEL noise contour. Consequently, the proposed project would not expose staff or students to excessive noise levels from aircraft overflights. A less than significant would occur, and this issue will not be discussed further in the EIR.

3.14 POPULATION AND HOUSING

Would the project:

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)?

No Impact. The proposed stadium would be constructed on the campus of an existing high school in an area currently developed with the school's athletic field and track, and no changes in land use would occur. Because the proposed project is intended to serve an existing need, the proposed project would not increase in Redlands East Valley High School's enrollment capacity and would not contribute to new students. The proposed project would not create a significant number of new employment opportunities that could result in a greater demand for local housing. Moreover, major infrastructure is already in place and the extension of roads or other major infrastructure systems would not be required. Therefore, project development would not induce substantial population growth in the area, either directly or indirectly. This issue will not be reviewed further in the EIR.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. No housing units exist onsite. As such, the proposed project would not displace any housing units. No impact would occur. This issue will not be reviewed further in the EIR.

3.15 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:

a) Fire protection?

Potentially Significant Impact. Fire protection services are provided to the project site by the San Bernardino County Fire Department. The jurisdictional fire station for the project site is Mentone-Station 9, approximately 0.75-mile northeast of the project site. Through a mutual aid agreement, other stations may also respond to calls from the project site, including stations operated by the City of Redlands Fire Department. The proposed project would not increase student enrollment. However, the proposed project would increase the use of the project site, which may increase the need for fire protection services at the project site. Currently, certain Redlands East Valley HS sport games are held at Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. Fire protection for Redlands High School, and Citrus Valley High School is provided by the City of Redlands Fire Department; fire protection for Beaumont High School is provided by the Riverside County Fire Department; and fire protection for the Yucaipa Community Park is provided by the City of Yucaipa Fire Department. The proposed project would relocate these games and events to the project site. This issue will be discussed further in the EIR.

b) Police protection?

Potentially Significant Impact. Police protection services are provided to the project site by the San Bernardino County Sheriff's Department. The jurisdictional sheriff station for the project site is the Yucaipa Station, approximately 5 miles southeast of the project site. The proposed project would not increase student enrollment. However, the proposed project would increase the use of the project site, which may increase the need for police protection services at the project site. Currently, certain Redlands East Valley HS games are held at Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. Police protection for Redlands High School, and Citrus Valley High School is provided by the City of Redlands Police Department; police protection for Beaumont High School is provided by the City of Beaumont Police Department; and police protection for the Yucaipa Community Park is provided by the San Bernardino Sheriff's Department. The proposed project would relocate these games and events to the project site. This issue will be discussed further in the EIR.

c) Schools?

No Impact. The proposed project involves the development of an athletic stadium and facilities on the campus of an existing high school. Typically, the demand for schools is created by new housing development or activities that generate additional population. The proposed project would not generate increase student enrollment. Therefore, the proposed project would not impact schools. This issue will not be reviewed further in the EIR.

d) Parks?

No Impact. Typically, the demand for parks is created by the development of new housing and/or actions that generate additional population. The proposed project would serve an existing student population and would not induce population growth or housing in the area. The proposed project would not increase the use of existing parks or recreational facilities, or the need for new parks or recreational facilities.

Moreover, the proposed project would be made available for community-sponsored events after school hours in accordance with the Civic Center Act (Education Code Sections 38130–38139) and District policy, thereby providing improved recreational opportunities to the community and reducing impacts on neighborhood parks. No impacts to parks would result from the proposed project. This issue will not be reviewed further in the EIR.

e) Other public facilities?

Less Than Significant Impact. The proposed project would be served by existing infrastructure, including public roads. Due to the size and general nature of the proposed project, impacts to public facilities are not anticipated to be significant. The District would be responsible for required utility connections and any applicable improvements necessary to accommodate the project. Development of the proposed project would not require new or altered governmental services for the maintenance of roadways or other public facilities. Additionally, the area surrounding the project site is served by the San Bernardino County's Mentone Senior Center and Library branch, located at 1331 Opal Avenue. The proposed project would be designed to serve the existing and future student population at the project site. No new population would be generated by the proposed uses; therefore, no increased demand on other public facilities is anticipated. No significant impacts would occur. This issue will not be reviewed further in the EIR.

3.16 RECREATION

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?

No Impact. Typically, the demand for parks is created by the development of new housing and/or actions that generate additional population. The proposed new stadium would serve an existing student population and would not increase student enrollment. Therefore, the proposed project would not cause population growth. Since the proposed project would not induce growth, no substantial increases in the use of any existing parks would occur. Further, the proposed project would not increase the use of any recreational facilities.

Moreover, the proposed athletic stadium would be made available for organized community-sponsored events after school hours in accordance with the Civic Center Act (Education Code Sections 38130–38139) and District policy, thereby providing improved recreational opportunities to the community and reducing impacts on existing recreation facilities. No significant impacts to parks would occur. This issue will not be reviewed further in the EIR.

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?

No Impact. As discussed under 3.16(a), the demand for recreational facilities is created by the development of new housing and/or actions that generate additional population. The proposed project would serve an existing student population and would not increase student enrollment. Therefore, the proposed project would not cause population growth. Since the proposed project would not induce growth, no increases in the use of any existing recreational facilities would occur. The proposed project would not require the construction or expansion of recreational facilities. No impact would occur. This issue will not be reviewed further in the EIR.

3.17 TRANSPORTATION

Would the project:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Potentially Significant Impact. The proposed project will provide nighttime lighting and permanent bleachers on-site, allowing for increased use of the project site.

As such, the proposed project would have the potential to conflict with an applicable plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Thus, this topic will be evaluated further in the EIR.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?

Potentially Significant Impact. On September 27, 2013, SB 743 was signed into law, which started a process that fundamentally changed transportation impact analysis as part of CEQA compliance. These changes include the elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts in many parts of California (if not statewide). As part of the updated CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code section 21099(b)(1)). On January 20, 2016, the Governor's Office of Planning and Research (OPR) released revisions to its proposed CEQA guidelines for the implementation of SB 743. Final review and rulemaking for the new guidelines were completed on December 28, 2018, when the California Natural Resource Agency certified and adopted the CEQA Guidelines update package, including guidelines section implementing SB 743. Vehicle miles traveled (VMT) is an indicator of the travel levels on the roadway system by motor vehicles. It corresponds to the number of vehicles multiplied by the distance traveled in a given period over a geographical area. In other words, VMT is a function of (1) number of daily trips and (2) the average trip length (VMT = daily trips x average trip length). The proposed project would have the potential to increase vehicle trips associated with the project site. The proposed project's vehicle miles traveled will be explored in the EIR. Mitigation measures will be incorporated as appropriate.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Potentially Significant Impact. The proposed project would be designed to minimize any design-related hazards such as sharp curves and dangerous intersections. The District would work with San Bernardino County to achieve safe pedestrian and vehicular access to the project site. The EIR will analyze the potential impacts of design features.

d) Result in inadequate emergency access?

Potentially Significant Impact. Access and circulation features for the project site need to accommodate emergency ingress and egress by fire trucks, police units, and ambulance vehicles. The District would be required to obtain local fire authority approval of the project site plan, including emergency access routes, prior to initialization of any construction activities. Emergency site access will be reviewed in the EIR, and mitigation measures will be incorporated as appropriate.

3.18 TRIBAL CULTURAL RESOURCES

a) 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:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Potentially Significant Impact. As of July 1, 2015, Public Resources Code Sections 21080.1, 21080.3.1, and 21080.3.2 require public agencies to consult with California Native American tribes recognized by the Native American Heritage Commission for the purpose of mitigating impacts to tribal cultural resources. This law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions.

In accordance with Public Resources Code Section 21080.1(d), a lead agency is required to provide formal notification of intended development projects to Native American tribes that have requested to be on the lead agency's list for receiving such notification. The formal notification is required to include a brief description of the proposed project and its location, lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation for tribal cultural resources. The proposed project would comply with tribal consultation requirements pursuant to Assembly Bill 52 (AB 52). One California Native American tribe, the San Manuel Band of Mission Indians, is on the RUSD's notification list pursuant to AB 52. The District provided a notification letter to this tribe on November 9, 2021 and as of the time of publication of this Initial Study, no response has been received.

The proposed project would involve the construction of a new sport field, track, field light fixtures, bleachers, and other stadium building facilities. The project site is currently developed and operates with

similar sport uses. The project site is not listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k) (OHP 2021; NPS 2021). As the project site has been previously disturbed and currently supports similar sports and academic uses, it is not anticipated that unknown tribal cultural resources are present on-site. Nevertheless, the potential for tribal cultural resources to exist onsite and the results of the Assembly Bill 52 tribal consultation will be further discussed in the EIR.

ii) 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Potentially Significant Impact. As discussed under section 5.18(a), the proposed project would involve construction of a new sport field, track, field light fixtures, bleachers, and other stadium building facilities. The project site is currently developed and operates with similar sport uses. The project site is not listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k) (OHP 2021). As the property has been previously disturbed and currently supports similar sports field uses, it is not anticipated that unknown tribal cultural resources are present on-site. Nevertheless, the potential for tribal cultural resources to exist onsite and the results of the Assembly Bill 52 tribal consultation will be further discussed in the EIR.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the project:

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?

Less than Significant Impact. The proposed project would serve an existing need and would not increase student enrollment at Redlands East Valley HS. On a temporary basis, the proposed project can generate up to 3,000 spectators onsite in addition to the players/hosts and staff. A discussion for each utility is provided below.

Water and Wastewater

The proposed project would not require or result in the construction or expansion of any new/potable water or sewage/wastewater treatment facilities. Water and wastewater service to the project site is provided by the City of Redlands, which provides water and wastewater service to both the City of Redlands and the unincorporated community of Mentone, among other communities.

While the City of Redlands has standard water consumption and wastewater generation rates for common land uses, it does not have standard consumption and generation rates for a stadium use. Based on a seating capacity of 3,000 spectators, the stadium has the potential to result in the consumption of approximately 13,200 gallons of potable water per day during a capacity event, and the generation of 12,000 gallons of wastewater per day

if all events operated at capacity.[2] As discussed in Section 1.4, *Project Description*, it is anticipated that there would be up to five full capacity events per year.

The City of Redlands provides an average of 27 million gallons of water per day, with a maximum of 50 million gallons of water per day in the summer (Redlands 2021a). When operating at capacity, an event that would happen infrequently, the proposed project would result in an increase of less than 0.01 percent over the daily average water consumption. Wastewater generated from the project site would be treated at the City of Redlands Wastewater Treatment Plant, which currently processes about 6 million gallons per day and has the capacity to treat 9.5 million gallons of wastewater a day (Redlands 2021b). As discussed above, the proposed project has generate approximately 12,000 gallons of wastewater per day during full-capacity events which is well within the 3.5 million gallons wastewater treatment capacity remaining. Therefore, the proposed project would not result in a significant increase in water consumption or wastewater generation.

While the proposed project's operation would result in increased volumes of potable water consumed and wastewater generated, the proposed project would operate on a limited schedule. Maximum capacity events are expected to occur only approximately five times per year. Further proposed project would replace the natural grass sport field with a synthetic field that does not require watering. Water and wastewater associated with landscape and facility maintenance on a regular basis would be less than generated during a full capacity event.

Finally, Redlands East Valley High School currently conducts certain games and events at Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. Without the proposed project, the high school would continue to conduct these events at Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. Therefore, the development of the proposed project would result in the relocation of an existing events. Thus, the proposed project is not expected to significantly change the net volumes of water treated at the local treatment facilities.

The proposed project would not require the relocation or construction of new or expanded water and wastewater treatment. A less than significant impact would occur. This issue will not be discussed in the EIR.

Stormwater Infrastructure

The project site is in a developed area of the current campus which contains an existing stormwater collection and conveyance system. The proposed project would include a subsurface drainage system to manage stormwater drainage throughout the project site. The new field will be synthetic turf for soccer and football, which would further reduce the volume of water used for maintenance because regular watering of the field would not be required.

Development of the proposed project would result in a minimal increase in the amount of impervious coverage on other portions of the site where the stadium facilities and light fixtures are proposed. As part of the

[2] Generation rate for a school stadium is 4 gallons/day/seat (City of Los Angeles, L.A. CEQA Thresholds Guide, 2006). Consumption rate is assumed to be 4.4 gallons/day/seat, 110 percent of generation rate.

proposed project, stormwater drainage plans would comply with regulatory requirements. Compliance with the existing regulatory requirements would ensure that the capacity of the existing storm drainage infrastructure serving the project site would not be diminished, and impacts of the proposed project to the storm drain system would be less than significant. This issue will not be discussed in the EIR.

Electricity Infrastructure

The new lighting associated with the proposed project would connect to the existing electric power system. All utility connections to the proposed project would be required to comply with applicable federal, state, and local regulations related to electrical power. As such, the proposed project would not require the relocation or construction of new or expanded electricity infrastructure. A less than significant impact would occur. This issue will not be discussed in the EIR.

Natural Gas and Telecommunications

The proposed project does not involve or require any changes to the natural gas or telecommunication system. Therefore, relocation and expansion of existing facilities and construction of new facilities would not be required. Impacts would be less than significant. This issue will not be discussed in the EIR.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. As discussed under section 3.20(a) above, the proposed project would increase water demand by a minor amount at the project site. The proposed project includes new restroom, ticket and concession booths, facility would operate on a limited schedule and these facilities would be used up to 60 times a year and only five events have the potential to reach a crowd of 3,000 spectators. The proposed project would not increase student enrollment. The campus's water supply would adequately supply the new facilities water needed during normal, dry and multiple dry years, and therefore would have a less than significant impact to water supply.

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?

Less Than Significant Impact. As discussed above, the proposed project has the potential to generate 12,000 gallons of wastewater per day during a full-capacity event. Wastewater generated from the project site would be treated at the City of Redlands Wastewater Treatment Plant, which currently processes about 6 million gallons per day and has the ability to treat 9.5 million gallons of wastewater a day (Redlands, 2021b). While the proposed project's operation would result in increased volumes of wastewater generated full-capacity events are anticipated to occur only approximately five times per year. As such, the estimate of 12,000 gallons per day is conservative and would be well within the available capacity of the City of Redlands Wastewater Treatment Plant.

Additionally, the proposed project would serve an existing need and would not result in an increase in student population at the school. Redlands East Valley High School's use of the proposed project for physical education

uses and team practices would not result in a substantial increase in wastewater generation because these activities are currently being conducted at the school and would take place either with or without the proposed project's development. The proposed project would have adequate capacity to serve the proposed project's anticipated demand in addition to the project site's existing commitments. A less than significant impact would occur as a result of proposed project. This issue will not be discussed in the EIR.

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?

Less Than Significant Impact. The proposed project would be served by the San Timoteo Sanitary Landfill, the closest landfill to the project site, approximately six miles southwest of the project site. The landfill has a permitted maximum disposal of 2,000 tons per day and has an estimated remaining capacity of approximately 12 million cubic yards (CalRecycle 2021).

Stadium operation is expected to result in an increased volume of solid waste generated at the project site. However, the proposed project is intended to serve an existing need, and no increase in student population would occur. The proposed project would generate up to 60 games/events onsite, five of which would have the potential to be full capacity. Of these 60 games/events onsite, all are existing and being relocated from other facilities to the project site; no new events are anticipated to occur on the project site. Therefore, the net increase in solid waste to the San Timoteo Sanitary Landfill or other area landfills resulting from the proposed project would be marginal. As the San Timoteo Sanitary Landfill has a remaining capacity of approximately 12 million cubic yards, it would not be significantly affected by slight increases in solid waste that may occur as a result of the proposed project. A less than significant impact to solid waste reduction goals would occur. This issue will not be discussed further in the EIR.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. All local governments, including the County of San Bernardino, are required under Assembly Bill 939 (AB 939), the Integrated Waste Management Act of 1989, to develop source reduction, reuse, recycling, and composting programs to reduce tonnage of solid waste going to landfills. The District currently complies with federal, state, and local statutes and regulations related to solid waste, and would continue this practice. CALGreen section 5.408, Construction Waster Reduction, Disposal, and Recycling, requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. A less than significant impact would result from the proposed project. This issue will not be discussed in the EIR.

3.20 WILDFIRE

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

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The project site is located within a local responsibility area (LRA) and is not located in state responsibility area and is not within nor near a designated VHFHSZ (CalFire 2021). Additionally, the project site is not within a Fire Safety Overlay District (San Bernardino 2010). A Fire Safety Overlay corresponds to distinct geographic areas and the associated wildland fire hazard, and is created to provide greater public safety in areas prone to wildland brush fires, by establishing additional development standards for these areas (San Bernardino 2014). Since the project site is a previously developed campus and it is not located within a VHFHSZ, no significant impacts would result from the proposed project. This issue will not be discussed in the EIR.

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?

No Impact. The project site is located in a LRA and is not located in or near a designated VHFHSZ (CalFire 2021). Since the project site is a previously developed campus and it is not located within a VHFHSZ, no significant impacts would result from the proposed project. This issue will not be discussed in the EIR.

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?

No Impact. The project site is located in a LRA and is not located in or near a designated VHFHSZ (CalFire 2021). Since the project site is a previously developed campus and it is not located within a VHFHSZ, no significant impacts would result from the proposed project. This issue will not be discussed in the EIR.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The project site is located in a LRA and is not located in or near a designated VHFHSZ (CalFire 2021). Since the project site is a previously developed campus and it is not located within a VHFHSZ, no significant impacts would result from the proposed project. This issue will not be discussed in the EIR.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

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?

Less Than Significant Impact. As discussed in Section 3.4, *Biological Resources,* the proposed Project would neither degrade the quality of the environment nor substantially impact any sensitive habitat or species. The proposed project site is in an urban and fully developed area and would not have an impact on the habitat or population level of fish or wildlife species; threaten a plant or animal community; or impact the range of a rare or endangered plant or animal. Because the property was already developed and the surrounding area is highly urbanized, the redevelopment of the project site would not impact the habitat or population level of a fish, plant, or animal community or the range of a rare or endangered plant or animal. Impacts would be less than significant.

As discussed under Section 3.5, *Cultural Resources,* the proposed Project would not significantly impact historic, archaeological, paleontological resources, and human remains. Because the property is not historic and was already developed and the surrounding area is highly urbanized, the redevelopment of the project site would not impact examples of California history or prehistory. The proposed Project does not have the potential to substantially degrade the quality of the environment. Impacts would be less than significant. These topics will not be further analyzed in the EIR.

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.)

Potentially Significant Impact. As identified in this initial study, the proposed project has the potential to result in significant impacts involving aesthetics, air quality, biological resources, energy, greenhouse gas emissions, hydrology and water quality, noise, tribal cultural resources, and transportation. The EIR will analyze these topics in greater detail to determine whether the proposed project would generate any cumulatively considerable impacts.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant Impact. As identified in this initial study, the proposed project has the potential to result in significant impacts involving aesthetics, air quality, biological resources, energy, greenhouse gas emissions, hydrology and water quality, noise, tribal cultural resources, and transportation. These impacts could potentially have an adverse effect on humans. Further analysis of these issues is required as part of the environmental review process and will be included in the EIR.

3. Environmental Analysis

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4. References

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5. List of Preparers

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5. List of Preparers

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NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM PROJECT

TO: Agencies, Organizations, and Interested Parties **DATE:** November 22, 2021

FROM: Redlands Unified School District (Lead Agency)

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report in Compliance with Title 14, Section 15082(a) of the California Code of Regulations and Notice of Scoping Meeting

Redlands Unified School District (RUSD or District) intends to develop a stadium at Redlands East Valley High School (Redlands East Valley HS) over three phases. The proposed project would include a new track and synthetic grass football field (including scoreboard and competition-level field lighting), bleachers for 3,000 people, new visitor and home ticketing booth, concessions, custodial and restroom buildings, landscaping, and pedestrian and vehicle circulation access and entryway improvements. RUSD will serve as the Lead Agency for the proposed project in accordance with the California Environmental Quality Act (CEQA), Section 15051(c) in the preparation of the Environmental Impact Report (EIR) for the Redlands East Valley High School Stadium Project as described below. RUSD is requesting identification of environmental issues and information that you or your organization believes should be considered in the EIR.

PROJECT TITLE: Redlands East Valley High School Stadium Project

PUBLIC REVIEW PERIOD: November 24, 2021 – December 23, 2021

RESPONSES AND COMMENTS: Please send your responses and comments to Operations & Facilities Planning Department via phone, mail, or e-mail as noted below. Please include the name, phone number, and email address of a contact person in all responses submitted.

Contact Person: **Ken Morse**

Phone Number: (909) 389-2730

Mailing Address: Redlands Unified School District
20 W. Lugonia Avenue
Redlands, CA 92374

Email: **revstadium@redlands.k12.ca.us**

SCOPING MEETING: RUSD will host a Scoping Meeting for the project to receive comments on the scope and content of the proposed EIR. You are welcome to attend and present environmental information that you believe should be considered in the EIR. The meeting is scheduled for:

Date: December 9, 2021

Time: 5:00 p.m. – 7:00 p.m.

Place: Virtual (Zoom Meeting)

Please consider joining the scoping meeting on a computer so you can enable your microphone and video capabilities. You do not need to call in separately for audio if your computer or tablet already has microphone capabilities. If you will be joining by tablet or smart phone, make sure you download the Zoom app prior to the meeting.

NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING

This scoping meeting will be recorded. By attending the scoping meeting, you are consenting to being photographed or video recorded.

Topic: Redlands East Valley High School Stadium Project Scoping Meeting
Time: Dec 9, 2021 05:00 PM Pacific Time (US and Canada)

Join Zoom Meeting
https://us06web.zoom.us/j/85743853391

Meeting ID: 857 4385 3391

One tap mobile
+13462487799,,85743853391# US (Houston)
+17207072699,,85743853391# US (Denver)

Dial by your location
+1 346 248 7799 US (Houston)
+1 720 707 2699 US (Denver)
+1 253 215 8782 US (Tacoma)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Washington DC)
Meeting ID: 857 4385 3391
Find your local number: https://us06web.zoom.us/u/kmexZozqQ

AGENCIES: RUSD requests your agency's views on the scope and content of the environmental information relevant to your agency's statutory responsibilities in connection with the proposed project, in accordance with California Code of Regulations, Title 14, Section 15082(b). Your agency will need to use the EIR prepared by RUSD when considering your permit or other approval for the project.

ORGANIZATIONS AND INTERESTED PARTIES: The District requests your comments and concerns regarding the environmental issues associated with construction and operation of the proposed project.

PROJECT LOCATION: Redlands East Valley HS is located at 31000 East Colton Avenue (Assessor's Parcel Map Numbers 0299-031-30) in unincorporated San Bernardino County, California. The Redlands East Valley High School Stadium project (proposed project) would be developed within the existing school campus. Specifically, the proposed project would disturb approximately 6.95 acres of the western side of the approximately 60.1-acre campus (project site). The proposed project would not impact other areas of the campus.

Regional access to the Redlands East Valley HS campus is provided by State Route (SR) 38 located 0.5 miles north of the project site and Interstate 10 located approximately 3 miles west and south. Redlands East Valley HS is bounded by East Colton Avenue to the north, Opal Avenue to the west, King Street to the east, and agricultural uses to the south.

PROJECT DESCRIPTION: The proposed new football stadium and track and field facilities and associated improvements would replace the existing football field and track facilities. Plans include bleacher seating for 3,000 people, lighting, a home ticket booth and restroom/concession building, and visitor ticket booth and restroom/concession building. The proposed project would also include various improvements to landscaping, new chain-link fencing, access and circulation improvements, and emergency access improvements.

The new stadium would allow Redlands East Valley High School to hold home games and events at its own campus. The high school presently conducts its home games, track meets, and school events at various locations, including

NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING

Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. The onsite stadium would eliminate the need to bus event participants, e.g., coaches, athletes, and band members, to home games. The proposed project would also serve as a source of school and community pride by providing the high school with a state-of-the art facility, while at the same time increasing the quality of the high school's athletic curriculum.

POTENTIAL ENVIRONMENTAL EFFECTS: An EIR will be prepared to evaluate the project's potential impacts on the environment and analyze alternatives. The topics anticipated to be discussed in the EIR include aesthetics, air quality, energy, greenhouse gas emissions, hydrology and water quality, noise, public services, transportation, and Tribal cultural resources. The project's potential environmental effects are further described in the project's Initial Study, which is available for review as detailed below.

DOCUMENT AVAILABILITY: The Initial Study is available for public review at the following locations (physical locations during normal business hours): Masks are not required at the District Office if vaccinated.

- Redlands Unified School District, 20 W. Lugonia Avenue, Redlands, CA 92374
- Redlands East Valley High School, 31000 E Colton Ave, Redlands, CA 92374
- Redlands Unified School District website: https://www.redlandsusd.net/domain/5513

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

November 24, 2021

Ken Morse
Redlands Unified School District
20 W. Lugonia Ave.
Redlands, CA 92374

Re: 2021110378, Redlands East Valley High School Stadium Project, San Bernardino County

Dear Mr. Morse:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

Scoping Meeting Comment #1

Name: Jill Green
Affiliation: Unknown

I am so grateful for this meeting and so grateful to be included in it. In regard to parking, has that been, I haven't seen any parking planned out or talked about in this environmental impact report. Has that been taken into consideration?

From: Brian Foote <bfoote@cityofredlands.org>
Sent: Monday, December 20, 2021 4:55 PM
To: REV Stadium <revstadium@redlands.k12.ca.us>
Subject: [EXTERNAL]Notice of Preparation to prepare EIR - new stadium at Redlands East Valley High School (in Mentone)

To: Ken Morse

Re: Comment in response to the Notice of Preparation for REV HS Stadium Project

Comment from the City of Redlands Municipal Utilities & Engineering Dept.: "Section 3.19 (Utilities): It is true that the increase in usage during full capacity special events will not be an impact to the overall system. It is also true that the increase will not result in an impact to the even bigger picture of the Yucaipa/Beaumont/Redlands/etc. combined utility systems.
But, there should be an analysis/discussion regarding impact of the increase on the local site adjacent facilities for verification that there is capacity in the immediate area."

Please include appropriate analysis and discussion of new proposed activities/events or the future net increase (over existing activities/events) in terms of utilities, infrastructure, and road systems to the extent the project may (or may not) affect the City of Redlands located 1,350 feet to the west of the project site.

Thank you,

Brian Foote, AICP
City Planner/Planning Manager
City of Redlands

From: Don Young
Sent: Monday, November 29, 2021 3:08 PM
To: Brian Foote <bfoote@cityofredlands.org>
Subject: RE: Notice of Preparation to prepare EIR - new stadium at Redlands East Valley High School (in Mentone)

I will not be attending the scoping meeting.

From: Ryan Nordness <Ryan.Nordness@sanmanuel-nsn.gov>
Sent: Tuesday, December 21, 2021 2:41 PM
To: REV Stadium <revstadium@redlands.k12.ca.us>
Subject: [EXTERNAL]Redlands East Valley School Stadium Project

Hello Ken Morse,
Thank you for sending over the EIR report and scoping meeting for our invitation to make public comments. Unfortunately, the letter was sent to us on December 8th and we could not attend the scoping meeting. San Manuel's goal is to be a helpful resource and auxiliary support for our lead agency partners, to do so we require that these notices and invitations be sent to us so that we can make time to review them and attend those meetings. Perhaps there could be a digital notification in the future?

I hope this email finds you well and you have a wonderful time during the holidays.

Ryan Nordness
Cultural Resource Analyst
Ryan.Nordness@sanmanuel-nsn.gov
O:(909) 864-8933 Ext 50-2022

M:(909) 838-4053
26569 Community Center Dr Highland, California 92346

U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

January 6, 2022

Ken Morse
Redlands Unified School District
20 W. Lugonia Avenue
Redlands, California 92374

Dear Mr. Morse:

This is in response to your request for comments regarding Notice of Preparation of Environmental Impact Report and Scoping Meeting – Redlands East Valley High School Stadium Project.

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the City of Redlands (Community Number 060279) and County of San Bernardino (Community Number 060270), Maps revised September 2, 2016. Please note that the City of Redlands, San Bernardino County, California is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol.0 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any ***development*** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/business/nfip/forms.shtm.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The Redlands floodplain manager can be reached by calling Gouton Dobey, Senior Civil Engineer, at (909) 798-2158. The San Bernardino County floodplain manager can be reached by calling Brendon Biggs, Director, Public Works Department, at (909) 387-7906.

If you have any questions or concerns, please do not hesitate to contact Serena Cheung at serena.cheung@fema.dhs.gov or Brian Trushinski at brian.trushinski@fema.dhs.gov of the Mitigation staff.

Sincerely,

Michael Nakagaki, Branch Chief
Floodplain Management and Insurance Branch

cc:
Gouton Dobey, Senior Civil Engineer, City of Redlands
Brendon Biggs, Director, Department of Public Works, San Bernardino County
Garret Tam Sing/Salomon Miranda, State of California, Department of Water Resources, Southern Region Office
Kelly Soule, State of California, Department of Water Resources, Sacramento Headquarters Office
Serena Cheung, NFIP Planner, DHS/FEMA Region IX
Brian Trushinski, NFIP Planner, DHS/FEMA Region IX
Michael Audin, Acting Environmental Officer, DHS/FEMA Region IX

From: Panos, Adam <APanos@SBCFire.org>
Sent: Tuesday, December 21, 2021 4:09 PM
To: REV Stadium <revstadium@redlands.k12.ca.us>
Subject: [EXTERNAL]REV High School stadium project

Dear Mr. Morse or to whom it may concern

On behalf of the San Bernardino County Fire Department, I have reviewed the initial study document (Notice of Preparation of draft EIR) for this project. We do not have any comments at this time that were not already addressed in the document.

Please feel free to address any other correspondence to me as a point of contact. I will do my best to provide you any input you may need.

Thank you,

Adam A. Panos

Deputy Fire Marshal
Office of the Fire Marshal, Community Safety
San Bernardino County Fire Protection District
620 S. E Street
San Bernardino, CA 92415-0153
(909) 386-8400
www.sbcfire.org

"Where Courage, Integrity & Service meet"
www.sbcfire.org

Appendix B Air Quality, Greenhouse Gas Emissions, and Energy Analysis

Appendices

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Air Quality and Greenhouse Gas Appendix

Assumptions Worksheet

CalEEMod Inputs - Redlands East Valley HS Field, Construction

Name:	Redlands East Valley HS Field
Project Number:	RUS-13.0
Project Location:	31000 East Colton Avenue
County/Air Basin:	San Bernardino
Climate Zone:	10
Land Use Setting:	Urban
Operational Year:	2026
Utility Company:	Southern Californa Edison
Air Basin:	South Coast Air Basin
Air District:	SCAQMD
SRA:	35- East San Bernardino Valley

Proiect Site Acreage	6.95
Disturbed Site Acreage[1]	4.06

[1] ***Based on the maximum area disturbed in Phase 1 (P1) and Phase 3 (P3).***

Project Components	**SQFT**	**Tons**	**Phase**		
Worst-Case Demolition					
Asphalt Demolition	N/A	2,500	P1		
Worst-Case New Construction	***SQFT***	***Building Footprint***	***ACRES***	**Phase**	**Stories**
Home concession/restroom buildings[1]	5,417	2,709	0.00	P3	2
Total Non-Residential Area	**5,417**	**2,709**	**0.00**		
Other Non-Asphalt Surfaces					
Total Hardscape	26,965	NA	0.62	**P1**	
Total Landscaping	150,098	NA	3.45	**P1**	
Total Other Non-asphalt Surfaces	**177,063**		**4.06**		
Total	**182,480.00**		**4.06**		

Notes:

[1] Acreage has been accounted for in the other non-asphalt surface area.

CalEEMod Land Use Inputs

Land Use Type	**Land Use Subtype**	**Unit Amount**	**Size Metric**	**Lot Acreage**	**Land Use Square Feet**
Educational (Home concession/restroom buildings)[1]	High School	5.42	1000 sqft	0.00	5,417
Parking	Other Non-asphalt Surfaces	177.06	1000 sqft	4.06	177,063
			Total	**4.06**	

Notes:

[1] Acreage has been accounted for in the other non-asphalt surface area.

Demolition

Component	Amount to be Demolished (Tons)	Haul Truck Capacity (Tons)[1]	Haul Distance (miles)[2]	Total Trip Ends	Duration (days)	Trip Ends/Day
Asphalt Demolition Debris Haul	2500	20	25	250	10	25
Total	2,500			250		

Notes:

[1] CalEEMod default used.

[2] Haul distances of 25 miles provided by the Applicant.

Architectural Coating

	School
Interior Painted (%):	100%
Exterior Painted (%):	100%

Rule 1113	< 50 flat / ≤ 100 nonflat
CalEEMod Default	**grams/liter**
Interior Paint VOC content:	50
Exterior Paint VOC content:	50

Structures	Land Use Square Feet	CalEEMod Factor[1]	Total Paintable Surface Area	Paintable Interior Area[2]	Paintable Exterior Area[2]
Non-Residential Structures					
School	5,417	2.0	10,834	8,126	2,709
				8,126	**2,709**
Parking[3]					
Parking Lot (Striping)	28,795	6%	1,728	-	1,728
					1,728

Notes

[1] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user.

[2] CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[3] Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted. This parking lot will remain and only be re-striped.

Construction Mitigation

SCAQMD Rule 403

Replace Ground Cover	PM10:	5	% Reduction
	PM2.5:	5	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction

Unpaved Roads	Vehicle Speed:	15	mph
SCAQMD Rule 1186	Clean Paved Road	9	% PM Reduction

Additional Mitigation Measures

Water Exposed Area[1]	Frequency:	6	per day
	PM10:	31	% Reduction
	PM25:	31	% Reduction
Soil Stabilizer for Unpaved Roads[2]	PM10:	84	% Reduction
	PM2.5:	84	% Reduction

Notes:

[1] Applied mitigation measure to water frequency to 3 times per day to decrease fugitive dust only in Site Preparation phase.

[2] Applied mitigation measure of adding non-toxic soil stabilizer to decrease fugitive dust only in Site Preparation phase.

Southern California Edison Carbon Intensity Factors

	lbs/MWH
CO_2:[1,2]	509.98
CH_4:[3]	0.033
N_2O:[3]	0.004

Notes:

[1] Based on CO2e intensity factor of 512 pounds per megawatt hour; Southern California Edison. 2021. 2020 Sustainability Report. https://www.edison.com/home/sustainability/sustainability-report.html

[2] Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

[3] CalEEMod default values.

Global Warming Potentials (GWP)		
	AR4	AR5
CO_2	1	1
CH_4	25	28
N_2O	298	265

Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC).

Construction Activities and Schedule Assumptions: Redlands East Valley HS Field (Worst-Case Scenario)

based on durations provided by the District

Construction Schedule (Worst Case Phase 1 to 3)

Construction Activities	Phase Type	Start Date	End Date	CalEEMod Duration (Workday)
Asphalt Demolition	Demolition	3/5/2022	3/19/2022	10
Asphalt Demolition Debris Haul	Demolition	3/20/2022	4/2/2022	10
Site Preparation	Site Preparation	4/3/2022	4/9/2022	5
Rough Grading	Grading	4/10/2022	4/16/2022	5
Utility Trenching	Trenching	5/5/2022	5/18/2022	10
Fine Grading	Grading	5/28/2022	6/5/2022	5
Building Construction[1]	Building Construction	6/8/2022	11/2/2022	106
Asphalt Paving	Paving	6/15/2022	6/19/2022	3
Finishing/Landscaping	Trenching	6/8/2022	6/12/2022	3
Architectural Coating[2]	Architectural Coating	10/5/2022	11/2/2022	21

Notes:

[1] This accounts for the home ticket booth, concessions, custodial, and restroom building built in P3.

[2] Architectural Coating duration are assumed to be 20% of building construction duration. This accounts for painting of the home ticket booth facility and striping of the existing parking lot. See CalEEMod Appendix A.

Overlapping Construction Schedule

Construction Activities	Start Date	End Date	CalEEMod Duration (Workday)	Notes
Asphalt Demolition	3/5/2022	3/19/2022	10	Phase 1 Demolition
Asphalt Demolition Debris haul	3/20/2022	4/2/2022	10	Reflects the highest demo volumes in Phase 1
Site Preparation	4/3/2022	4/9/2022	5	Reflects the most intensive site preparation in Phase 1
Rough Grading	4/10/2022	4/16/2022	5	Reflects the most intensive site preparation in Phase 3
Utility Trenching	5/5/2022	5/18/2022	10	Reflects the most intensive utility trenching in Phases 3
Fine Grading	5/28/2022	6/5/2022	5	Reflects the most intensive fine grading in Phase 3
Building Construction and Finishing/Landscaping	6/8/2022	6/12/2022	3	Reflects the most intensive construction in Phase P3
Building Construction	6/13/2022	11/2/2022	103	Reflects the most intensive construction in Phase P3
Asphalt Paving	6/15/2022	6/19/2022	3	Reflects the asphalt paving needed in Phase 3
Architectural Coating	10/5/2022	11/2/2022	21	Reflects the most intensive painting needed in Phase 3

Notes:

[1] The "Worst-Case" scenario is an amalgam of the Proposed Project Phase 1 through Phase 3 construction. In order to model the highest peak daily emissions, construction emissions were modeled for year 2022 and assume all three components of the project would be underconstruction.

Overlapping Construction Schedule

Construction Activities	Start Date	End Date	CalEEMod Duration (Workday)	Notes
Asphalt Demolition	3/5/2022	3/19/2022	10	Phase 1 Demolition

Asphalt Demolition Debris haul	3/20/2022	4/2/2022	10	Reflects the highest demo volumes in Phase 1
Site Preparation	4/3/2022	4/9/2022	5	Reflects the most intensive site preparation in Phase 1
Rough Grading	4/10/2022	4/16/2022	5	Reflects the most intensive site preparation in Phase 3
Utility Trenching	5/5/2022	5/18/2022	10	Reflects the most intensive utility trenching in Phases 3
Fine Grading	5/28/2022	6/5/2022	5	Reflects the most intensive fine grading in Phase 3
Building Construction and Finishing/Landscaping	6/8/2022	6/12/2022	3	Reflects the most intensive construction in Phase P3
Building Construction 1	6/13/2022	6/14/2022	2	Reflects the most intensive construction in Phase P3
Building Construction and Asphalt Paving	6/15/2022	6/19/2022	3	Reflects the asphalt paving needed in Phase 3
Building Construction 2	6/20/2022	10/4/2022	77	Reflects the most intensive construction in Phase P3
Building Construction and Architectural Coating	10/5/2022	11/2/2022	21	Reflects the most intensive painting needed in Phase 3

Notes:

[1] The "Worst-Case" scenario is an amalgam of the Proposed Project Phase 1 through Phase 3 construction. To model the highest peak daily emissions, construction emissions were modeled for year 2022 and assume all three components of the project would be under construction.

CalEEMod Construction Off-Road Equipment Inputs

**Based on equipment mix and horsepower provided by the District*

General Construction Hours: 8 hours btwn 7:00 AM to 4:00 PM (with 1 hr break), Mon-Fri

CalEEMod Equipment	District Proposed Model	# of Equipment	hr/day	hp	load factor	total trips/Day
Asphalt Demolition (Phase 1)						
Crushing/Proc. Equipment	Cat Milling Machine (PM310)	1	8	336	0.78	
Crushing/Proc. Equipment	Terex Jaw Plant Crusher (CRJ3042)	1	8	85	0.78	
Rubber Tired Loaders	Liugong Wheel Loader (856)	1	8	193	0.36	
Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Excavators	John Deere Excavator With Hammer (350G)	1	8	271	0.38	
Rubber Tired Dozers	John Deere Dozer (700L)	1	8	135	0.4	
Worker Trips						15
Vendor Trips: Water Trucks						2
Hauling Trips (TOTAL TRIPS)						
Asphalt Demolition Debris Haul (Phase 1)						
Excavators	John Deere Excavator With Hammer (350G)	1	8	271	0.38	
Crushing/Proc. Equipment	Terex Jaw Plant Crusher (CRJ3042)	1	8	85	0.78	
Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Rubber Tired Dozers	John Deere Dozer (700L)	1	8	135	0.4	
Skid Steer Loaders	Takeuchi Skid Steer (TL12)	1	8	111	0.37	
Worker Trips						
Vendor Trips						
Hauling Trips (TOTAL TRIPS)						250
Site Preparation (Phase 1)						
Rubber Tired Loaders	Liugong Wheel Loader (856)	1	8	193	0.36	
Rubber Tired Dozers	Komatsu Dozer (D65EX-18)	1	8	217	0.4	
Rubber Tired Dozers	John Deere Dozer (700L)	2	8	135	0.4	
Skid Steer Loaders	Takeuchi Skid Steer (TL12)	1	8	111	0.37	
Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Frieghtliner Water Truck		1	8			
Worker Trips						15
Vendor Trips: Water Trucks						2
Hauling Trips (TOTAL TRIPS)						
Rough Grading (Phase 3)						
Rubber Tired Dozers	Komatsu Dozer (D65EX-18)	1	8	217	0.4	
Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Rubber Tired Dozers	John Deere Dozer (700L)	1	8	135	0.4	
Skid Steer Loaders	Takeuchi Skid Steer (TL12)	1	8	111	0.37	
Worker Trips						10
Vendor Trips: Water Trucks						2
Hauling Trips (TOTAL TRIPS)						
Fine Grading (Phase 3)						
Rubber Tired Dozers	John Deere Dozer (700L)	1	8	135	0.4	
Graders	John Deere Grader (620G/GP)	1	8	255	0.41	
Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Skid Steer Loaders	Takeuchi Skid Steer (TL12)	1	8	111	0.37	
Worker Trips						10
Vendor Trips: Water Trucks						2
Hauling Trips (TOTAL TRIPS)						
Utility Trenching (Phase 3)						
Excavators	John Deere Excavator With Hammer (350G)	1	8	271	0.38	
Rubber Tired Loaders	Liugong Wheel Loader (856)	1	8	193	0.36	
Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Skid Steer Loaders	Takeuchi Skid Steer (TL12)	1	8	111	0.37	
Worker Trips						10
Vendor Trips						
Hauling Trips (TOTAL TRIPS)						
Building Construction (Phase 3)						
Rubber Tired Dozers	John Deere Dozer (700L)	1	8	135	0.4	
Excavators	John Deere Excavator With Hammer (350G)	1	8	271	0.38	
Rubber Tired Dozers	Komatsu Dozer (D65EX-18)	1	8	217	0.4	
Skid Steer Loaders	Takeuchi Skid Steer (TL12)	1	8	111	0.37	

Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Worker Trips						77
Vendor Trips						30
Hauling Trips (TOTAL TRIPS)						
Asphalt Paving (Phase 3)						
Pavers	Cat Asphalt Paver (AP1055F)	1	8	225	0.42	
Rollers	Cat Double Drum Asphalt Roller (CB36B)	1	8	49	0.38	
Worker Trips						5
Vendor Trips: Water Trucks & Dump Trucks						14
Hauling Trips (TOTAL TRIPS)						
Building Construction & Finishing/landscaping (Phase 3)						
Rubber Tired Dozers	John Deere Dozer (700L)	1	8	135	0.4	
Rubber Tired Dozers	Komatsu Dozer (D65EX-18)	1	8	217	0.4	
Skid Steer Loaders	Takeuchi Skid Steer (TL12)	2	8	111	0.37	
Rollers	Cat Vibratory Soil Compator (CP11GC)	1	8	121	0.38	
Excavators	John Deere Excavator (350G)	2	8	271	0.38	
Pavers	Cat Asphalt Paver (AP1055F)	1	8	225	0.42	
Rollers	Cat Double Drum Asphalt Roller (CB36B)	1	8	49	0.38	
Worker Trips						77
Vendor Trips: Water Trucks & Dump Trucks						40
Hauling Trips (TOTAL TRIPS)						
Architectural Coating (based on Phase 3 Building Construction)						
Air Compressor	NA	1	6	78	0.48	
Worker Trips						15
Vendor Trips						
Hauling Trips (TOTAL TRIPS)						

Notes

[1] *Used CalEEMod default for Terex Jaw Plant Crusher as worst-case scenario for this type of equipment.*

Construction Trips Worksheet

Phase Name	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends	Total Haul Truck Trip Ends	Start Date	End Date	Workdays
Asphalt Demolition	15	2	0	0	3/5/2022	3/19/2022	10
Asphalt Demolition Debris haul	0	0	25	250	3/20/2022	4/2/2022	10
Site Preparation	15	2	0	0	4/3/2022	4/9/2022	5
Rough Grading	10	2	0	0	4/10/2022	4/16/2022	5
Utility Trenching	10	0	0	0	5/5/2022	5/18/2022	10
Fine Grading	10	2	0	0	5/28/2022	6/5/2022	5
Building Construction and Finishing/Landscaping	77	40	0	0	6/8/2022	6/12/2022	3
Building Construction	77	30	0	0	6/13/2022	11/2/2022	103
Asphalt Paving	5	14	0	0	6/15/2022	6/19/2022	3
Architectural Coating	15	0	0	0	10/5/2022	11/2/2022	21

Construction Activity (Overlapping)	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Total Trip Ends Per Day	Start Date	End Date	Workdays
Asphalt Demolition	15	2	0	17	3/5/2022	3/19/2022	10
Asphalt Demolition Debris haul	0	0	25	25	3/20/2022	4/2/2022	10
Site Preparation	15	2	0	17	4/3/2022	4/9/2022	5
Rough Grading	10	2	0	12	4/10/2022	4/16/2022	5
Utility Trenching	10	0	0	10	5/5/2022	5/18/2022	10
Fine Grading	10	2	0	12	5/28/2022	6/5/2022	5
Building Construction and Finishing/Landscaping	77	40	0	117	6/8/2022	6/12/2022	3
Building Construction 1	77	30	0	107	6/13/2022	6/14/2022	2
Building Construction and Asphalt Paving	82	44	0	126	6/15/2022	6/19/2022	3
Building Construction 2	77	30	0	107	6/20/2022	10/4/2022	77
Building Construction and Architectural Coating	92	30	0	122	10/5/2022	11/2/2022	21
Maximum Daily Trips	**92**	**44**	**25**	**126**			

Musco Stadium Lighting Calculations - Redlands East Valley HS Field, Operations

Southern California Edison Carbon Intensity Factors

	lbs/MWH
CO_2:[1,2]	509.98
CH_4:[3]	0.033
N_2O:[3]	0.004

Notes:

[1] Based on CO2e intensity factor of 512 pounds per megawatt hour; Southern California Edison. 2021. 2020 Sustainability Report. https://www.edison.com/home/sustainability/sustainability-report.html

[2] Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

[3] CalEEMod default values.

Global Warming Potentials (GWP)		
	AR4	**AR5**
CO_2	1	1
CH_4	25	28
N_2O	298	265

Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC).

Lighting (Electricity Use)

Electricity:				
	kW/Event [1]	**Events/Year[2]**	**Hours[3]**	**Kwh (Annual)**
Practices/Games	74.81	60	4	17,954
			Total Annual kWh	17,954

Calculation of GHGs from Field Lighting				
CO_2 [4]	CH_4 [4]	N_2O [4]	CO_2e	CO_2e
lbs/Mwh	lbs/Mwh	lbs/Mwh	lbs/Mwh	MT/Kwh
509.98300	0.03300	0.00400	510.02	0.000231
				MT/Year
			CO_2e from Lighting	**4.15**

Notes

[1] Based on Musco Lighting Plan for the proposed high school stadium as provided by the District.

[2] Based on the estimated total of 60 events per year that was provided by Applicant.

[3] Based on four hours per day maximum.

[4] California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod), Version 2016.3.2. Based on the California Air Resources Board (CARB) Local Government Operations Protocol (LGO) for CO_2 and E-Grid values for CH_4 and N_2O. Appendix D, Default Data Tables. Table 1.2, Electrical Utility Emission Factors of GHGs.

Emissions Worksheet

Regional Construction Emissions Worksheet:

Asphalt Demolition								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022 Summer**						
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022 Winter**						
	Off-Road		2.87	21.33	18.58	0.05	0.94	0.89
	Total		**2.87**	**21.33**	**18.58**	**0.05**	**0.94**	**0.89**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.09	0.03	0.00	0.01	0.00
	Worker		0.06	0.04	0.51	0.00	0.16	0.04
	Total		**0.06**	**0.13**	**0.54**	**0.00**	**0.17**	**0.05**
TOTAL			***2.94***	***21.47***	***19.12***	***0.06***	***1.11***	***0.94***
Onsite		**2022**						
	Off-Road		2.87	21.33	18.58	0.05	0.94	0.89
	Total		**2.87**	**21.33**	**18.58**	**0.05**	**0.94**	**0.89**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.09	0.03	0.00	0.01	0.00
	Worker		0.06	0.04	0.51	0.00	0.16	0.04
	Total		**0.06**	**0.13**	**0.54**	**0.00**	**0.17**	**0.05**
TOTAL			***2.94***	***21.47***	***19.12***	***0.06***	***1.11***	***0.94***

Asphalt Demolition Debris Haul								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Summer						
	Fugitive Dust							
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022** Winter						
	Fugitive Dust						2.29	0.35
	Off-Road		1.53	13.60	14.52	0.03	0.68	0.64
	Total		**1.53**	**13.60**	**14.52**	**0.03**	**2.96**	**0.98**
Offsite								
	Hauling		0.09	3.58	0.91	0.01	0.44	0.15
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.05	0.04	0.44	0.00	0.13	0.04
	Total		**0.14**	**3.61**	**1.35**	**0.02**	**0.58**	**0.18**
TOTAL			***1.68***	***17.21***	***15.87***	***0.04***	***3.54***	***1.17***
Onsite		**2022**						
	Fugitive Dust		0.00	0.00	0.00	0.00	2.29	0.35
	Off-Road		1.53	13.60	14.52	0.03	0.68	0.64
	Total		**1.53**	**13.60**	**14.52**	**0.03**	**2.96**	**0.98**
Offsite								
	Hauling		0.09	3.58	0.91	0.01	0.44	0.15
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.05	0.04	0.44	0.00	0.13	0.04
	Total		**0.14**	**3.61**	**1.35**	**0.02**	**0.58**	**0.18**
TOTAL			***1.68***	***17.21***	***15.87***	***0.04***	***3.54***	***1.17***

Site Preparation								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Summer						
	Fugitive Dust							
	Off-Road							
	Total							

Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022** Winter						
	Fugitive Dust						8.18	4.29
	Off-Road	2.33	23.87	16.17	0.03		1.17	1.08
	Total	**2.33**	**23.87**	**16.17**	**0.03**		**9.35**	**5.37**
Offsite								
	Hauling	0.00	0.00	0.00	0.00		0.00	0.00
	Vendor	0.00	0.09	0.03	0.00		0.01	0.00
	Worker	0.06	0.04	0.51	0.00		0.16	0.04
	Total	**0.06**	**0.13**	**0.54**	**0.00**		**0.17**	**0.05**
TOTAL		***2.40***	***24.00***	***16.71***	***0.03***		***9.52***	***5.42***
Onsite		**2022**						
	Fugitive Dust	0.00	0.00	0.00	0.00		8.18	4.29
	Off-Road	2.33	23.87	16.17	0.03		1.17	1.08
	Total	**2.33**	**23.87**	**16.17**	**0.03**		**9.35**	**5.37**
Offsite								
	Hauling	0.00	0.00	0.00	0.00		0.00	0.00
	Vendor	0.00	0.09	0.03	0.00		0.01	0.00
	Worker	0.06	0.04	0.51	0.00		0.16	0.04
	Total	**0.06**	**0.13**	**0.54**	**0.00**		**0.17**	**0.05**
TOTAL		***2.40***	***24.00***	***16.71***	***0.03***		***9.52***	***5.42***

Rough Grading

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Summer						
	Fugitive Dust							
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022** Winter						
	Fugitive Dust						2.80	1.44
	Off-Road	1.49	15.46	11.14	0.02		0.76	0.70
	Total	**1.49**	**15.46**	**11.14**	**0.02**		**3.56**	**2.14**
Offsite								
	Hauling	0.00	0.00	0.00	0.00		0.00	0.00
	Vendor	0.00	0.09	0.03	0.00		0.01	0.00
	Worker	0.04	0.03	0.34	0.00		0.10	0.03
	Total	**0.04**	**0.12**	**0.37**	**0.00**		**0.12**	**0.03**
TOTAL		***1.53***	***15.58***	***11.51***	***0.02***		***3.68***	***2.17***
Onsite		**2022**						
	Fugitive Dust	0.00	0.00	0.00	0.00		2.80	1.44
	Off-Road	1.49	15.46	11.14	0.02		0.76	0.70
	Total	**1.49**	**15.46**	**11.14**	**0.02**		**3.56**	**2.14**
Offsite								
	Hauling	0.00	0.00	0.00	0.00		0.00	0.00
	Vendor	0.00	0.09	0.03	0.00		0.01	0.00
	Worker	0.04	0.03	0.34	0.00		0.10	0.03
	Total	**0.04**	**0.12**	**0.37**	**0.00**		**0.12**	**0.03**
TOTAL		***1.53***	***15.58***	***11.51***	***0.02***		***3.68***	***2.17***

Utility Trenching

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Summer						
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								

Onsite		**2022** Winter						
	Off-Road		0.76	7.74	8.11	0.02	0.28	0.26
	Total		**0.76**	**7.74**	**8.11**	**0.02**	**0.28**	**0.26**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.04	0.03	0.34	0.00	0.10	0.03
	Total		**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL			***0.80***	***7.77***	***8.45***	***0.02***	***0.39***	***0.29***
Onsite		**2022**						
	Off-Road		0.76	7.74	8.11	0.02	0.28	0.26
	Total		**0.76**	**7.74**	**8.11**	**0.02**	**0.28**	**0.26**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.04	0.03	0.34	0.00	0.10	0.03
	Total		**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL			***0.80***	***7.77***	***8.45***	***0.02***	***0.39***	***0.29***

Fine Grading								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Summer						
	Fugitive Dust							
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022** Winter						
	Fugitive Dust						3.03	1.46
	Off-Road		1.40	13.67	10.87	0.02	0.63	0.58
	Total		**1.40**	**13.67**	**10.87**	**0.02**	**3.66**	**2.05**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.09	0.03	0.00	0.01	0.00
	Worker		0.04	0.03	0.34	0.00	0.10	0.03
	Total		**0.04**	**0.12**	**0.37**	**0.00**	**0.12**	**0.03**
TOTAL			***1.44***	***13.79***	***11.24***	***0.02***	***3.78***	***2.08***
Onsite		**2022**						
	Fugitive Dust		0.00	0.00	0.00	0.00	3.03	1.46
	Off-Road		1.40	13.67	10.87	0.02	0.63	0.58
	Total		**1.40**	**13.67**	**10.87**	**0.02**	**3.66**	**2.05**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.09	0.03	0.00	0.01	0.00
	Worker		0.04	0.03	0.34	0.00	0.10	0.03
	Total		**0.04**	**0.12**	**0.37**	**0.00**	**0.12**	**0.03**
TOTAL			***1.44***	***13.79***	***11.24***	***0.02***	***3.78***	***2.08***

Building Construction and Finishing/Landscaping								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Summer						
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022** Winter						
	Off-Road		2.55	25.35	20.49	0.05	1.12	1.03
	Total		**2.55**	**25.35**	**20.49**	**0.05**	**1.12**	**1.03**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.07	1.84	0.67	0.01	0.26	0.09
	Worker		0.31	0.22	2.60	0.01	0.80	0.22
	Total		**0.38**	**2.06**	**3.27**	**0.01**	**1.06**	**0.31**
TOTAL			***2.93***	***27.40***	***23.76***	***0.06***	***2.18***	***1.34***

Onsite		**2022**						
	Off-Road		2.55	25.35	20.49	0.05	1.12	1.03
	Total		**2.55**	**25.35**	**20.49**	**0.05**	**1.12**	**1.03**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.07	1.84	0.67	0.01	0.26	0.09
	Worker		0.31	0.22	2.60	0.01	0.80	0.22
	Total		**0.38**	**2.06**	**3.27**	**0.01**	**1.06**	**0.31**
TOTAL			***2.93***	***27.40***	***23.76***	***0.06***	***2.18***	***1.34***

Building Construction (6/13/2022-6/14/2022)								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022**	Summer					
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022**	Winter					
	Off-Road		1.72	17.35	13.06	0.03	0.83	0.76
	Total		**1.72**	**17.35**	**13.06**	**0.03**	**0.83**	**0.76**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.05	1.38	0.50	0.01	0.20	0.07
	Worker		0.31	0.22	2.60	0.01	0.80	0.22
	Total		**0.36**	**1.60**	**3.10**	**0.01**	**0.99**	**0.28**
TOTAL			***2.08***	***18.95***	***16.17***	***0.04***	***1.82***	***1.04***
Onsite		**2022**						
	Off-Road		1.72	17.35	13.06	0.03	0.83	0.76
	Total		**1.72**	**17.35**	**13.06**	**0.03**	**0.83**	**0.76**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.05	1.38	0.50	0.01	0.20	0.07
	Worker		0.31	0.22	2.60	0.01	0.80	0.22
	Total		**0.36**	**1.60**	**3.10**	**0.01**	**0.99**	**0.28**
TOTAL			***2.08***	***18.95***	***16.17***	***0.04***	***1.82***	***1.04***

Asphalt Paving								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022**	Summer					
	Off-Road							
	Paving							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022**	Winter					
	Off-Road		0.48	4.52	3.13	0.01	0.17	0.16
	Paving		0.00				0.00	0.00
	Total		**0.48**	**4.52**	**3.13**	**0.01**	**0.17**	**0.16**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.02	0.64	0.23	0.00	0.09	0.03
	Worker		0.02	0.01	0.17	0.00	0.05	0.01
	Total		**0.04**	**0.66**	**0.40**	**0.00**	**0.14**	**0.05**
TOTAL			***0.52***	***5.18***	***3.53***	***0.01***	***0.32***	***0.20***
Onsite		**2022**						
	Off-Road		0.48	4.52	3.13	0.01	0.17	0.16
	Paving		0.00	0.00	0.00	0.00	0.00	0.00
	Total		**0.48**	**4.52**	**3.13**	**0.01**	**0.17**	**0.16**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.02	0.64	0.23	0.00	0.09	0.03
	Worker		0.02	0.01	0.17	0.00	0.05	0.01
	Total		**0.04**	**0.66**	**0.40**	**0.00**	**0.14**	**0.05**
TOTAL			***0.52***	***5.18***	***3.53***	***0.01***	***0.32***	***0.20***

Building Construction (6/20/2022-10/4/2022)							
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022 Summer**						
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022 Winter**						
	Off-Road		1.37	13.63	11.87	0.03	0.61	0.56
	Total		**1.37**	**13.63**	**11.87**	**0.03**	**0.61**	**0.56**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.05	1.38	0.50	0.01	0.20	0.07
	Worker		0.31	0.22	2.60	0.01	0.80	0.22
	Total		**0.36**	**1.60**	**3.10**	**0.01**	**0.99**	**0.28**
TOTAL			***1.73***	***15.23***	***14.97***	***0.04***	***1.60***	***0.84***

Architectural Coating							
		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022** Summer						
	Architectural Coating						
	Off-Road						
	Total						
Offsite							
	Hauling						
	Vendor						
	Worker						
	Total						
TOTAL							
Onsite	**2022** Winter						
	Architectural Coating	2.77				0.00	0.00
	Off-Road	0.20	1.41	1.81	0.00	0.08	0.08
	Total	**2.98**	**1.41**	**1.81**	**0.00**	**0.08**	**0.08**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.06	0.04	0.51	0.00	0.16	0.04
	Total	**0.06**	**0.04**	**0.51**	**0.00**	**0.16**	**0.04**
TOTAL		***3.04***	***1.45***	***2.32***	***0.00***	***0.24***	***0.12***
Onsite	**2022**						
	Architectural Coating	2.77	0.00	0.00	0.00	0.00	0.00
	Off-Road	0.20	1.41	1.81	0.00	0.08	0.08
	Total	**2.98**	**1.41**	**1.81**	**0.00**	**0.08**	**0.08**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.06	0.04	0.51	0.00	0.16	0.04
	Total	**0.06**	**0.04**	**0.51**	**0.00**	**0.16**	**0.04**
TOTAL		***3.04***	***1.45***	***2.32***	***0.00***	***0.24***	***0.12***

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Asphalt Demolition	***3***	***21***	***19***	***0***	***1***	***1***
Asphalt Demolition Debris Haul	***2***	***17***	***16***	***0***	***4***	***1***

Site Preparation	*2*	*24*	*17*	*0*	*10*	*5*
Rough Grading	*2*	*16*	*12*	*0*	*4*	*2*
Utilities Trenching	*1*	*8*	*8*	*0*	*0*	*0*
Fine Grading	*1*	*14*	*11*	*0*	*4*	*2*
Building Construction and Finishing/Landscaping	*3*	*27*	*24*	*0*	*2*	*1*
Building Construction (6/13/2022-6/14/2022)	*2*	*19*	*16*	*0*	*2*	*1*
Building Construction and Asphalt Paving	*3*	*24*	*20*	*0*	*2*	*1*
Building Construction (6/20/2022-10/4/2022)	*2*	*15*	*15*	*0*	*2*	*1*
Building Construction and Architectural Coating	*5*	*17*	*17*	*0*	*2*	*1*
MAX DAILY	**5**	**27**	**24**	**0**	**10**	**5**
Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Construction LST Worksheet:

Asphalt Demolition						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Off-Road		21.33	18.58	0.94	0.89
	Total		**21.33**	**18.58**	**0.94**	**0.89**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***21.33***	***18.58***	***0.94***	***0.89***
Onsite		**2022**				
	Off-Road		21.33	18.58	0.94	0.89
	Total		**21.33**	**18.58**	**0.94**	**0.89**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***21.33***	***18.58***	***0.94***	***0.89***

Asphalt Demolition Debris Haul						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Fugitive Dust					
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Fugitive Dust				2.29	0.35
	Off-Road		13.60	14.52	0.68	0.64
	Total		**13.60**	**14.52**	**2.96**	**0.98**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***13.60***	***14.52***	***2.96***	***0.98***
Onsite		**2022**				
	Fugitive Dust		0.00	0.00	2.29	0.35
	Off-Road		13.60	14.52	0.68	0.64
	Total		**13.60**	**14.52**	**2.96**	**0.98**
Offsite						

	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***13.60***	***14.52***	***2.96***	***0.98***

Site Preparation						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Fugitive Dust					
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Fugitive Dust				8.18	4.29
	Off-Road		23.87	16.17	1.17	1.08
	Total		**23.87**	**16.17**	**9.35**	**5.37**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***23.87***	***16.17***	***9.35***	***5.37***
Onsite		**2022**				
	Fugitive Dust		0.00	0.00	8.18	4.29
	Off-Road		23.87	16.17	1.17	1.08
	Total		**23.87**	**16.17**	**9.35**	**5.37**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***23.87***	***16.17***	***9.35***	***5.37***

Rough Grading						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Fugitive Dust					
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Fugitive Dust				2.80	1.44
	Off-Road		15.46	11.14	0.76	0.70
	Total		**15.46**	**11.14**	**3.56**	**2.14**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***15.46***	***11.14***	***3.56***	***2.14***

Onsite		**2022**				
	Fugitive Dust		0.00	0.00	2.80	1.44
	Off-Road		15.46	11.14	0.76	0.70
	Total		**15.46**	**11.14**	**3.56**	**2.14**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***15.46***	***11.14***	***3.56***	***2.14***

Utility Trenching

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Off-Road		7.74	8.11	0.28	0.26
	Total		**7.74**	**8.11**	**0.28**	**0.26**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***7.74***	***8.11***	***0.28***	***0.26***
Onsite		**2022**				
	Off-Road		7.74	8.11	0.28	0.26
	Total		**7.74**	**8.11**	**0.28**	**0.26**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***7.74***	***8.11***	***0.28***	***0.26***

Fine Grading

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Fugitive Dust					
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Fugitive Dust				3.03	1.46
	Off-Road		13.67	10.87	0.63	0.58
	Total		**13.67**	**10.87**	**3.66**	**2.05**
Offsite						
	Hauling					
	Vendor					

	Worker					
	Total					
TOTAL			***13.67***	***10.87***	***3.66***	***2.05***
Onsite		**2022**				
	Fugitive Dust		0.00	0.00	3.03	1.46
	Off-Road		13.67	10.87	0.63	0.58
	Total		**13.67**	**10.87**	**3.66**	**2.05**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***13.67***	***10.87***	***3.66***	***2.05***

Building Construction and Finishing/Landscaping

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Off-Road		25.35	20.49	1.12	1.03
	Total		**25.35**	**20.49**	**1.12**	**1.03**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***25.35***	***20.49***	***1.12***	***1.03***
Onsite		**2022**				
	Off-Road		25.35	20.49	1.12	1.03
	Total		**25.35**	**20.49**	**1.12**	**1.03**
Offsite						
	Hauling		0.00	0.00	0.00	0.00
	Vendor		0.00	0.00	0.00	0.00
	Worker		0.00	0.00	0.00	0.00
	Total		**0.00**	**0.00**	**0.00**	**0.00**
TOTAL			***25.35***	***20.49***	***1.12***	***1.03***

Building Construction (6/13/2022-6/14/2022)

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Off-Road		17.35	13.06	0.83	0.76
	Total		**17.35**	**13.06**	**0.83**	**0.76**
Offsite						
	Hauling					

	Vendor					
	Worker					
	Total					
TOTAL			***17.35***	***13.06***	***0.83***	***0.76***
Onsite		**2022**				
	Off-Road		17.35	13.06	0.83	0.76
	Total		**17.35**	**13.06**	**0.83**	**0.76**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***17.35***	***13.06***	***0.83***	***0.76***

Asphalt Paving						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road					
	Paving					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Off-Road		4.52	3.13	0.17	0.16
	Paving				0.00	0.00
	Total		**4.52**	**3.13**	**0.17**	**0.16**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***4.52***	***3.13***	***0.17***	***0.16***
Onsite		**2022**				
	Off-Road		4.52	3.13	0.17	0.16
	Paving		0.00	0.00	0.00	0.00
	Total		**4.52**	**3.13**	**0.17**	**0.16**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***4.52***	***3.13***	***0.17***	***0.16***

Building Construction (6/20/2022-10/4/2022)						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				

	Off-Road		13.63	11.87	0.61	0.56
	Total		**13.63**	**11.87**	**0.61**	**0.56**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***13.63***	***11.87***	***0.61***	***0.56***
Onsite		**2022**				
	Off-Road		13.63	11.87	0.61	0.56
	Total		**13.63**	**11.87**	**0.61**	**0.56**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***13.63***	***11.87***	***0.61***	***0.56***

Architectural Coating

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Architectural Coating					
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Architectural Coating				0.00	0.00
	Off-Road		1.41	1.81	0.08	0.08
	Total		**1.41**	**1.81**	**0.08**	**0.08**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***1.41***	***1.81***	***0.08***	***0.08***
Onsite		**2022**				
	Architectural Coating		0.00	0.00	0.00	0.00
	Off-Road		1.41	1.81	0.08	0.08
	Total		**1.41**	**1.81**	**0.08**	**0.08**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***1.41***	***1.81***	***0.08***	***0.08***

	NOx	CO	PM10 Total	PM2.5 Total
Asphalt Demolition	***21***	***19***	***0.94***	***0.89***
≤ 1.00 Acre LST	***118***	***775***	***4.00***	***4.00***
Exceeds LST?	***no***	***no***	***no***	***no***
Asphalt Demolition Debris Haul	***14***	***15***	***2.96***	***0.98***
≤ 1.00 Acre LST	***118***	***775***	***4.00***	***4.00***
Exceeds LST?	***no***	***no***	***no***	***no***

Site Preparation	*24*	*16*	*9.35*	*5.37*
2.50 Acre LST	*187*	*1,324*	*8.16*	*5.67*
Exceeds LST?	*no*	*no*	*yes*	*no*
Rough Grading	*15*	*11*	*3.56*	*2.14*
1.50 Acre LST	*144*	*974*	*5.50*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*
Utilities Trenching	*8*	*8*	*0.28*	*0.26*
≤ 1.00 Acre LST	*118*	*775*	*4.00*	*4.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Fine Grading	*14*	*11*	*3.66*	*2.05*
1.50 Acre LST	*144*	*974*	*5.50*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction and Finishing/Landscaping	*25*	*20*	*1.12*	*1.03*
1.50 Acre LST	*144*	*974*	*5.50*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction (6/13/2022-6/14/2022)	*17*	*13*	*0.83*	*0.76*
1.50 Acre LST	*144*	*974*	*5.50*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction and Asphalt Paving	*22*	*16*	*1.00*	*0.92*
1.50 Acre LST	*144*	*974*	*5.50*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction (6/20/2022-10/4/2022)	*14*	*12*	*0.61*	*0.56*
1.50 Acre LST	*144*	*974*	*5.50*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction and Architectural Coating	*15*	*14*	*0.69*	*0.64*
1.50 Acre LST	*144*	*974*	*5.50*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*

Regional Construction Emissions Worksheet (Mitigated):

Site Preparation								
			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Summer						
	Fugitive Dust							
	Off-Road							
	Total							
Offsite								
	Hauling							
	Vendor							
	Worker							
	Total							
TOTAL								
Onsite		**2022** Winter						
	Fugitive Dust						7.28	3.74
	Off-Road		0.46	10.94	19.89	0.03	0.05	0.05
	Total		**0.46**	**10.94**	**19.89**	**0.03**	**7.33**	**3.79**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.09	0.03	0.00	0.01	0.00
	Worker		0.06	0.04	0.51	0.00	0.16	0.04
	Total		**0.06**	**0.13**	**0.54**	**0.00**	**0.17**	**0.05**
TOTAL			***0.53***	***11.08***	***20.43***	***0.03***	***7.50***	***3.84***
Onsite		**2022**						
	Fugitive Dust		0.00	0.00	0.00	0.00	7.28	3.74
	Off-Road		0.46	10.94	19.89	0.03	0.05	0.05
	Total		**0.46**	**10.94**	**19.89**	**0.03**	**7.33**	**3.79**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.09	0.03	0.00	0.01	0.00
	Worker		0.06	0.04	0.51	0.00	0.16	0.04
	Total		**0.06**	**0.13**	**0.54**	**0.00**	**0.17**	**0.05**
TOTAL			***0.53***	***11.08***	***20.43***	***0.03***	***7.50***	***3.84***
Site Preparation			***1***	***11***	***20***	***0***	***8***	***4***
MAX DAILY			**1**	**11**	**20**	**0**	**8**	**4**
Regional Thresholds			**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?			No	No	No	No	No	No

Regional Construction Emissions Worksheet (Mitigated):

Site Preparation						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Fugitive Dust					
	Off-Road					
	Total					
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL						
Onsite		**2022**				
	Fugitive Dust				7.28	3.74
	Off-Road		10.94	19.89	0.05	0.05
	Total		**10.94**	**19.89**	**7.33**	**3.79**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***10.94***	***19.89***	***7.33***	***3.79***
Onsite		**2022**				
	Fugitive Dust		0.00	0.00	7.28	3.74
	Off-Road		10.94	19.89	0.05	0.05
	Total		**10.94**	**19.89**	**7.33**	**3.79**
Offsite						
	Hauling					
	Vendor					
	Worker					
	Total					
TOTAL			***10.94***	***19.89***	***7.33***	***3.79***
3	***Site Preparation***		***11***	***20***	***7.33***	***3.79***
	2.50 Acre LST		***187***	***1,324***	***8.16***	***5.67***
	Exceeds LST?		***no***	***no***	***no***	***no***

GHG Emissions Inventory

Source: CalEEMod, Version 2020.4.0

$MTCO_2e$=metric tons of carbon dioxide equivalent.

Construction

	$MTCO_2e$
Phase 1 - Year 2022 (Wost-Case Model Run)	283
Phase 2 - Year 2024	283
Phase 3 - Year 2026	283
Total Construction	**848**
30-Year Amortization[1]	**28**

Notes

1

Total construction emissions are amortized over 30 years per South Coast AQMD Working Group methodology; South Coast AQMD. 2009, November 19. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 14. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-14/ghg-meeting-14-main-presentation.pdf?sfvrsn=2.

2 Assumes same amount of $MTCO_2e$ as year 2022

Net Operation	$MTCO_2e$	**Percent of Emissions**
Energy[1]	4	13%
30-Yr Amortized Construction Emissions	28	87%
Total	**32**	**100%**
South Coast AQMD Working Group Threshold	3,000	
Exceed Threshold?	**No**	

Notes

1 Includes emissions from lighting use. See assumptions file for calculations.

CalEEMod Construction Model

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Redlands East Valley HS Field

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	5.42	1000sqft	0.00	5,417.00	0
Other Non-Asphalt Surfaces	177.06	1000sqft	4.06	177,063.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	509.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on 2020 Sustainability Report.

Land Use - Based on applicant info. (see assumptions file).

Construction Phase - Compiled "worst-case" scenario of the Proposed Phases 1-3 for year 2022 to model highest peak daily emissions (see assumptions file).

Off-road Equipment -

Off-road Equipment - Based on equipment mix provided by District, used deafult HP for Terex Jaw Plant Crusher as worst-case scenario

Off-road Equipment - Equipment provided by applicant, see assumptions file

Off-road Equipment - Based on equipment mix provided by District (see assumptions file)

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Trips and VMT - Assume 2 vt/day/water truck, accounted for dump trucks based on applicant's equipment mix, see assumptions file

Demolition -

Grading -

Architectural Coating - Based on applicant info. (see assumptions file), existing parking lot will remain and be re-striped.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403 and SCAQMD Rule 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	10,624.00	1,728.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	21.00
tblConstructionPhase	NumDays	230.00	3.00
tblConstructionPhase	NumDays	230.00	103.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	8.00	5.00
tblConstructionPhase	NumDays	8.00	5.00
tblConstructionPhase	NumDays	18.00	3.00
tblLandUse	LandUseSquareFeet	5,420.00	5,417.00
tblLandUse	LandUseSquareFeet	177,060.00	177,063.00
tblLandUse	LotAcreage	0.12	0.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	187.00	255.00

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tblOffRoadEquipment	HorsePower	130.00	225.00
tblOffRoadEquipment	HorsePower	80.00	49.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	85.00	336.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	130.00	225.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	49.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	203.00	193.00

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tblOffRoadEquipment	HorsePower	203.00	193.00
tblOffRoadEquipment	HorsePower	203.00	193.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

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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	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	509.98
tblTripsAndVMT	HaulingTripNumber	247.00	250.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	30.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	0.1878	1.4511	1.2388	3.1000e-003	0.1721	0.0647	0.2369	0.0631	0.0599	0.1229	0.0000	278.9618	278.9618	0.0620	6.7300e-003	282.5192
Maximum	**0.1878**	**1.4511**	**1.2388**	**3.1000e-003**	**0.1721**	**0.0647**	**0.2369**	**0.0631**	**0.0599**	**0.1229**	**0.0000**	**278.9618**	**278.9618**	**0.0620**	**6.7300e-003**	**282.5192**

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					
2022	0.1877	1.4511	1.2388	3.1000e-003	0.1045	0.0647	0.1692	0.0354	0.0599	0.0953	0.0000	278.9616	278.9616	0.0620	6.7300e-003	282.5190
Maximum	**0.1877**	**1.4511**	**1.2388**	**3.1000e-003**	**0.1045**	**0.0647**	**0.1692**	**0.0354**	**0.0599**	**0.0953**	**0.0000**	**278.9616**	**278.9616**	**0.0620**	**6.7300e-003**	**282.5190**

	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	**0.01**	**0.00**	**0.00**	**0.00**	**39.29**	**0.00**	**28.56**	**43.85**	**0.00**	**22.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-5-2022	6-4-2022	0.5256	0.5256
2	6-5-2022	9-4-2022	1.6582	1.6582
3	9-5-2022	9-30-2022	0.4912	0.4912
		Highest	1.6582	1.6582

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt Demolition	Demolition	3/5/2022	3/19/2022	5	10	a
2	Asphalt Demolition Debris Haul	Demolition	3/20/2022	4/2/2022	5	10	b
3	Site Preparation	Site Preparation	4/3/2022	4/9/2022	5	5	c
4	Rough Grading	Grading	4/10/2022	4/16/2022	5	5	d
5	Utility Trenching	Trenching	5/5/2022	5/18/2022	5	10	e
6	Fine Grading	Grading	5/28/2022	6/5/2022	5	5	f
7	Building Construction and Finishing/Landscaping	Building Construction	6/8/2022	6/12/2022	5	3	g
8	Building Construction	Building Construction	6/13/2022	11/2/2022	5	103	h
9	Asphalt Paving	Paving	6/15/2022	6/19/2022	5	3	i
10	Architectural Coating	Architectural Coating	10/5/2022	11/2/2022	5	21	j

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 2.5

Acres of Paving: 4.06

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,126; Non-Residential Outdoor: 2,709; Striped Parking Area: 1,728 (Architectural

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition	Crushing/Proc. Equipment	1	8.00	336	0.78
Asphalt Demolition	Crushing/Proc. Equipment	1	8.00	85	0.78
Asphalt Demolition	Excavators	0	8.00	158	0.38
Asphalt Demolition	Excavators	1	8.00	271	0.38
Asphalt Demolition	Rollers	1	8.00	121	0.38
Asphalt Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Asphalt Demolition	Rubber Tired Dozers	1	8.00	135	0.40
Asphalt Demolition	Rubber Tired Loaders	1	8.00	193	0.36
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition Debris Haul	Excavators	1	8.00	271	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	1	8.00	135	0.40
Site Preparation	Aerial Lifts			63	0.31
Site Preparation	Rollers	1	8.00	121	0.38
Site Preparation	Rubber Tired Dozers	2	8.00	135	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	217	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	193	0.36
Site Preparation	Skid Steer Loaders	1	8.00	111	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Rough Grading	Excavators	0	8.00	158	0.38
Rough Grading	Graders	0	8.00	187	0.41
Rough Grading	Rollers	1	8.00	121	0.38
Rough Grading	Rubber Tired Dozers	1	8.00	135	0.40
Rough Grading	Rubber Tired Dozers	1	8.00	217	0.40
Rough Grading	Skid Steer Loaders	1	8.00	111	0.37

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Rough Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Utility Trenching	Excavators	1	8.00	271	0.38
Utility Trenching	Rollers	1	8.00	121	0.38
Utility Trenching	Rubber Tired Loaders	1	8.00	193	0.36
Utility Trenching	Skid Steer Loaders	1	8.00	111	0.37
Fine Grading	Excavators	0	8.00	158	0.38
Fine Grading	Graders	1	8.00	255	0.41
Fine Grading	Rollers	1	8.00	121	0.38
Fine Grading	Rubber Tired Dozers	1	8.00	135	0.40
Fine Grading	Skid Steer Loaders	1	8.00	111	0.37
Fine Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction and Finishing/Landscaping	Cranes	0	7.00	231	0.29
Building Construction and Finishing/Landscaping	Excavators	2	8.00	271	0.38
Building Construction and Finishing/Landscaping	Forklifts	0	8.00	89	0.20
Building Construction and Finishing/Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction and Finishing/Landscaping	Pavers	1	8.00	225	0.42
Building Construction and Finishing/Landscaping	Rollers	1	8.00	121	0.38
Building Construction and Finishing/Landscaping	Rollers	1	8.00	49	0.38
Building Construction and Finishing/Landscaping	Rubber Tired Dozers	1	8.00	135	0.40
Building Construction and Finishing/Landscaping	Rubber Tired Dozers	1	8.00	217	0.40
Building Construction and Finishing/Landscaping	Skid Steer Loaders	2	8.00	111	0.37
Building Construction and Finishing/Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction and Finishing/Landscaping	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Excavators	1	8.00	271	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74

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Building Construction	Rollers	1	8.00	121	0.38
Building Construction	Rubber Tired Dozers	1	8.00	135	0.40
Building Construction	Rubber Tired Dozers	1	8.00	217	0.40
Building Construction	Skid Steer Loaders	1	8.00	111	0.37
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Asphalt Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Asphalt Paving	Pavers	1	8.00	225	0.42
Asphalt Paving	Paving Equipment	0	6.00	132	0.36
Asphalt Paving	Rollers	1	8.00	49	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Asphalt Demolition Debris Haul	Crushing/Proc. Equipment	1	8.00	85	0.78
Asphalt Demolition Debris Haul	Rollers	1	8.00	121	0.38
Asphalt Demolition Debris Haul	Skid Steer Loaders	1	8.00	111	0.37

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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
Asphalt Demolition	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition Debris Haul	5	13.00	0.00	250.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction and Finishing/Landscaping	9	77.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	77.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	2	5.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Asphalt Demolition - 2022

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	0.0144	0.1067	0.0929	2.7000e-004		4.6800e-003	4.6800e-003		4.4700e-003	4.4700e-003	0.0000	25.1943	25.1943	4.0000e-003	0.0000	25.2943
Total	**0.0144**	**0.1067**	**0.0929**	**2.7000e-004**		**4.6800e-003**	**4.6800e-003**		**4.4700e-003**	**4.4700e-003**	**0.0000**	**25.1943**	**25.1943**	**4.0000e-003**	**0.0000**	**25.2943**

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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	4.6000e-004	1.6000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1816	0.1816	0.0000	3.0000e-005	0.1897
Worker	2.8000e-004	2.2000e-004	2.6600e-003	1.0000e-005	8.2000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6554	0.6554	2.0000e-005	2.0000e-005	0.6615
Total	**3.0000e-004**	**6.8000e-004**	**2.8200e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**0.8370**	**0.8370**	**2.0000e-005**	**5.0000e-005**	**0.8512**

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	0.0144	0.1067	0.0929	2.7000e-004		4.6800e-003	4.6800e-003		4.4700e-003	4.4700e-003	0.0000	25.1943	25.1943	4.0000e-003	0.0000	25.2943
Total	**0.0144**	**0.1067**	**0.0929**	**2.7000e-004**		**4.6800e-003**	**4.6800e-003**		**4.4700e-003**	**4.4700e-003**	**0.0000**	**25.1943**	**25.1943**	**4.0000e-003**	**0.0000**	**25.2943**

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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	4.6000e-004	1.6000e-004	0.0000	6.0000e-005	1.0000e-005	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1816	0.1816	0.0000	3.0000e-005	0.1897
Worker	2.8000e-004	2.2000e-004	2.6600e-003	1.0000e-005	7.6000e-004	0.0000	7.6000e-004	2.0000e-004	0.0000	2.1000e-004	0.0000	0.6554	0.6554	2.0000e-005	2.0000e-005	0.6615
Total	**3.0000e-004**	**6.8000e-004**	**2.8200e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.2000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.8370**	**0.8370**	**2.0000e-005**	**5.0000e-005**	**0.8512**

3.3 Asphalt Demolition Debris Haul - 2022

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					0.0268	0.0000	0.0268	4.0500e-003	0.0000	4.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6700e-003	0.0680	0.0726	1.4000e-004		3.3800e-003	3.3800e-003		3.1800e-003	3.1800e-003	0.0000	12.1912	12.1912	3.1600e-003	0.0000	12.2703
Total	**7.6700e-003**	**0.0680**	**0.0726**	**1.4000e-004**	**0.0268**	**3.3800e-003**	**0.0301**	**4.0500e-003**	**3.1800e-003**	**7.2300e-003**	**0.0000**	**12.1912**	**12.1912**	**3.1600e-003**	**0.0000**	**12.2703**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	4.6000e-004	0.0180	4.4900e-003	7.0000e-005	2.1500e-003	1.8000e-004	2.3300e-003	5.9000e-004	1.7000e-004	7.6000e-004	0.0000	7.2650	7.2650	3.1000e-004	1.1500e-003	7.6159
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	2.4000e-004	1.9000e-004	2.3000e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5680	0.5680	2.0000e-005	2.0000e-005	0.5733
Total	**7.0000e-004**	**0.0182**	**6.7900e-003**	**8.0000e-005**	**2.8600e-003**	**1.8000e-004**	**3.0500e-003**	**7.8000e-004**	**1.7000e-004**	**9.5000e-004**	**0.0000**	**7.8331**	**7.8331**	**3.3000e-004**	**1.1700e-003**	**8.1892**

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					0.0114	0.0000	0.0114	1.7300e-003	0.0000	1.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6700e-003	0.0680	0.0726	1.4000e-004		3.3800e-003	3.3800e-003		3.1800e-003	3.1800e-003	0.0000	12.1912	12.1912	3.1600e-003	0.0000	12.2703
Total	**7.6700e-003**	**0.0680**	**0.0726**	**1.4000e-004**	**0.0114**	**3.3800e-003**	**0.0148**	**1.7300e-003**	**3.1800e-003**	**4.9100e-003**	**0.0000**	**12.1912**	**12.1912**	**3.1600e-003**	**0.0000**	**12.2703**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	4.6000e-004	0.0180	4.4900e-003	7.0000e-005	2.0100e-003	1.8000e-004	2.1900e-003	5.6000e-004	1.7000e-004	7.3000e-004	0.0000	7.2650	7.2650	3.1000e-004	1.1500e-003	7.6159
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	2.4000e-004	1.9000e-004	2.3000e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5680	0.5680	2.0000e-005	2.0000e-005	0.5733
Total	**7.0000e-004**	**0.0182**	**6.7900e-003**	**8.0000e-005**	**2.6700e-003**	**1.8000e-004**	**2.8500e-003**	**7.4000e-004**	**1.7000e-004**	**9.1000e-004**	**0.0000**	**7.8331**	**7.8331**	**3.3000e-004**	**1.1700e-003**	**8.1892**

3.4 Site Preparation - 2022

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					0.0491	0.0000	0.0491	0.0253	0.0000	0.0253	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0200e-003	0.0616	0.0412	8.0000e-005		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	6.6452	6.6452	2.1500e-003	0.0000	6.6990
Total	**6.0200e-003**	**0.0616**	**0.0412**	**8.0000e-005**	**0.0491**	**3.0200e-003**	**0.0522**	**0.0253**	**2.7800e-003**	**0.0280**	**0.0000**	**6.6452**	**6.6452**	**2.1500e-003**	**0.0000**	**6.6990**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-005	2.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0908	0.0908	0.0000	1.0000e-005	0.0949
Worker	1.4000e-004	1.1000e-004	1.3300e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3277	0.3277	1.0000e-005	1.0000e-005	0.3308
Total	**1.5000e-004**	**3.4000e-004**	**1.4100e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4185**	**0.4185**	**1.0000e-005**	**2.0000e-005**	**0.4256**

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					0.0210	0.0000	0.0210	0.0108	0.0000	0.0108	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0200e-003	0.0616	0.0412	8.0000e-005		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	6.6452	6.6452	2.1500e-003	0.0000	6.6990
Total	**6.0200e-003**	**0.0616**	**0.0412**	**8.0000e-005**	**0.0210**	**3.0200e-003**	**0.0240**	**0.0108**	**2.7800e-003**	**0.0136**	**0.0000**	**6.6452**	**6.6452**	**2.1500e-003**	**0.0000**	**6.6990**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-005	2.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0908	0.0908	0.0000	1.0000e-005	0.0949
Worker	1.4000e-004	1.1000e-004	1.3300e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3277	0.3277	1.0000e-005	1.0000e-005	0.3308
Total	**1.5000e-004**	**3.4000e-004**	**1.4100e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4185**	**0.4185**	**1.0000e-005**	**2.0000e-005**	**0.4256**

3.5 Rough Grading - 2022

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					0.0164	0.0000	0.0164	8.4200e-003	0.0000	8.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-003	0.0406	0.0286	5.0000e-005		2.0000e-003	2.0000e-003		1.8400e-003	1.8400e-003	0.0000	4.3156	4.3156	1.4000e-003	0.0000	4.3505
Total	**3.9000e-003**	**0.0406**	**0.0286**	**5.0000e-005**	**0.0164**	**2.0000e-003**	**0.0184**	**8.4200e-003**	**1.8400e-003**	**0.0103**	**0.0000**	**4.3156**	**4.3156**	**1.4000e-003**	**0.0000**	**4.3505**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-005	2.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0908	0.0908	0.0000	1.0000e-005	0.0949
Worker	9.0000e-005	7.0000e-005	8.9000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2185	0.2185	1.0000e-005	1.0000e-005	0.2205
Total	**1.0000e-004**	**3.0000e-004**	**9.7000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3093**	**0.3093**	**1.0000e-005**	**2.0000e-005**	**0.3154**

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					7.0000e-003	0.0000	7.0000e-003	3.6000e-003	0.0000	3.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-003	0.0406	0.0286	5.0000e-005		2.0000e-003	2.0000e-003		1.8400e-003	1.8400e-003	0.0000	4.3156	4.3156	1.4000e-003	0.0000	4.3505
Total	**3.9000e-003**	**0.0406**	**0.0286**	**5.0000e-005**	**7.0000e-003**	**2.0000e-003**	**9.0000e-003**	**3.6000e-003**	**1.8400e-003**	**5.4400e-003**	**0.0000**	**4.3156**	**4.3156**	**1.4000e-003**	**0.0000**	**4.3505**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-005	2.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0908	0.0908	0.0000	1.0000e-005	0.0949
Worker	9.0000e-005	7.0000e-005	8.9000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2185	0.2185	1.0000e-005	1.0000e-005	0.2205
Total	**1.0000e-004**	**3.0000e-004**	**9.7000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3093**	**0.3093**	**1.0000e-005**	**2.0000e-005**	**0.3154**

3.6 Utility Trenching - 2022

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	3.8100e-003	0.0387	0.0406	1.1000e-004		1.4100e-003	1.4100e-003		1.3000e-003	1.3000e-003	0.0000	9.7698	9.7698	3.1600e-003	0.0000	9.8488
Total	**3.8100e-003**	**0.0387**	**0.0406**	**1.1000e-004**		**1.4100e-003**	**1.4100e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**9.7698**	**9.7698**	**3.1600e-003**	**0.0000**	**9.8488**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.9000e-004	1.5000e-004	1.7700e-003	0.0000	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4369	0.4369	1.0000e-005	1.0000e-005	0.4410
Total	**1.9000e-004**	**1.5000e-004**	**1.7700e-003**	**0.0000**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4369**	**0.4369**	**1.0000e-005**	**1.0000e-005**	**0.4410**

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	3.8100e-003	0.0387	0.0406	1.1000e-004		1.4100e-003	1.4100e-003		1.3000e-003	1.3000e-003	0.0000	9.7698	9.7698	3.1600e-003	0.0000	9.8488
Total	**3.8100e-003**	**0.0387**	**0.0406**	**1.1000e-004**		**1.4100e-003**	**1.4100e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**9.7698**	**9.7698**	**3.1600e-003**	**0.0000**	**9.8488**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.9000e-004	1.5000e-004	1.7700e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4369	0.4369	1.0000e-005	1.0000e-005	0.4410
Total	**1.9000e-004**	**1.5000e-004**	**1.7700e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4369**	**0.4369**	**1.0000e-005**	**1.0000e-005**	**0.4410**

3.7 Fine Grading - 2022

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					0.0177	0.0000	0.0177	8.5600e-003	0.0000	8.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4900e-003	0.0342	0.0272	5.0000e-005		1.5800e-003	1.5800e-003		1.4600e-003	1.4600e-003	0.0000	4.6414	4.6414	1.5000e-003	0.0000	4.6789
Total	**3.4900e-003**	**0.0342**	**0.0272**	**5.0000e-005**	**0.0177**	**1.5800e-003**	**0.0193**	**8.5600e-003**	**1.4600e-003**	**0.0100**	**0.0000**	**4.6414**	**4.6414**	**1.5000e-003**	**0.0000**	**4.6789**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-005	2.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0908	0.0908	0.0000	1.0000e-005	0.0949
Worker	9.0000e-005	7.0000e-005	8.9000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2185	0.2185	1.0000e-005	1.0000e-005	0.2205
Total	**1.0000e-004**	**3.0000e-004**	**9.7000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3093**	**0.3093**	**1.0000e-005**	**2.0000e-005**	**0.3154**

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					7.5700e-003	0.0000	7.5700e-003	3.6600e-003	0.0000	3.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4900e-003	0.0342	0.0272	5.0000e-005		1.5800e-003	1.5800e-003		1.4600e-003	1.4600e-003	0.0000	4.6414	4.6414	1.5000e-003	0.0000	4.6789
Total	**3.4900e-003**	**0.0342**	**0.0272**	**5.0000e-005**	**7.5700e-003**	**1.5800e-003**	**9.1500e-003**	**3.6600e-003**	**1.4600e-003**	**5.1200e-003**	**0.0000**	**4.6414**	**4.6414**	**1.5000e-003**	**0.0000**	**4.6789**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-005	2.3000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0908	0.0908	0.0000	1.0000e-005	0.0949
Worker	9.0000e-005	7.0000e-005	8.9000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2185	0.2185	1.0000e-005	1.0000e-005	0.2205
Total	**1.0000e-004**	**3.0000e-004**	**9.7000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3093**	**0.3093**	**1.0000e-005**	**2.0000e-005**	**0.3154**

3.8 Building Construction and Finishing/Landscaping - 2022

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	3.9300e-003	0.0392	0.0312	8.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	6.6831	6.6831	2.1600e-003	0.0000	6.7371
Total	**3.9300e-003**	**0.0392**	**0.0312**	**8.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**6.6831**	**6.6831**	**2.1600e-003**	**0.0000**	**6.7371**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-004	2.7600e-003	9.8000e-004	1.0000e-005	3.8000e-004	3.0000e-005	4.1000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.0895	1.0895	3.0000e-005	1.6000e-004	1.1383
Worker	4.4000e-004	3.4000e-004	4.0900e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0093	1.0093	3.0000e-005	3.0000e-005	1.0188
Total	**5.4000e-004**	**3.1000e-003**	**5.0700e-003**	**2.0000e-005**	**1.6500e-003**	**4.0000e-005**	**1.6800e-003**	**4.5000e-004**	**4.0000e-005**	**4.8000e-004**	**0.0000**	**2.0988**	**2.0988**	**6.0000e-005**	**1.9000e-004**	**2.1571**

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	3.9300e-003	0.0392	0.0312	8.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	6.6831	6.6831	2.1600e-003	0.0000	6.7371
Total	**3.9300e-003**	**0.0392**	**0.0312**	**8.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**6.6831**	**6.6831**	**2.1600e-003**	**0.0000**	**6.7371**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.0000e-004	2.7600e-003	9.8000e-004	1.0000e-005	3.5000e-004	3.0000e-005	3.9000e-004	1.0000e-004	3.0000e-005	1.3000e-004	0.0000	1.0895	1.0895	3.0000e-005	1.6000e-004	1.1383
Worker	4.4000e-004	3.4000e-004	4.0900e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1700e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0093	1.0093	3.0000e-005	3.0000e-005	1.0188
Total	**5.4000e-004**	**3.1000e-003**	**5.0700e-003**	**2.0000e-005**	**1.5200e-003**	**4.0000e-005**	**1.5600e-003**	**4.1000e-004**	**4.0000e-005**	**4.5000e-004**	**0.0000**	**2.0988**	**2.0988**	**6.0000e-005**	**1.9000e-004**	**2.1571**

3.9 Building Construction - 2022

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	0.0923	0.9333	0.6890	1.4700e-003		0.0445	0.0445		0.0409	0.0409	0.0000	128.7596	128.7596	0.0416	0.0000	129.8007
Total	**0.0923**	**0.9333**	**0.6890**	**1.4700e-003**		**0.0445**	**0.0445**		**0.0409**	**0.0409**	**0.0000**	**128.7596**	**128.7596**	**0.0416**	**0.0000**	**129.8007**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	2.6300e-003	0.0712	0.0252	2.9000e-004	9.7400e-003	8.1000e-004	0.0106	2.8100e-003	7.7000e-004	3.5800e-003	0.0000	28.0547	28.0547	7.6000e-004	4.1500e-003	29.3117
Worker	0.0149	0.0117	0.1405	3.8000e-004	0.0435	2.3000e-004	0.0437	0.0116	2.1000e-004	0.0118	0.0000	34.6535	34.6535	9.9000e-004	1.0000e-003	34.9770
Total	**0.0176**	**0.0829**	**0.1658**	**6.7000e-004**	**0.0532**	**1.0400e-003**	**0.0543**	**0.0144**	**9.8000e-004**	**0.0153**	**0.0000**	**62.7082**	**62.7082**	**1.7500e-003**	**5.1500e-003**	**64.2888**

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	0.0923	0.9333	0.6890	1.4700e-003		0.0445	0.0445		0.0409	0.0409	0.0000	128.7595	128.7595	0.0416	0.0000	129.8006
Total	**0.0923**	**0.9333**	**0.6890**	**1.4700e-003**		**0.0445**	**0.0445**		**0.0409**	**0.0409**	**0.0000**	**128.7595**	**128.7595**	**0.0416**	**0.0000**	**129.8006**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	2.6300e-003	0.0712	0.0252	2.9000e-004	9.1200e-003	8.1000e-004	9.9300e-003	2.6600e-003	7.7000e-004	3.4300e-003	0.0000	28.0547	28.0547	7.6000e-004	4.1500e-003	29.3117
Worker	0.0149	0.0117	0.1405	3.8000e-004	0.0401	2.3000e-004	0.0403	0.0107	2.1000e-004	0.0109	0.0000	34.6535	34.6535	9.9000e-004	1.0000e-003	34.9770
Total	**0.0176**	**0.0829**	**0.1658**	**6.7000e-004**	**0.0492**	**1.0400e-003**	**0.0503**	**0.0134**	**9.8000e-004**	**0.0144**	**0.0000**	**62.7082**	**62.7082**	**1.7500e-003**	**5.1500e-003**	**64.2888**

3.10 Asphalt Paving - 2022

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	7.1000e-004	6.7800e-003	4.7000e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.4000e-004	2.4000e-004	0.0000	1.3063	1.3063	4.2000e-004	0.0000	1.3168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1000e-004**	**6.7800e-003**	**4.7000e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.3063**	**1.3063**	**4.2000e-004**	**0.0000**	**1.3168**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	4.0000e-005	9.7000e-004	3.4000e-004	0.0000	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.3813	0.3813	1.0000e-005	6.0000e-005	0.3984
Worker	3.0000e-005	2.0000e-005	2.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0655	0.0655	0.0000	0.0000	0.0662
Total	**7.0000e-005**	**9.9000e-004**	**6.1000e-004**	**0.0000**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**6.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**0.4469**	**0.4469**	**1.0000e-005**	**6.0000e-005**	**0.4646**

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	7.1000e-004	6.7800e-003	4.7000e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.4000e-004	2.4000e-004	0.0000	1.3063	1.3063	4.2000e-004	0.0000	1.3168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1000e-004**	**6.7800e-003**	**4.7000e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.3063**	**1.3063**	**4.2000e-004**	**0.0000**	**1.3168**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	4.0000e-005	9.7000e-004	3.4000e-004	0.0000	1.2000e-004	1.0000e-005	1.3000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.3813	0.3813	1.0000e-005	6.0000e-005	0.3984
Worker	3.0000e-005	2.0000e-005	2.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0655	0.0655	0.0000	0.0000	0.0662
Total	**7.0000e-005**	**9.9000e-004**	**6.1000e-004**	**0.0000**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**6.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**0.4469**	**0.4469**	**1.0000e-005**	**6.0000e-005**	**0.4646**

3.11 Architectural Coating - 2022

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					
Archit. Coating	0.0291					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1500e-003	0.0148	0.0190	3.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	2.6809	2.6809	1.7000e-004	0.0000	2.6853
Total	**0.0313**	**0.0148**	**0.0190**	**3.0000e-005**		**8.6000e-004**	**8.6000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.6809**	**2.6809**	**1.7000e-004**	**0.0000**	**2.6853**

Unmitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	5.9000e-004	4.7000e-004	5.5800e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3764	1.3764	4.0000e-005	4.0000e-005	1.3892
Total	**5.9000e-004**	**4.7000e-004**	**5.5800e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7400e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.3764**	**1.3764**	**4.0000e-005**	**4.0000e-005**	**1.3892**

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					
Archit. Coating	0.0291					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1500e-003	0.0148	0.0190	3.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	2.6809	2.6809	1.7000e-004	0.0000	2.6853
Total	**0.0313**	**0.0148**	**0.0190**	**3.0000e-005**		**8.6000e-004**	**8.6000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.6809**	**2.6809**	**1.7000e-004**	**0.0000**	**2.6853**

Mitigated Construction Off-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	5.9000e-004	4.7000e-004	5.5800e-003	2.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.3000e-004	1.0000e-005	4.3000e-004	0.0000	1.3764	1.3764	4.0000e-005	4.0000e-005	1.3892
Total	**5.9000e-004**	**4.7000e-004**	**5.5800e-003**	**2.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.3000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3764**	**1.3764**	**4.0000e-005**	**4.0000e-005**	**1.3892**

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Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Redlands East Valley HS Field

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	5.42	1000sqft	0.00	5,417.00	0
Other Non-Asphalt Surfaces	177.06	1000sqft	4.06	177,063.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	509.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on 2020 Sustainability Report.

Land Use - Based on applicant info. (see assumptions file).

Construction Phase - Compiled "worst-case" scenario of the Proposed Phases 1-3 for year 2022 to model highest peak daily emissions (see assumptions file).

Off-road Equipment -

Off-road Equipment - Based on equipment mix provided by District, used deafult HP for Terex Jaw Plant Crusher as worst-case scenario

Off-road Equipment - Equipment provided by applicant, see assumptions file

Off-road Equipment - Based on equipment mix provided by District (see assumptions file)

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Trips and VMT - Assume 2 vt/day/water truck, accounted for dump trucks based on applicant's equipment mix, see assumptions file

Demolition -

Grading -

Architectural Coating - Based on applicant info. (see assumptions file), existing parking lot will remain and be re-striped.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403 and SCAQMD Rule 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	10,624.00	1,728.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	21.00
tblConstructionPhase	NumDays	230.00	3.00
tblConstructionPhase	NumDays	230.00	103.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	8.00	5.00
tblConstructionPhase	NumDays	8.00	5.00
tblConstructionPhase	NumDays	18.00	3.00
tblLandUse	LandUseSquareFeet	5,420.00	5,417.00
tblLandUse	LandUseSquareFeet	177,060.00	177,063.00
tblLandUse	LotAcreage	0.12	0.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	187.00	255.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	130.00	225.00
tblOffRoadEquipment	HorsePower	80.00	49.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	85.00	336.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	130.00	225.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	49.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	203.00	193.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	203.00	193.00
tblOffRoadEquipment	HorsePower	203.00	193.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	509.98
tblTripsAndVMT	HaulingTripNumber	247.00	250.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	30.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	5.2108	28.0760	24.6191	0.0661	19.8375	1.2096	21.0471	10.1506	1.1128	11.2634	0.0000	6,514.4878	6,514.4878	1.6310	0.2571	6,596.5484
Maximum	**5.2108**	**28.0760**	**24.6191**	**0.0661**	**19.8375**	**1.2096**	**21.0471**	**10.1506**	**1.1128**	**11.2634**	**0.0000**	**6,514.4878**	**6,514.4878**	**1.6310**	**0.2571**	**6,596.5484**

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					
2022	5.2108	28.0760	24.6191	0.0661	8.5699	1.2096	9.7795	4.3635	1.1128	5.4764	0.0000	6,514.4878	6,514.4878	1.6310	0.2571	6,596.5484
Maximum	**5.2108**	**28.0760**	**24.6191**	**0.0661**	**8.5699**	**1.2096**	**9.7795**	**4.3635**	**1.1128**	**5.4764**	**0.0000**	**6,514.4878**	**6,514.4878**	**1.6310**	**0.2571**	**6,596.5484**

	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**	**56.80**	**0.00**	**53.54**	**57.01**	**0.00**	**51.38**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt Demolition	Demolition	3/5/2022	3/19/2022	5	10	a
2	Asphalt Demolition Debris Haul	Demolition	3/20/2022	4/2/2022	5	10	b
3	Site Preparation	Site Preparation	4/3/2022	4/9/2022	5	5	c
4	Rough Grading	Grading	4/10/2022	4/16/2022	5	5	d
5	Utility Trenching	Trenching	5/5/2022	5/18/2022	5	10	e
6	Fine Grading	Grading	5/28/2022	6/5/2022	5	5	f
7	Building Construction and Finishing/Landscaping	Building Construction	6/8/2022	6/12/2022	5	3	g
8	Building Construction	Building Construction	6/13/2022	11/2/2022	5	103	h
9	Asphalt Paving	Paving	6/15/2022	6/19/2022	5	3	i
10	Architectural Coating	Architectural Coating	10/5/2022	11/2/2022	5	21	j

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 2.5

Acres of Paving: 4.06

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,126; Non-Residential Outdoor: 2,709; Striped Parking Area: 1,728 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition	Crushing/Proc. Equipment	1	8.00	336	0.78
Asphalt Demolition	Crushing/Proc. Equipment	1	8.00	85	0.78
Asphalt Demolition	Excavators	0	8.00	158	0.38
Asphalt Demolition	Excavators	1	8.00	271	0.38

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Asphalt Demolition	Rollers	1	8.00	121	0.38
Asphalt Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Asphalt Demolition	Rubber Tired Dozers	1	8.00	135	0.40
Asphalt Demolition	Rubber Tired Loaders	1	8.00	193	0.36
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition Debris Haul	Excavators	1	8.00	271	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	1	8.00	135	0.40
Site Preparation	Aerial Lifts			63	0.31
Site Preparation	Rollers	1	8.00	121	0.38
Site Preparation	Rubber Tired Dozers	2	8.00	135	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	217	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	193	0.36
Site Preparation	Skid Steer Loaders	1	8.00	111	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Rough Grading	Excavators	0	8.00	158	0.38
Rough Grading	Graders	0	8.00	187	0.41
Rough Grading	Rollers	1	8.00	121	0.38
Rough Grading	Rubber Tired Dozers	1	8.00	135	0.40
Rough Grading	Rubber Tired Dozers	1	8.00	217	0.40
Rough Grading	Skid Steer Loaders	1	8.00	111	0.37
Rough Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Utility Trenching	Excavators	1	8.00	271	0.38
Utility Trenching	Rollers	1	8.00	121	0.38
Utility Trenching	Rubber Tired Loaders	1	8.00	193	0.36
Utility Trenching	Skid Steer Loaders	1	8.00	111	0.37
Fine Grading	Excavators	0	8.00	158	0.38
Fine Grading	Graders	1	8.00	255	0.41

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fine Grading	Rollers	1	8.00	121	0.38
Fine Grading	Rubber Tired Dozers	1	8.00	135	0.40
Fine Grading	Skid Steer Loaders	1	8.00	111	0.37
Fine Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction and Finishing/Landscaping	Cranes	0	7.00	231	0.29
Building Construction and Finishing/Landscaping	Excavators	2	8.00	271	0.38
Building Construction and Finishing/Landscaping	Forklifts	0	8.00	89	0.20
Building Construction and Finishing/Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction and Finishing/Landscaping	Pavers	1	8.00	225	0.42
Building Construction and Finishing/Landscaping	Rollers	1	8.00	121	0.38
Building Construction and Finishing/Landscaping	Rollers	1	8.00	49	0.38
Building Construction and Finishing/Landscaping	Rubber Tired Dozers	1	8.00	135	0.40
Building Construction and Finishing/Landscaping	Rubber Tired Dozers	1	8.00	217	0.40
Building Construction and Finishing/Landscaping	Skid Steer Loaders	2	8.00	111	0.37
Building Construction and Finishing/Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction and Finishing/Landscaping	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Excavators	1	8.00	271	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rollers	1	8.00	121	0.38
Building Construction	Rubber Tired Dozers	1	8.00	135	0.40
Building Construction	Rubber Tired Dozers	1	8.00	217	0.40
Building Construction	Skid Steer Loaders	1	8.00	111	0.37
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Asphalt Paving	Cement and Mortar Mixers	0	6.00	9	0.56

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Asphalt Paving	Pavers	1	8.00	225	0.42
Asphalt Paving	Paving Equipment	0	6.00	132	0.36
Asphalt Paving	Rollers	1	8.00	49	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Asphalt Demolition Debris Haul	Crushing/Proc. Equipment	1	8.00	85	0.78
Asphalt Demolition Debris Haul	Rollers	1	8.00	121	0.38
Asphalt Demolition Debris Haul	Skid Steer Loaders	1	8.00	111	0.37

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
Asphalt Demolition	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition Debris Haul	5	13.00	0.00	250.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction and	9	77.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	77.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	2	5.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Clean Paved Roads

3.2 Asphalt Demolition - 2022

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	2.8724	21.3314	18.5824	0.0535		0.9365	0.9365		0.8938	0.8938		5,554.3995	5,554.3995	0.8815		5,576.4366
Total	**2.8724**	**21.3314**	**18.5824**	**0.0535**		**0.9365**	**0.9365**		**0.8938**	**0.8938**		**5,554.3995**	**5,554.3995**	**0.8815**		**5,576.4366**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0128	1.0400e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0635	0.0402	0.6171	1.5500e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		156.4227	156.4227	4.0900e-003	3.9200e-003	157.6925
Total	**0.0670**	**0.1278**	**0.6492**	**1.9200e-003**	**0.1805**	**1.9200e-003**	**0.1824**	**0.0482**	**1.8100e-003**	**0.0500**		**196.4365**	**196.4365**	**5.1700e-003**	**9.8400e-003**	**199.4979**

Mitigated Construction On-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	2.8724	21.3314	18.5824	0.0535		0.9365	0.9365		0.8938	0.8938	0.0000	5,554.3995	5,554.3995	0.8815		5,576.4366
Total	**2.8724**	**21.3314**	**18.5824**	**0.0535**		**0.9365**	**0.9365**		**0.8938**	**0.8938**	**0.0000**	**5,554.3995**	**5,554.3995**	**0.8815**		**5,576.4366**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0120	1.0400e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0635	0.0402	0.6171	1.5500e-003	0.1546	8.8000e-004	0.1554	0.0413	8.1000e-004	0.0421		156.4227	156.4227	4.0900e-003	3.9200e-003	157.6925
Total	**0.0670**	**0.1278**	**0.6492**	**1.9200e-003**	**0.1665**	**1.9200e-003**	**0.1685**	**0.0447**	**1.8100e-003**	**0.0465**		**196.4365**	**196.4365**	**5.1700e-003**	**9.8400e-003**	**199.4979**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Asphalt Demolition Debris Haul - 2022

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					5.3498	0.0000	5.3498	0.8100	0.0000	0.8100			0.0000			0.0000
Off-Road	1.5334	13.5969	14.5241	0.0279		0.6761	0.6761		0.6364	0.6364		2,687.7073	2,687.7073	0.6976		2,705.1473
Total	**1.5334**	**13.5969**	**14.5241**	**0.0279**	**5.3498**	**0.6761**	**6.0258**	**0.8100**	**0.6364**	**1.4464**		**2,687.7073**	**2,687.7073**	**0.6976**		**2,705.1473**

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	0.0945	3.4073	0.8890	0.0147	0.4378	0.0358	0.4736	0.1201	0.0342	0.1543		1,601.1627	1,601.1627	0.0686	0.2537	1,678.4891
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
Worker	0.0550	0.0349	0.5348	1.3400e-003	0.1453	7.6000e-004	0.1461	0.0385	7.0000e-004	0.0392		135.5663	135.5663	3.5500e-003	3.4000e-003	136.6669
Total	**0.1496**	**3.4422**	**1.4238**	**0.0160**	**0.5831**	**0.0366**	**0.6197**	**0.1586**	**0.0349**	**0.1935**		**1,736.7290**	**1,736.7290**	**0.0721**	**0.2571**	**1,815.1560**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					2.2870	0.0000	2.2870	0.3463	0.0000	0.3463			0.0000			0.0000
Off-Road	1.5334	13.5969	14.5241	0.0279		0.6761	0.6761		0.6364	0.6364	0.0000	2,687.7073	2,687.7073	0.6976		2,705.1473
Total	**1.5334**	**13.5969**	**14.5241**	**0.0279**	**2.2870**	**0.6761**	**2.9631**	**0.3463**	**0.6364**	**0.9827**	**0.0000**	**2,687.7073**	**2,687.7073**	**0.6976**		**2,705.1473**

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	0.0945	3.4073	0.8890	0.0147	0.4081	0.0358	0.4439	0.1128	0.0342	0.1470		1,601.1627	1,601.1627	0.0686	0.2537	1,678.4891
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
Worker	0.0550	0.0349	0.5348	1.3400e-003	0.1339	7.6000e-004	0.1347	0.0358	7.0000e-004	0.0365		135.5663	135.5663	3.5500e-003	3.4000e-003	136.6669
Total	**0.1496**	**3.4422**	**1.4238**	**0.0160**	**0.5420**	**0.0366**	**0.5786**	**0.1485**	**0.0349**	**0.1834**		**1,736.7290**	**1,736.7290**	**0.0721**	**0.2571**	**1,815.1560**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.4079	24.6400	16.4809	0.0302		1.2076	1.2076		1.1110	1.1110		2,930.0511	2,930.0511	0.9476		2,953.7421
Total	**2.4079**	**24.6400**	**16.4809**	**0.0302**	**19.6570**	**1.2076**	**20.8647**	**10.1025**	**1.1110**	**11.2135**		**2,930.0511**	**2,930.0511**	**0.9476**		**2,953.7421**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0128	1.0400e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0635	0.0402	0.6171	1.5500e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		156.4227	156.4227	4.0900e-003	3.9200e-003	157.6925
Total	**0.0670**	**0.1278**	**0.6492**	**1.9200e-003**	**0.1805**	**1.9200e-003**	**0.1824**	**0.0482**	**1.8100e-003**	**0.0500**		**196.4365**	**196.4365**	**5.1700e-003**	**9.8400e-003**	**199.4979**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					8.4034	0.0000	8.4034	4.3188	0.0000	4.3188			0.0000			0.0000
Off-Road	2.4079	24.6400	16.4809	0.0302		1.2076	1.2076		1.1110	1.1110	0.0000	2,930.0511	2,930.0511	0.9476		2,953.7421
Total	**2.4079**	**24.6400**	**16.4809**	**0.0302**	**8.4034**	**1.2076**	**9.6110**	**4.3188**	**1.1110**	**5.4298**	**0.0000**	**2,930.0511**	**2,930.0511**	**0.9476**		**2,953.7421**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0120	1.0400e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0635	0.0402	0.6171	1.5500e-003	0.1546	8.8000e-004	0.1554	0.0413	8.1000e-004	0.0421		156.4227	156.4227	4.0900e-003	3.9200e-003	157.6925
Total	**0.0670**	**0.1278**	**0.6492**	**1.9200e-003**	**0.1665**	**1.9200e-003**	**0.1685**	**0.0447**	**1.8100e-003**	**0.0465**		**196.4365**	**196.4365**	**5.1700e-003**	**9.8400e-003**	**199.4979**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Rough Grading - 2022

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.5592	16.2327	11.4517	0.0196		0.8003	0.8003		0.7363	0.7363		1,902.8699	1,902.8699	0.6154		1,918.2556
Total	**1.5592**	**16.2327**	**11.4517**	**0.0196**	**6.5523**	**0.8003**	**7.3526**	**3.3675**	**0.7363**	**4.1038**		**1,902.8699**	**1,902.8699**	**0.6154**		**1,918.2556**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0128	1.0400e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0423	0.0268	0.4114	1.0300e-003	0.1118	5.9000e-004	0.1124	0.0296	5.4000e-004	0.0302		104.2818	104.2818	2.7300e-003	2.6100e-003	105.1284
Total	**0.0458**	**0.1144**	**0.4435**	**1.4000e-003**	**0.1246**	**1.6300e-003**	**0.1262**	**0.0333**	**1.5400e-003**	**0.0349**		**144.2956**	**144.2956**	**3.8100e-003**	**8.5300e-003**	**146.9337**

Mitigated Construction On-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	1.5592	16.2327	11.4517	0.0196		0.8003	0.8003		0.7363	0.7363	0.0000	1,902.8699	1,902.8699	0.6154		1,918.2556
Total	**1.5592**	**16.2327**	**11.4517**	**0.0196**	**2.8011**	**0.8003**	**3.6014**	**1.4396**	**0.7363**	**2.1759**	**0.0000**	**1,902.8699**	**1,902.8699**	**0.6154**		**1,918.2556**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0120	1.0400e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0423	0.0268	0.4114	1.0300e-003	0.1030	5.9000e-004	0.1036	0.0275	5.4000e-004	0.0280		104.2818	104.2818	2.7300e-003	2.6100e-003	105.1284
Total	**0.0458**	**0.1144**	**0.4435**	**1.4000e-003**	**0.1150**	**1.6300e-003**	**0.1167**	**0.0310**	**1.5400e-003**	**0.0325**		**144.2956**	**144.2956**	**3.8100e-003**	**8.5300e-003**	**146.9337**

3.6 Utility Trenching - 2022

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.7615	7.7405	8.1148	0.0223		0.2826	0.2826		0.2600	0.2600		2,153.8750	2,153.8750	0.6966		2,171.2901
Total	**0.7615**	**7.7405**	**8.1148**	**0.0223**		**0.2826**	**0.2826**		**0.2600**	**0.2600**		**2,153.8750**	**2,153.8750**	**0.6966**		**2,171.2901**

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	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
Worker	0.0423	0.0268	0.4114	1.0300e-003	0.1118	5.9000e-004	0.1124	0.0296	5.4000e-004	0.0302		104.2818	104.2818	2.7300e-003	2.6100e-003	105.1284
Total	**0.0423**	**0.0268**	**0.4114**	**1.0300e-003**	**0.1118**	**5.9000e-004**	**0.1124**	**0.0296**	**5.4000e-004**	**0.0302**		**104.2818**	**104.2818**	**2.7300e-003**	**2.6100e-003**	**105.1284**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.7615	7.7405	8.1148	0.0223		0.2826	0.2826		0.2600	0.2600	0.0000	2,153.8750	2,153.8750	0.6966		2,171.2901
Total	**0.7615**	**7.7405**	**8.1148**	**0.0223**		**0.2826**	**0.2826**		**0.2600**	**0.2600**	**0.0000**	**2,153.8750**	**2,153.8750**	**0.6966**		**2,171.2901**

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	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
Worker	0.0423	0.0268	0.4114	1.0300e-003	0.1030	5.9000e-004	0.1036	0.0275	5.4000e-004	0.0280		104.2818	104.2818	2.7300e-003	2.6100e-003	105.1284
Total	**0.0423**	**0.0268**	**0.4114**	**1.0300e-003**	**0.1030**	**5.9000e-004**	**0.1036**	**0.0275**	**5.4000e-004**	**0.0280**		**104.2818**	**104.2818**	**2.7300e-003**	**2.6100e-003**	**105.1284**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Fine Grading - 2022

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3973	13.6737	10.8673	0.0211		0.6332	0.6332		0.5825	0.5825		2,046.4937	2,046.4937	0.6619		2,063.0406
Total	**1.3973**	**13.6737**	**10.8673**	**0.0211**	**7.0826**	**0.6332**	**7.7157**	**3.4247**	**0.5825**	**4.0072**		**2,046.4937**	**2,046.4937**	**0.6619**		**2,063.0406**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0128	1.0400e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0423	0.0268	0.4114	1.0300e-003	0.1118	5.9000e-004	0.1124	0.0296	5.4000e-004	0.0302		104.2818	104.2818	2.7300e-003	2.6100e-003	105.1284
Total	**0.0458**	**0.1144**	**0.4435**	**1.4000e-003**	**0.1246**	**1.6300e-003**	**0.1262**	**0.0333**	**1.5400e-003**	**0.0349**		**144.2956**	**144.2956**	**3.8100e-003**	**8.5300e-003**	**146.9337**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					3.0278	0.0000	3.0278	1.4641	0.0000	1.4641			0.0000			0.0000
Off-Road	1.3973	13.6737	10.8673	0.0211		0.6332	0.6332		0.5825	0.5825	0.0000	2,046.4937	2,046.4937	0.6619		2,063.0406
Total	**1.3973**	**13.6737**	**10.8673**	**0.0211**	**3.0278**	**0.6332**	**3.6610**	**1.4641**	**0.5825**	**2.0466**	**0.0000**	**2,046.4937**	**2,046.4937**	**0.6619**		**2,063.0406**

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	0.0000
Vendor	3.4900e-003	0.0876	0.0321	3.7000e-004	0.0120	1.0400e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0138	40.0138	1.0800e-003	5.9200e-003	41.8054
Worker	0.0423	0.0268	0.4114	1.0300e-003	0.1030	5.9000e-004	0.1036	0.0275	5.4000e-004	0.0280		104.2818	104.2818	2.7300e-003	2.6100e-003	105.1284
Total	**0.0458**	**0.1144**	**0.4435**	**1.4000e-003**	**0.1150**	**1.6300e-003**	**0.1167**	**0.0310**	**1.5400e-003**	**0.0325**		**144.2956**	**144.2956**	**3.8100e-003**	**8.5300e-003**	**146.9337**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Building Construction and Finishing/Landscaping - 2022

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	2.6193	26.1179	20.8086	0.0507		1.1594	1.1594		1.0666	1.0666		4,911.2427	4,911.2427	1.5884		4,950.9526
Total	**2.6193**	**26.1179**	**20.8086**	**0.0507**		**1.1594**	**1.1594**		**1.0666**	**1.0666**		**4,911.2427**	**4,911.2427**	**1.5884**		**4,950.9526**

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	0.0000
Vendor	0.0697	1.7516	0.6428	7.4600e-003	0.2563	0.0208	0.2771	0.0738	0.0199	0.0937		800.2753	800.2753	0.0216	0.1184	836.1074
Worker	0.3260	0.2065	3.1677	7.9400e-003	0.8607	4.5100e-003	0.8652	0.2283	4.1500e-003	0.2324		802.9698	802.9698	0.0210	0.0201	809.4884
Total	**0.3957**	**1.9581**	**3.8105**	**0.0154**	**1.1170**	**0.0254**	**1.1423**	**0.3021**	**0.0241**	**0.3261**		**1,603.2451**	**1,603.2451**	**0.0426**	**0.1385**	**1,645.5958**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	2.6193	26.1179	20.8086	0.0507		1.1594	1.1594		1.0666	1.0666	0.0000	4,911.2427	4,911.2427	1.5884		4,950.9526
Total	**2.6193**	**26.1179**	**20.8086**	**0.0507**		**1.1594**	**1.1594**		**1.0666**	**1.0666**	**0.0000**	**4,911.2427**	**4,911.2427**	**1.5884**		**4,950.9526**

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	0.0000
Vendor	0.0697	1.7516	0.6428	7.4600e-003	0.2399	0.0208	0.2607	0.0698	0.0199	0.0897		800.2753	800.2753	0.0216	0.1184	836.1074
Worker	0.3260	0.2065	3.1677	7.9400e-003	0.7933	4.5100e-003	0.7979	0.2117	4.1500e-003	0.2159		802.9698	802.9698	0.0210	0.0201	809.4884
Total	**0.3957**	**1.9581**	**3.8105**	**0.0154**	**1.0332**	**0.0254**	**1.0585**	**0.2815**	**0.0241**	**0.3056**		**1,603.2451**	**1,603.2451**	**0.0426**	**0.1385**	**1,645.5958**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.9 Building Construction - 2022

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	1.7916	18.1214	13.3792	0.0285		0.8637	0.8637		0.7946	0.7946		2,755.9846	2,755.9846	0.8913		2,778.2682
Total	**1.7916**	**18.1214**	**13.3792**	**0.0285**		**0.8637**	**0.8637**		**0.7946**	**0.7946**		**2,755.9846**	**2,755.9846**	**0.8913**		**2,778.2682**

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	0.0000
Vendor	0.0523	1.3137	0.4821	5.6000e-003	0.1922	0.0156	0.2078	0.0554	0.0150	0.0703		600.2065	600.2065	0.0162	0.0888	627.0806
Worker	0.3260	0.2065	3.1677	7.9400e-003	0.8607	4.5100e-003	0.8652	0.2283	4.1500e-003	0.2324		802.9698	802.9698	0.0210	0.0201	809.4884
Total	**0.3783**	**1.5202**	**3.6498**	**0.0135**	**1.0529**	**0.0201**	**1.0730**	**0.2836**	**0.0191**	**0.3027**		**1,403.1763**	**1,403.1763**	**0.0372**	**0.1089**	**1,436.5689**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.7916	18.1214	13.3792	0.0285		0.8637	0.8637		0.7946	0.7946	0.0000	2,755.9846	2,755.9846	0.8913		2,778.2681
Total	**1.7916**	**18.1214**	**13.3792**	**0.0285**		**0.8637**	**0.8637**		**0.7946**	**0.7946**	**0.0000**	**2,755.9846**	**2,755.9846**	**0.8913**		**2,778.2681**

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	0.0000
Vendor	0.0523	1.3137	0.4821	5.6000e-003	0.1799	0.0156	0.1955	0.0523	0.0150	0.0673		600.2065	600.2065	0.0162	0.0888	627.0806
Worker	0.3260	0.2065	3.1677	7.9400e-003	0.7933	4.5100e-003	0.7979	0.2117	4.1500e-003	0.2159		802.9698	802.9698	0.0210	0.0201	809.4884
Total	**0.3783**	**1.5202**	**3.6498**	**0.0135**	**0.9732**	**0.0201**	**0.9934**	**0.2641**	**0.0191**	**0.2832**		**1,403.1763**	**1,403.1763**	**0.0372**	**0.1089**	**1,436.5689**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.10 Asphalt Paving - 2022

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	0.4765	4.5220	3.1330	9.9200e-003		0.1733	0.1733		0.1595	0.1595		959.9368	959.9368	0.3105		967.6984
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4765**	**4.5220**	**3.1330**	**9.9200e-003**		**0.1733**	**0.1733**		**0.1595**	**0.1595**		**959.9368**	**959.9368**	**0.3105**		**967.6984**

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	0.0000
Vendor	0.0244	0.6131	0.2250	2.6100e-003	0.0897	7.2900e-003	0.0970	0.0258	6.9800e-003	0.0328		280.0964	280.0964	7.5700e-003	0.0415	292.6376
Worker	0.0212	0.0134	0.2057	5.2000e-004	0.0559	2.9000e-004	0.0562	0.0148	2.7000e-004	0.0151		52.1409	52.1409	1.3600e-003	1.3100e-003	52.5642
Total	**0.0456**	**0.6265**	**0.4307**	**3.1300e-003**	**0.1456**	**7.5800e-003**	**0.1532**	**0.0407**	**7.2500e-003**	**0.0479**		**332.2373**	**332.2373**	**8.9300e-003**	**0.0428**	**345.2018**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.4765	4.5220	3.1330	9.9200e-003		0.1733	0.1733		0.1595	0.1595	0.0000	959.9368	959.9368	0.3105		967.6984
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4765**	**4.5220**	**3.1330**	**9.9200e-003**		**0.1733**	**0.1733**		**0.1595**	**0.1595**	**0.0000**	**959.9368**	**959.9368**	**0.3105**		**967.6984**

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	0.0000
Vendor	0.0244	0.6131	0.2250	2.6100e-003	0.0840	7.2900e-003	0.0912	0.0244	6.9800e-003	0.0314		280.0964	280.0964	7.5700e-003	0.0415	292.6376
Worker	0.0212	0.0134	0.2057	5.2000e-004	0.0515	2.9000e-004	0.0518	0.0138	2.7000e-004	0.0140		52.1409	52.1409	1.3600e-003	1.3100e-003	52.5642
Total	**0.0456**	**0.6265**	**0.4307**	**3.1300e-003**	**0.1355**	**7.5800e-003**	**0.1431**	**0.0382**	**7.2500e-003**	**0.0454**		**332.2373**	**332.2373**	**8.9300e-003**	**0.0428**	**345.2018**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.11 Architectural Coating - 2022

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					
Archit. Coating	2.7728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**2.9774**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	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
Worker	0.0635	0.0402	0.6171	1.5500e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		156.4227	156.4227	4.0900e-003	3.9200e-003	157.6925
Total	**0.0635**	**0.0402**	**0.6171**	**1.5500e-003**	**0.1677**	**8.8000e-004**	**0.1685**	**0.0445**	**8.1000e-004**	**0.0453**		**156.4227**	**156.4227**	**4.0900e-003**	**3.9200e-003**	**157.6925**

Redlands East Valley HS Field - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Archit. Coating	2.7728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**2.9774**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	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
Worker	0.0635	0.0402	0.6171	1.5500e-003	0.1546	8.8000e-004	0.1554	0.0413	8.1000e-004	0.0421		156.4227	156.4227	4.0900e-003	3.9200e-003	157.6925
Total	**0.0635**	**0.0402**	**0.6171**	**1.5500e-003**	**0.1546**	**8.8000e-004**	**0.1554**	**0.0413**	**8.1000e-004**	**0.0421**		**156.4227**	**156.4227**	**4.0900e-003**	**3.9200e-003**	**157.6925**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Redlands East Valley HS Field

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	5.42	1000sqft	0.00	5,417.00	0
Other Non-Asphalt Surfaces	177.06	1000sqft	4.06	177,063.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	509.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on 2020 Sustainability Report.

Land Use - Based on applicant info. (see assumptions file).

Construction Phase - Compiled "worst-case" scenario of the Proposed Phases 1-3 for year 2022 to model highest peak daily emissions (see assumptions file).

Off-road Equipment -

Off-road Equipment - Based on equipment mix provided by District, used deafult HP for Terex Jaw Plant Crusher as worst-case scenario

Off-road Equipment - Equipment provided by applicant, see assumptions file

Off-road Equipment - Based on equipment mix provided by District (see assumptions file)

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Off-road Equipment - Based on equipment mix provided by District

Trips and VMT - Assume 2 vt/day/water truck, accounted for dump trucks based on applicant's equipment mix, see assumptions file

Demolition -

Grading -

Architectural Coating - Based on applicant info. (see assumptions file), existing parking lot will remain and be re-striped.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403 and SCAQMD Rule 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	10,624.00	1,728.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	21.00
tblConstructionPhase	NumDays	230.00	3.00
tblConstructionPhase	NumDays	230.00	103.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	8.00	5.00
tblConstructionPhase	NumDays	8.00	5.00
tblConstructionPhase	NumDays	18.00	3.00
tblLandUse	LandUseSquareFeet	5,420.00	5,417.00
tblLandUse	LandUseSquareFeet	177,060.00	177,063.00
tblLandUse	LotAcreage	0.12	0.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	187.00	255.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	130.00	225.00
tblOffRoadEquipment	HorsePower	80.00	49.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	85.00	336.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	158.00	271.00
tblOffRoadEquipment	HorsePower	130.00	225.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	80.00	49.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	203.00	193.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	203.00	193.00
tblOffRoadEquipment	HorsePower	203.00	193.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	509.98
tblTripsAndVMT	HaulingTripNumber	247.00	250.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	30.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	5.1934	28.1739	24.0761	0.0654	19.8375	1.2096	21.0471	10.1506	1.1128	11.2634	0.0000	6,439.6490	6,439.6490	1.6309	0.2574	6,521.9606
Maximum	**5.1934**	**28.1739**	**24.0761**	**0.0654**	**19.8375**	**1.2096**	**21.0471**	**10.1506**	**1.1128**	**11.2634**	**0.0000**	**6,439.6490**	**6,439.6490**	**1.6309**	**0.2574**	**6,521.9606**

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					
2022	5.1934	28.1739	24.0761	0.0654	8.5699	1.2096	9.7795	4.3635	1.1128	5.4764	0.0000	6,439.6490	6,439.6490	1.6309	0.2574	6,521.9606
Maximum	**5.1934**	**28.1739**	**24.0761**	**0.0654**	**8.5699**	**1.2096**	**9.7795**	**4.3635**	**1.1128**	**5.4764**	**0.0000**	**6,439.6490**	**6,439.6490**	**1.6309**	**0.2574**	**6,521.9606**

	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**	**56.80**	**0.00**	**53.54**	**57.01**	**0.00**	**51.38**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt Demolition	Demolition	3/5/2022	3/19/2022	5	10	a
2	Asphalt Demolition Debris Haul	Demolition	3/20/2022	4/2/2022	5	10	b
3	Site Preparation	Site Preparation	4/3/2022	4/9/2022	5	5	c
4	Rough Grading	Grading	4/10/2022	4/16/2022	5	5	d
5	Utility Trenching	Trenching	5/5/2022	5/18/2022	5	10	e
6	Fine Grading	Grading	5/28/2022	6/5/2022	5	5	f
7	Building Construction and Finishing/Landscaping	Building Construction	6/8/2022	6/12/2022	5	3	g
8	Building Construction	Building Construction	6/13/2022	11/2/2022	5	103	h
9	Asphalt Paving	Paving	6/15/2022	6/19/2022	5	3	i
10	Architectural Coating	Architectural Coating	10/5/2022	11/2/2022	5	21	j

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 2.5

Acres of Paving: 4.06

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,126; Non-Residential Outdoor: 2,709; Striped Parking Area: 1,728 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition	Crushing/Proc. Equipment	1	8.00	336	0.78
Asphalt Demolition	Crushing/Proc. Equipment	1	8.00	85	0.78
Asphalt Demolition	Excavators	0	8.00	158	0.38
Asphalt Demolition	Excavators	1	8.00	271	0.38
Asphalt Demolition	Rollers	1	8.00	121	0.38

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Asphalt Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Asphalt Demolition	Rubber Tired Dozers	1	8.00	135	0.40
Asphalt Demolition	Rubber Tired Loaders	1	8.00	193	0.36
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition Debris Haul	Excavators	1	8.00	271	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	1	8.00	135	0.40
Site Preparation	Aerial Lifts			63	0.31
Site Preparation	Rollers	1	8.00	121	0.38
Site Preparation	Rubber Tired Dozers	2	8.00	135	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	217	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	193	0.36
Site Preparation	Skid Steer Loaders	1	8.00	111	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Rough Grading	Excavators	0	8.00	158	0.38
Rough Grading	Graders	0	8.00	187	0.41
Rough Grading	Rollers	1	8.00	121	0.38
Rough Grading	Rubber Tired Dozers	1	8.00	135	0.40
Rough Grading	Rubber Tired Dozers	1	8.00	217	0.40
Rough Grading	Skid Steer Loaders	1	8.00	111	0.37
Rough Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Utility Trenching	Excavators	1	8.00	271	0.38
Utility Trenching	Rollers	1	8.00	121	0.38
Utility Trenching	Rubber Tired Loaders	1	8.00	193	0.36
Utility Trenching	Skid Steer Loaders	1	8.00	111	0.37
Fine Grading	Excavators	0	8.00	158	0.38
Fine Grading	Graders	1	8.00	255	0.41
Fine Grading	Rollers	1	8.00	121	0.38

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fine Grading	Rubber Tired Dozers	1	8.00	135	0.40
Fine Grading	Skid Steer Loaders	1	8.00	111	0.37
Fine Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction and Finishing/Landscaping	Cranes	0	7.00	231	0.29
Building Construction and Finishing/Landscaping	Excavators	2	8.00	271	0.38
Building Construction and Finishing/Landscaping	Forklifts	0	8.00	89	0.20
Building Construction and Finishing/Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction and Finishing/Landscaping	Pavers	1	8.00	225	0.42
Building Construction and Finishing/Landscaping	Rollers	1	8.00	121	0.38
Building Construction and Finishing/Landscaping	Rollers	1	8.00	49	0.38
Building Construction and Finishing/Landscaping	Rubber Tired Dozers	1	8.00	135	0.40
Building Construction and Finishing/Landscaping	Rubber Tired Dozers	1	8.00	217	0.40
Building Construction and Finishing/Landscaping	Skid Steer Loaders	2	8.00	111	0.37
Building Construction and Finishing/Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction and Finishing/Landscaping	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Excavators	1	8.00	271	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rollers	1	8.00	121	0.38
Building Construction	Rubber Tired Dozers	1	8.00	135	0.40
Building Construction	Rubber Tired Dozers	1	8.00	217	0.40
Building Construction	Skid Steer Loaders	1	8.00	111	0.37
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Asphalt Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Asphalt Paving	Pavers	1	8.00	225	0.42

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Asphalt Paving	Paving Equipment	0	6.00	132	0.36
Asphalt Paving	Rollers	1	8.00	49	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Asphalt Demolition Debris Haul	Crushing/Proc. Equipment	1	8.00	85	0.78
Asphalt Demolition Debris Haul	Rollers	1	8.00	121	0.38
Asphalt Demolition Debris Haul	Skid Steer Loaders	1	8.00	111	0.37

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
Asphalt Demolition	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition Debris Haul	5	13.00	0.00	250.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction and	9	77.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	77.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	2	5.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Asphalt Demolition - 2022

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	2.8724	21.3314	18.5824	0.0535		0.9365	0.9365		0.8938	0.8938		5,554.3995	5,554.3995	0.8815		5,576.4366
Total	**2.8724**	**21.3314**	**18.5824**	**0.0535**		**0.9365**	**0.9365**		**0.8938**	**0.8938**		**5,554.3995**	**5,554.3995**	**0.8815**		**5,576.4366**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0128	1.0500e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0644**	**0.1343**	**0.5402**	**1.7700e-003**	**0.1805**	**1.9300e-003**	**0.1824**	**0.0482**	**1.8100e-003**	**0.0500**		**181.7296**	**181.7296**	**5.1500e-003**	**9.9700e-003**	**184.8316**

Mitigated Construction On-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	2.8724	21.3314	18.5824	0.0535		0.9365	0.9365		0.8938	0.8938	0.0000	5,554.3995	5,554.3995	0.8815		5,576.4366
Total	**2.8724**	**21.3314**	**18.5824**	**0.0535**		**0.9365**	**0.9365**		**0.8938**	**0.8938**	**0.0000**	**5,554.3995**	**5,554.3995**	**0.8815**		**5,576.4366**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0120	1.0500e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1546	8.8000e-004	0.1554	0.0413	8.1000e-004	0.0421		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0644**	**0.1343**	**0.5402**	**1.7700e-003**	**0.1665**	**1.9300e-003**	**0.1685**	**0.0447**	**1.8100e-003**	**0.0465**		**181.7296**	**181.7296**	**5.1500e-003**	**9.9700e-003**	**184.8316**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Asphalt Demolition Debris Haul - 2022

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					5.3498	0.0000	5.3498	0.8100	0.0000	0.8100			0.0000			0.0000
Off-Road	1.5334	13.5969	14.5241	0.0279		0.6761	0.6761		0.6364	0.6364		2,687.7073	2,687.7073	0.6976		2,705.1473
Total	**1.5334**	**13.5969**	**14.5241**	**0.0279**	**5.3498**	**0.6761**	**6.0258**	**0.8100**	**0.6364**	**1.4464**		**2,687.7073**	**2,687.7073**	**0.6976**		**2,705.1473**

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	0.0907	3.5775	0.9091	0.0147	0.4378	0.0359	0.4737	0.1201	0.0343	0.1544		1,602.3582	1,602.3582	0.0684	0.2539	1,679.7363
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
Worker	0.0529	0.0367	0.4393	1.2100e-003	0.1453	7.6000e-004	0.1461	0.0385	7.0000e-004	0.0392		122.7822	122.7822	3.5400e-003	3.5100e-003	123.9153
Total	**0.1435**	**3.6142**	**1.3484**	**0.0159**	**0.5831**	**0.0366**	**0.6197**	**0.1586**	**0.0350**	**0.1936**		**1,725.1403**	**1,725.1403**	**0.0719**	**0.2574**	**1,803.6517**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					2.2870	0.0000	2.2870	0.3463	0.0000	0.3463			0.0000			0.0000
Off-Road	1.5334	13.5969	14.5241	0.0279		0.6761	0.6761		0.6364	0.6364	0.0000	2,687.7073	2,687.7073	0.6976		2,705.1473
Total	**1.5334**	**13.5969**	**14.5241**	**0.0279**	**2.2870**	**0.6761**	**2.9631**	**0.3463**	**0.6364**	**0.9827**	**0.0000**	**2,687.7073**	**2,687.7073**	**0.6976**		**2,705.1473**

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	0.0907	3.5775	0.9091	0.0147	0.4081	0.0359	0.4439	0.1128	0.0343	0.1471		1,602.3582	1,602.3582	0.0684	0.2539	1,679.7363
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
Worker	0.0529	0.0367	0.4393	1.2100e-003	0.1339	7.6000e-004	0.1347	0.0358	7.0000e-004	0.0365		122.7822	122.7822	3.5400e-003	3.5100e-003	123.9153
Total	**0.1435**	**3.6142**	**1.3484**	**0.0159**	**0.5420**	**0.0366**	**0.5786**	**0.1485**	**0.0350**	**0.1835**		**1,725.1403**	**1,725.1403**	**0.0719**	**0.2574**	**1,803.6517**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Site Preparation - 2022

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.4079	24.6400	16.4809	0.0302		1.2076	1.2076		1.1110	1.1110		2,930.0511	2,930.0511	0.9476		2,953.7421
Total	**2.4079**	**24.6400**	**16.4809**	**0.0302**	**19.6570**	**1.2076**	**20.8647**	**10.1025**	**1.1110**	**11.2135**		**2,930.0511**	**2,930.0511**	**0.9476**		**2,953.7421**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0128	1.0500e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0644**	**0.1343**	**0.5402**	**1.7700e-003**	**0.1805**	**1.9300e-003**	**0.1824**	**0.0482**	**1.8100e-003**	**0.0500**		**181.7296**	**181.7296**	**5.1500e-003**	**9.9700e-003**	**184.8316**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					8.4034	0.0000	8.4034	4.3188	0.0000	4.3188			0.0000			0.0000
Off-Road	2.4079	24.6400	16.4809	0.0302		1.2076	1.2076		1.1110	1.1110	0.0000	2,930.0511	2,930.0511	0.9476		2,953.7421
Total	**2.4079**	**24.6400**	**16.4809**	**0.0302**	**8.4034**	**1.2076**	**9.6110**	**4.3188**	**1.1110**	**5.4298**	**0.0000**	**2,930.0511**	**2,930.0511**	**0.9476**		**2,953.7421**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0120	1.0500e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1546	8.8000e-004	0.1554	0.0413	8.1000e-004	0.0421		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0644**	**0.1343**	**0.5402**	**1.7700e-003**	**0.1665**	**1.9300e-003**	**0.1685**	**0.0447**	**1.8100e-003**	**0.0465**		**181.7296**	**181.7296**	**5.1500e-003**	**9.9700e-003**	**184.8316**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Rough Grading - 2022

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.5592	16.2327	11.4517	0.0196		0.8003	0.8003		0.7363	0.7363		1,902.8699	1,902.8699	0.6154		1,918.2556
Total	**1.5592**	**16.2327**	**11.4517**	**0.0196**	**6.5523**	**0.8003**	**7.3526**	**3.3675**	**0.7363**	**4.1038**		**1,902.8699**	**1,902.8699**	**0.6154**		**1,918.2556**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0128	1.0500e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0407	0.0282	0.3379	9.3000e-004	0.1118	5.9000e-004	0.1124	0.0296	5.4000e-004	0.0302		94.4478	94.4478	2.7200e-003	2.7000e-003	95.3195
Total	**0.0440**	**0.1201**	**0.3712**	**1.3000e-003**	**0.1246**	**1.6400e-003**	**0.1262**	**0.0333**	**1.5400e-003**	**0.0349**		**134.5057**	**134.5057**	**3.7900e-003**	**8.6300e-003**	**137.1719**

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Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	1.5592	16.2327	11.4517	0.0196		0.8003	0.8003		0.7363	0.7363	0.0000	1,902.8699	1,902.8699	0.6154		1,918.2556
Total	**1.5592**	**16.2327**	**11.4517**	**0.0196**	**2.8011**	**0.8003**	**3.6014**	**1.4396**	**0.7363**	**2.1759**	**0.0000**	**1,902.8699**	**1,902.8699**	**0.6154**		**1,918.2556**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0120	1.0500e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0407	0.0282	0.3379	9.3000e-004	0.1030	5.9000e-004	0.1036	0.0275	5.4000e-004	0.0280		94.4478	94.4478	2.7200e-003	2.7000e-003	95.3195
Total	**0.0440**	**0.1201**	**0.3712**	**1.3000e-003**	**0.1150**	**1.6400e-003**	**0.1167**	**0.0310**	**1.5400e-003**	**0.0325**		**134.5057**	**134.5057**	**3.7900e-003**	**8.6300e-003**	**137.1719**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Utility Trenching - 2022

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	0.7615	7.7405	8.1148	0.0223		0.2826	0.2826		0.2600	0.2600		2,153.8750	2,153.8750	0.6966		2,171.2901
Total	**0.7615**	**7.7405**	**8.1148**	**0.0223**		**0.2826**	**0.2826**		**0.2600**	**0.2600**		**2,153.8750**	**2,153.8750**	**0.6966**		**2,171.2901**

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	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
Worker	0.0407	0.0282	0.3379	9.3000e-004	0.1118	5.9000e-004	0.1124	0.0296	5.4000e-004	0.0302		94.4478	94.4478	2.7200e-003	2.7000e-003	95.3195
Total	**0.0407**	**0.0282**	**0.3379**	**9.3000e-004**	**0.1118**	**5.9000e-004**	**0.1124**	**0.0296**	**5.4000e-004**	**0.0302**		**94.4478**	**94.4478**	**2.7200e-003**	**2.7000e-003**	**95.3195**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.7615	7.7405	8.1148	0.0223		0.2826	0.2826		0.2600	0.2600	0.0000	2,153.8750	2,153.8750	0.6966		2,171.2901
Total	**0.7615**	**7.7405**	**8.1148**	**0.0223**		**0.2826**	**0.2826**		**0.2600**	**0.2600**	**0.0000**	**2,153.8750**	**2,153.8750**	**0.6966**		**2,171.2901**

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	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
Worker	0.0407	0.0282	0.3379	9.3000e-004	0.1030	5.9000e-004	0.1036	0.0275	5.4000e-004	0.0280		94.4478	94.4478	2.7200e-003	2.7000e-003	95.3195
Total	**0.0407**	**0.0282**	**0.3379**	**9.3000e-004**	**0.1030**	**5.9000e-004**	**0.1036**	**0.0275**	**5.4000e-004**	**0.0280**		**94.4478**	**94.4478**	**2.7200e-003**	**2.7000e-003**	**95.3195**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Fine Grading - 2022

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3973	13.6737	10.8673	0.0211		0.6332	0.6332		0.5825	0.5825		2,046.4937	2,046.4937	0.6619		2,063.0406
Total	**1.3973**	**13.6737**	**10.8673**	**0.0211**	**7.0826**	**0.6332**	**7.7157**	**3.4247**	**0.5825**	**4.0072**		**2,046.4937**	**2,046.4937**	**0.6619**		**2,063.0406**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0128	1.0500e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0407	0.0282	0.3379	9.3000e-004	0.1118	5.9000e-004	0.1124	0.0296	5.4000e-004	0.0302		94.4478	94.4478	2.7200e-003	2.7000e-003	95.3195
Total	**0.0440**	**0.1201**	**0.3712**	**1.3000e-003**	**0.1246**	**1.6400e-003**	**0.1262**	**0.0333**	**1.5400e-003**	**0.0349**		**134.5057**	**134.5057**	**3.7900e-003**	**8.6300e-003**	**137.1719**

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Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					3.0278	0.0000	3.0278	1.4641	0.0000	1.4641			0.0000			0.0000
Off-Road	1.3973	13.6737	10.8673	0.0211		0.6332	0.6332		0.5825	0.5825	0.0000	2,046.4937	2,046.4937	0.6619		2,063.0406
Total	**1.3973**	**13.6737**	**10.8673**	**0.0211**	**3.0278**	**0.6332**	**3.6610**	**1.4641**	**0.5825**	**2.0466**	**0.0000**	**2,046.4937**	**2,046.4937**	**0.6619**		**2,063.0406**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0120	1.0500e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0407	0.0282	0.3379	9.3000e-004	0.1030	5.9000e-004	0.1036	0.0275	5.4000e-004	0.0280		94.4478	94.4478	2.7200e-003	2.7000e-003	95.3195
Total	**0.0440**	**0.1201**	**0.3712**	**1.3000e-003**	**0.1150**	**1.6400e-003**	**0.1167**	**0.0310**	**1.5400e-003**	**0.0325**		**134.5057**	**134.5057**	**3.7900e-003**	**8.6300e-003**	**137.1719**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 Building Construction and Finishing/Landscaping - 2022

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	2.6193	26.1179	20.8086	0.0507		1.1594	1.1594		1.0666	1.0666		4,911.2427	4,911.2427	1.5884		4,950.9526
Total	**2.6193**	**26.1179**	**20.8086**	**0.0507**		**1.1594**	**1.1594**		**1.0666**	**1.0666**		**4,911.2427**	**4,911.2427**	**1.5884**		**4,950.9526**

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	0.0000
Vendor	0.0670	1.8388	0.6655	7.4700e-003	0.2563	0.0209	0.2772	0.0738	0.0200	0.0938		801.1581	801.1581	0.0215	0.1186	837.0480
Worker	0.3132	0.2172	2.6020	7.2000e-003	0.8607	4.5100e-003	0.8652	0.2283	4.1500e-003	0.2324		727.2482	727.2482	0.0210	0.0208	733.9600
Total	**0.3802**	**2.0560**	**3.2675**	**0.0147**	**1.1170**	**0.0254**	**1.1424**	**0.3021**	**0.0242**	**0.3262**		**1,528.4062**	**1,528.4062**	**0.0425**	**0.1394**	**1,571.0080**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	2.6193	26.1179	20.8086	0.0507		1.1594	1.1594		1.0666	1.0666	0.0000	4,911.2427	4,911.2427	1.5884		4,950.9526
Total	**2.6193**	**26.1179**	**20.8086**	**0.0507**		**1.1594**	**1.1594**		**1.0666**	**1.0666**	**0.0000**	**4,911.2427**	**4,911.2427**	**1.5884**		**4,950.9526**

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	0.0000
Vendor	0.0670	1.8388	0.6655	7.4700e-003	0.2399	0.0209	0.2608	0.0698	0.0200	0.0898		801.1581	801.1581	0.0215	0.1186	837.0480
Worker	0.3132	0.2172	2.6020	7.2000e-003	0.7933	4.5100e-003	0.7979	0.2117	4.1500e-003	0.2159		727.2482	727.2482	0.0210	0.0208	733.9600
Total	**0.3802**	**2.0560**	**3.2675**	**0.0147**	**1.0332**	**0.0254**	**1.0586**	**0.2815**	**0.0242**	**0.3056**		**1,528.4062**	**1,528.4062**	**0.0425**	**0.1394**	**1,571.0080**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.9 Building Construction - 2022

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	1.7916	18.1214	13.3792	0.0285		0.8637	0.8637		0.7946	0.7946		2,755.9846	2,755.9846	0.8913		2,778.2682
Total	**1.7916**	**18.1214**	**13.3792**	**0.0285**		**0.8637**	**0.8637**		**0.7946**	**0.7946**		**2,755.9846**	**2,755.9846**	**0.8913**		**2,778.2682**

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	0.0000
Vendor	0.0502	1.3791	0.4991	5.6000e-003	0.1922	0.0157	0.2079	0.0554	0.0150	0.0703		600.8685	600.8685	0.0161	0.0890	627.7860
Worker	0.3132	0.2172	2.6020	7.2000e-003	0.8607	4.5100e-003	0.8652	0.2283	4.1500e-003	0.2324		727.2482	727.2482	0.0210	0.0208	733.9600
Total	**0.3634**	**1.5963**	**3.1011**	**0.0128**	**1.0529**	**0.0202**	**1.0731**	**0.2836**	**0.0192**	**0.3028**		**1,328.1167**	**1,328.1167**	**0.0371**	**0.1097**	**1,361.7460**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.7916	18.1214	13.3792	0.0285		0.8637	0.8637		0.7946	0.7946	0.0000	2,755.9846	2,755.9846	0.8913		2,778.2681
Total	**1.7916**	**18.1214**	**13.3792**	**0.0285**		**0.8637**	**0.8637**		**0.7946**	**0.7946**	**0.0000**	**2,755.9846**	**2,755.9846**	**0.8913**		**2,778.2681**

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	0.0000
Vendor	0.0502	1.3791	0.4991	5.6000e-003	0.1799	0.0157	0.1956	0.0523	0.0150	0.0673		600.8685	600.8685	0.0161	0.0890	627.7860
Worker	0.3132	0.2172	2.6020	7.2000e-003	0.7933	4.5100e-003	0.7979	0.2117	4.1500e-003	0.2159		727.2482	727.2482	0.0210	0.0208	733.9600
Total	**0.3634**	**1.5963**	**3.1011**	**0.0128**	**0.9732**	**0.0202**	**0.9934**	**0.2641**	**0.0192**	**0.2832**		**1,328.1167**	**1,328.1167**	**0.0371**	**0.1097**	**1,361.7460**

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.10 Asphalt Paving - 2022

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	0.4765	4.5220	3.1330	9.9200e-003		0.1733	0.1733		0.1595	0.1595		959.9368	959.9368	0.3105		967.6984
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4765**	**4.5220**	**3.1330**	**9.9200e-003**		**0.1733**	**0.1733**		**0.1595**	**0.1595**		**959.9368**	**959.9368**	**0.3105**		**967.6984**

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	0.0000
Vendor	0.0235	0.6436	0.2329	2.6200e-003	0.0897	7.3200e-003	0.0970	0.0258	7.0000e-003	0.0328		280.4053	280.4053	7.5200e-003	0.0415	292.9668
Worker	0.0203	0.0141	0.1690	4.7000e-004	0.0559	2.9000e-004	0.0562	0.0148	2.7000e-004	0.0151		47.2239	47.2239	1.3600e-003	1.3500e-003	47.6597
Total	**0.0438**	**0.6577**	**0.4019**	**3.0900e-003**	**0.1456**	**7.6100e-003**	**0.1532**	**0.0407**	**7.2700e-003**	**0.0479**		**327.6292**	**327.6292**	**8.8800e-003**	**0.0429**	**340.6266**

Mitigated Construction On-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.4765	4.5220	3.1330	9.9200e-003		0.1733	0.1733		0.1595	0.1595	0.0000	959.9368	959.9368	0.3105		967.6984
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4765**	**4.5220**	**3.1330**	**9.9200e-003**		**0.1733**	**0.1733**		**0.1595**	**0.1595**	**0.0000**	**959.9368**	**959.9368**	**0.3105**		**967.6984**

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	0.0000
Vendor	0.0235	0.6436	0.2329	2.6200e-003	0.0840	7.3200e-003	0.0913	0.0244	7.0000e-003	0.0314		280.4053	280.4053	7.5200e-003	0.0415	292.9668
Worker	0.0203	0.0141	0.1690	4.7000e-004	0.0515	2.9000e-004	0.0518	0.0138	2.7000e-004	0.0140		47.2239	47.2239	1.3600e-003	1.3500e-003	47.6597
Total	**0.0438**	**0.6577**	**0.4019**	**3.0900e-003**	**0.1355**	**7.6100e-003**	**0.1431**	**0.0382**	**7.2700e-003**	**0.0454**		**327.6292**	**327.6292**	**8.8800e-003**	**0.0429**	**340.6266**

3.11 Architectural Coating - 2022

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Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Archit. Coating	2.7728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**2.9774**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	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
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0610**	**0.0423**	**0.5069**	**1.4000e-003**	**0.1677**	**8.8000e-004**	**0.1685**	**0.0445**	**8.1000e-004**	**0.0453**		**141.6717**	**141.6717**	**4.0800e-003**	**4.0400e-003**	**142.9792**

Mitigated Construction On-Site

Redlands East Valley HS Field - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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					
Archit. Coating	2.7728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**2.9774**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	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
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1546	8.8000e-004	0.1554	0.0413	8.1000e-004	0.0421		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0610**	**0.0423**	**0.5069**	**1.4000e-003**	**0.1546**	**8.8000e-004**	**0.1554**	**0.0413**	**8.1000e-004**	**0.0421**		**141.6717**	**141.6717**	**4.0800e-003**	**4.0400e-003**	**142.9792**

CalEEMod Mitigated Construction Model (Site Preparation Phase Only)

Redlands East Valley HS Field, Mitigated Site Preparation Phase - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Redlands East Valley HS Field, Mitigated Site Preparation Phase

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	5.42	1000sqft	0.00	5,417.00	0
Other Non-Asphalt Surfaces	177.06	1000sqft	4.06	177,063.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	509.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on 2020 Sustainability Report.

Land Use - Based on applicant info. (see assumptions file).

Construction Phase - Compiled "worst-case" scenario of the Proposed Phases 1-3 for year 2022 to model highest peak daily emissions (see assumptions file).

Off-road Equipment - Based on equipment mix provided by District, used deafult HP for Terex Jaw Plant Crusher as worst-case scenario

Off-road Equipment - Based on equipment mix provided by District

Trips and VMT - Assume 2 vt/day/water truck, accounted for dump trucks based on applicant's equipment mix, see assumptions file

Demolition -

Grading -

Architectural Coating -

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Redlands East Valley HS Field, Mitigated Site Preparation Phase - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Off-road Equipment Mitigation - SCAQMD Rule 403 and SCAQMD Rule 1186, MM: water 3x/day, add non-toxic soil stabilizer, tier 4 interim equipment

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblLandUse	LandUseSquareFeet	5,420.00	5,417.00
tblLandUse	LandUseSquareFeet	177,060.00	177,063.00
tblLandUse	LotAcreage	0.12	0.00
tblOffRoadEquipment	HorsePower	247.00	135.00
tblOffRoadEquipment	HorsePower	247.00	217.00
tblOffRoadEquipment	HorsePower	80.00	121.00
tblOffRoadEquipment	HorsePower	203.00	193.00
tblOffRoadEquipment	HorsePower	65.00	111.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	509.98
tblTripsAndVMT	VendorTripNumber	0.00	2.00

Redlands East Valley HS Field, Mitigated Site Preparation Phase - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	2.4722	24.7743	17.0210	0.0320	19.8375	1.2096	21.0471	10.1506	1.1128	11.2634	0.0000	3,111.7808	3,111.7808	0.9528	9.9700e-003	3,138.5737
Maximum	**2.4722**	**24.7743**	**17.0210**	**0.0320**	**19.8375**	**1.2096**	**21.0471**	**10.1506**	**1.1128**	**11.2634**	**0.0000**	**3,111.7808**	**3,111.7808**	**0.9528**	**9.9700e-003**	**3,138.5737**

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					
2022	0.5275	11.0788	20.4349	0.0320	7.4495	0.0515	7.5010	3.7877	0.0514	3.8391	0.0000	3,111.7808	3,111.7808	0.9528	9.9700e-003	3,138.5737
Maximum	**0.5275**	**11.0788**	**20.4349**	**0.0320**	**7.4495**	**0.0515**	**7.5010**	**3.7877**	**0.0514**	**3.8391**	**0.0000**	**3,111.7808**	**3,111.7808**	**0.9528**	**9.9700e-003**	**3,138.5737**

	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	**78.66**	**55.28**	**-20.06**	**0.00**	**62.45**	**95.74**	**64.36**	**62.69**	**95.38**	**65.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Redlands East Valley HS Field, Mitigated Site Preparation Phase - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	3/5/2022	3/11/2022	5	5	c

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 4.06

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rollers	1	8.00	121	0.38
Site Preparation	Rubber Tired Dozers	2	8.00	135	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	217	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	193	0.36
Site Preparation	Skid Steer Loaders	1	8.00	111	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

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
Site Preparation	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Redlands East Valley HS Field, Mitigated Site Preparation Phase - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2022

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.4079	24.6400	16.4809	0.0302		1.2076	1.2076		1.1110	1.1110		2,930.0511	2,930.0511	0.9476		2,953.7421
Total	**2.4079**	**24.6400**	**16.4809**	**0.0302**	**19.6570**	**1.2076**	**20.8647**	**10.1025**	**1.1110**	**11.2135**		**2,930.0511**	**2,930.0511**	**0.9476**		**2,953.7421**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0128	1.0500e-003	0.0139	3.6900e-003	1.0000e-003	4.6900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0644**	**0.1343**	**0.5402**	**1.7700e-003**	**0.1805**	**1.9300e-003**	**0.1824**	**0.0482**	**1.8100e-003**	**0.0500**		**181.7296**	**181.7296**	**5.1500e-003**	**9.9700e-003**	**184.8316**

Redlands East Valley HS Field, Mitigated Site Preparation Phase - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					7.2829	0.0000	7.2829	3.7430	0.0000	3.7430			0.0000			0.0000
Off-Road	0.4631	10.9446	19.8947	0.0302		0.0496	0.0496		0.0496	0.0496	0.0000	2,930.0511	2,930.0511	0.9476		2,953.7421
Total	**0.4631**	**10.9446**	**19.8947**	**0.0302**	**7.2829**	**0.0496**	**7.3325**	**3.7430**	**0.0496**	**3.7925**	**0.0000**	**2,930.0511**	**2,930.0511**	**0.9476**		**2,953.7421**

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	0.0000
Vendor	3.3500e-003	0.0919	0.0333	3.7000e-004	0.0120	1.0500e-003	0.0130	3.4900e-003	1.0000e-003	4.4900e-003		40.0579	40.0579	1.0700e-003	5.9300e-003	41.8524
Worker	0.0610	0.0423	0.5069	1.4000e-003	0.1546	8.8000e-004	0.1554	0.0413	8.1000e-004	0.0421		141.6717	141.6717	4.0800e-003	4.0400e-003	142.9792
Total	**0.0644**	**0.1343**	**0.5402**	**1.7700e-003**	**0.1665**	**1.9300e-003**	**0.1685**	**0.0447**	**1.8100e-003**	**0.0465**		**181.7296**	**181.7296**	**5.1500e-003**	**9.9700e-003**	**184.8316**

LST Worksheets

Construction Localized Significance Thresholds - Asphalt Demolition

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.00	25	82	4.06

Source Receptor	**East San Bernardino Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**118**	Graders	0.5	0.0625			0
CO	**775**	Dozers	0.5	0.0625	8	1	0.5
PM10	**4.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	1	118	148	211	334	651
		118	148	211	334	651
CO	1	775	1205	2279	5351	21703
	1	775	1205	2279	5351	21703
		775	1205	2279	5351	21703
PM10	1	4	12	36	82	220
	1	4	12	36	82	220
		4	12	36	82	220
PM2.5	1	4	5	10	26	112
	1	4	5	10	26	112
		4	5	10	26	112

East San Bernardino Valley

1.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	118	148	211	334	651
CO	775	1205	2279	5351	21703
PM10	4	12	36	82	220
PM2.5	4	5	10	26	112

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Asphalt Demolition Debris Haul

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.00	25	82	4.06

Source Receptor	**East San Bernardino Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**118**	Graders	0.5	0.0625			0
CO	**775**	Dozers	0.5	0.0625	8	1	0.5
PM10	**4.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	1	118	148	211	334	651
		118	148	211	334	651
CO	1	775	1205	2279	5351	21703
	1	775	1205	2279	5351	21703
		775	1205	2279	5351	21703
PM10	1	4	12	36	82	220
	1	4	12	36	82	220
		4	12	36	82	220
PM2.5	1	4	5	10	26	112
	1	4	5	10	26	112
		4	5	10	26	112

East San Bernardino Valley

1.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	118	148	211	334	651
CO	775	1205	2279	5351	21703
PM10	4	12	36	82	220
PM2.5	4	5	10	26	112

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Site Preparation

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	2.50	25	82	4.06

Source Receptor	East San Bernardino Valley	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**187**	Graders	0.5	0.0625			0
CO	**1,324**	Dozers	0.5	0.0625	8	3	1.5
PM10	**8.16**	Scrapers	1	0.125			0
PM2.5	**5.67**					**Acres**	2.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	2	170	200	263	377	683
	3	203	234	301	413	715
		187	217	282	395	699
CO	2	1174	1712	3029	6375	23294
	3	1474	2105	3608	7265	24746
		1324	1908	3318	6820	24020
PM10	2	7	21	44	90	230
	3	9	28	51	98	238
		8	25	48	94	234
PM2.5	2	5	7	13	30	120
	3	6	9	15	33	127
		6	8	14	32	123

East San Bernardino Valley

2.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	187	217	282	395	699
CO	1324	1908	3318	6820	24020
PM10	8	25	48	94	234
PM2.5	6	8	14	32	123

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	2	35	3
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Rough Grading

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.50	25	82	4.06

Source Receptor	East San Bernardino Valley	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**144**	Graders	0.5	0.0625			0
CO	**974**	Dozers	0.5	0.0625	8	2	1
PM10	**5.50**	Scrapers	1	0.125			0
PM2.5	**4.50**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	2	170	200	263	377	683
		144	174	237	356	667
CO	1	775	1205	2279	5351	21703
	2	1174	1712	3029	6375	23294
		975	1459	2654	5863	22499
PM10	1	4	12	36	82	220
	2	7	21	44	90	230
		6	17	40	86	225
PM2.5	1	4	5	10	26	112
	2	5	7	13	30	120
		5	6	12	28	116

East San Bernardino Valley

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	144	174	237	356	667
CO	975	1459	2654	5863	22499
PM10	6	17	40	86	225
PM2.5	5	6	12	28	116

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Utility Trenching

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.00	25	82	4.13

Source Receptor	East San Bernardino Valley	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**118**	Graders	0.5	0.0625			0
CO	**775**	Dozers	0.5	0.0625			0
PM10	**4.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	1	118	148	211	334	651
		118	148	211	334	651
CO	1	775	1205	2279	5351	21703
	1	775	1205	2279	5351	21703
		775	1205	2279	5351	21703
PM10	1	4	12	36	82	220
	1	4	12	36	82	220
		4	12	36	82	220
PM2.5	1	4	5	10	26	112
	1	4	5	10	26	112
		4	5	10	26	112

East San Bernardino Valley

1.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	118	148	211	334	651
CO	775	1205	2279	5351	21703
PM10	4	12	36	82	220
PM2.5	4	5	10	26	112

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Fine Grading

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.50	25	82	4.06

Source Receptor	East San Bernardino Valley	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**144**	Graders	0.5	0.0625	8	1	0.5
CO	**974**	Dozers	0.5	0.0625	8	1	0.5
PM10	**5.50**	Scrapers	1	0.125			0
PM2.5	**4.50**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	2	170	200	263	377	683
		144	174	237	356	667
CO	1	775	1205	2279	5351	21703
	2	1174	1712	3029	6375	23294
		975	1459	2654	5863	22499
PM10	1	4	12	36	82	220
	2	7	21	44	90	230
		6	17	40	86	225
PM2.5	1	4	5	10	26	112
	2	5	7	13	30	120
		5	6	12	28	116

East San Bernardino Valley

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	144	174	237	356	667
CO	975	1459	2654	5863	22499
PM10	6	17	40	86	225
PM2.5	5	6	12	28	116

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Building Construction, Finishing/Landscaping

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.50	25	82	4.06

Source Receptor	**East San Bernardino Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**144**	Graders	0.5	0.0625			0
CO	**974**	Dozers	0.5	0.0625	8	2	1
PM10	**5.50**	Scrapers	1	0.125			0
PM2.5	**4.50**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	2	170	200	263	377	683
		144	174	237	356	667
CO	1	775	1205	2279	5351	21703
	2	1174	1712	3029	6375	23294
		975	1459	2654	5863	22499
PM10	1	4	12	36	82	220
	2	7	21	44	90	230
		6	17	40	86	225
PM2.5	1	4	5	10	26	112
	2	5	7	13	30	120
		5	6	12	28	116

East San Bernardino Valley

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	144	174	237	356	667
CO	975	1459	2654	5863	22499
PM10	6	17	40	86	225
PM2.5	5	6	12	28	116

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Building Construction

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.50	25	82	4.06

Source Receptor	**East San Bernardino Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**144**	Graders	0.5	0.0625			0
CO	**974**	Dozers	0.5	0.0625	8	2	1
PM10	**5.50**	Scrapers	1	0.125			0
PM2.5	**4.50**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	2	170	200	263	377	683
		144	174	237	356	667
CO	1	775	1205	2279	5351	21703
	2	1174	1712	3029	6375	23294
		975	1459	2654	5863	22499
PM10	1	4	12	36	82	220
	2	7	21	44	90	230
		6	17	40	86	225
PM2.5	1	4	5	10	26	112
	2	5	7	13	30	120
		5	6	12	28	116

East San Bernardino Valley

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	144	174	237	356	667
CO	975	1459	2654	5863	22499
PM10	6	17	40	86	225
PM2.5	5	6	12	28	116

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Building Construction, Asphalt Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.50	25	82	4.06

Source Receptor	**East San Bernardino Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**144**	Graders	0.5	0.0625			0
CO	**974**	Dozers	0.5	0.0625	8	2	1
PM10	**5.50**	Scrapers	1	0.125			0
PM2.5	**4.50**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	2	170	200	263	377	683
		144	174	237	356	667
CO	1	775	1205	2279	5351	21703
	2	1174	1712	3029	6375	23294
		975	1459	2654	5863	22499
PM10	1	4	12	36	82	220
	2	7	21	44	90	230
		6	17	40	86	225
PM2.5	1	4	5	10	26	112
	2	5	7	13	30	120
		5	6	12	28	116

East San Bernardino Valley

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	144	174	237	356	667
CO	975	1459	2654	5863	22499
PM10	6	17	40	86	225
PM2.5	5	6	12	28	116

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds - Building Construction, Architectural Coating

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
35	1.50	25	82	4.06

Source Receptor	East San Bernardino Valley	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**144**	Graders	0.5	0.0625			0
CO	**974**	Dozers	0.5	0.0625	8	2	1
PM10	**5.50**	Scrapers	1	0.125			0
PM2.5	**4.50**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	118	148	211	334	651
	2	170	200	263	377	683
		144	174	237	356	667
CO	1	775	1205	2279	5351	21703
	2	1174	1712	3029	6375	23294
		975	1459	2654	5863	22499
PM10	1	4	12	36	82	220
	2	7	21	44	90	230
		6	17	40	86	225
PM2.5	1	4	5	10	26	112
	2	5	7	13	30	120
		5	6	12	28	116

East San Bernardino Valley

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	144	174	237	356	667
CO	975	1459	2654	5863	22499
PM10	6	17	40	86	225
PM2.5	5	6	12	28	116

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
35	1	35	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Appendix C Noise and Vibration Analysis

Appendices

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LOCAL REGULATIONS AND STANDARDS

POLICIES

Principles

7-P.37 Use the City of Redlands Local Hazard Mitigation Plan and Emergency Operations Plan as the guides for disaster planning in the Redlands Planning Area.

7-P.38 Aim for City-level self-sufficiency in emergency response.

Actions

7-A.127 Use the City of Redlands Local Hazard Mitigation Plan as the guide for identifying hazard risks and vulnerabilities, identifying and prioritizing mitigation actions, encouraging the development of local mitigation, and providing technical support for these efforts.

7-A.128 Continue to update and revise the Local Hazard Mitigation Plan and Emergency Operations Plan as needed to reflect changes in the Planning Area and in emergency management techniques, including specific local hazards that may not be included in the plan.

7-A.129 Maintain and update the City's Emergency Plan, as required by State law.

7-A.130 Maintain ongoing emergency response coordination with surrounding jurisdictions.

7-A.131 Require all City staff to be adequately trained to respond to emergency situations and conduct regular emergency preparedness drills with local organizations including the City's Fire, Police, Quality of Life, Emergency Management, and Municipal & Utilities Engineering departments.

7-A.132 Establish community programs to train volunteers to assist police, fire, and civil defense personnel during and after a major earthquake, fire, flood, or other major disaster.

7-A.133 Develop a public awareness program on the nature and extent of natural hazards in the Planning Area, and ways of minimizing disasters.

7-A.134 Investigate and plan for changes in hazard conditions due to climate change. Develop strategies to address changing risks to life and property from flood, drought, fire and other potential hazards, including those related to monitoring, emergency preparedness, development policies, conservation, and community resilience, and ensure that the City's hazard information is up to date regarding climate trends.

7.5 NOISE

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep. Future residential development and recreational land uses will need to meet the City's land use compatibility matrix and noise standards. Of particular attention to the City are noise levels near loud transportation corridors, including roadways, the airport, railways.

Noise Measurement

- **Level.** The decibel (dB) system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).
- **Frequency.** Frequency is the composition or spectrum of the sound. Frequency is a measure of the pressure fluctuations per second.
- **Variation.** Variation is the sound level over time. Predominant rating scales for human communities in the State of California (State) are the Leq and the Community Noise Equivalent Level (CNEL) or the day-night average level (Ldn) based on A-weighted decibels. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly Leq for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). Ldn is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and Ldn are within 1 dBA of each other and are normally interchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Noise Impacts

Noise impacts can be described in three categories. The first includes audible impacts, which refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater, since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise level of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will potentially result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and

generally more concentrated in urban areas than in outlying, less-developed areas. Table 7-9 shows common sound levels and their noise sources.

Noise Sources

Traffic Noise

Automobiles, buses, and trucks produce transportation noise in Redlands. Major transportation noise sources in Redlands include traffic on Interstate 10 (I-10), Interstate 210 (I-210), California Street, Alabama Street, Tennessee Street, Center Street, Cajon Street, 6th Street, Orange Street, Church Street, Ford Street, Lugonia Avenue, Colton Avenue, Citrus Avenue, Highland Avenue, 5th Avenue, San Bernardino Avenue, Judson Avenue, Wabash Avenue, and Redlands Boulevard. Figure 7-8 shows noise level existing contours along roadways and along I-10. Figure 7-9 shows future noise contours projected for 2035.

Rail Noise

The noise impacts associated with rail activities depend on a number of factors, including the type of train, the length of train, the use of a horn, the physical track conditions, the geometry and intervening structures between the rail line and its receptor, the number of trains operating, and the speed of the train.

Currently, two rail lines pass through portions of the city. The first is located along the Redlands Boulevard corridor and runs in an east-west direction generally following I-10, and runs through Downtown Redlands. This rail line is currently inactive, but the Redlands Passenger Rail Corridor project is now cleared for final design and construction along the right-of-way. The second rail line, which is currently active, is operated by Union Pacific. This rail line passes through the southwest and southern portion of the city, generally running parallel to San Timoteo Canyon Road. Based on the crossing inventory completed on January 1, 2011, at the Alessandro Road intersection, typical operations included approximately 17 daytime trains and 20 nighttime trains ranging in speed from 45 to 65 mph.

Aircraft Noise

The Redlands Municipal Airport is a source of noise, primarily from takeoffs and landings. There are on average 120 inbound and outbound flights from this airport. Aircraft includes single and multi-engine airplanes, jet airplanes, helicopters, gliders, and ultralight aircrafts. Noise from the aircraft generates a relatively minor contribution to the overall noise environment. Existing aircraft noise contours are illustrated in Figure 7-8.

Stationary Noise Sources

Commercial-industrial and light-industrial land uses in the city have the potential to generate high noise levels and impact surrounding land uses with their equipment operation. Noise sources from these land uses include: air conditioning or refrigeration units, power tools, lawn equipment, generators, and other powered mechanical equipment.

TABLE 7-9: COMMON SOUND LEVELS AND THEIR NOISE SOURCES

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations[1]
Near jet engine	140	Deafening	128 times as loud
Civil defense siren	130	Threshold of pain	64 times as loud
Hard rock band	120	Threshold of feeling	32 times as loud
Accelerating motorcycle a few feet away	110	Very Loud	16 times as loud
Pile driver; noisy urban street/heavy city traffic	100	Very Loud	8 times as loud
Ambulance siren; food blender	95	Very Loud	—
Garbage disposal	90	Very Loud	4 times as loud
Freight cars; living room music	85	Loud	—
Pneumatic drill; vacuum cleaner	80	Loud	2 times as loud
Busy restaurant	75	Moderately loud	—
Near freeway auto traffic	70	Moderately loud	Reference level
Average office	60	Quiet	½ as loud
Suburban street	55	Quiet	—
Light traffic; soft radio music in apartment	50	Quiet	¼ as loud
Large transformer	45	Quiet	—
Average residence without stereo playing	40	Faint	$\frac{1}{8}$ as loud
Soft whisper	30	Faint	—
Rustling leaves	20	Very faint	—
Human breathing	10	Very faint	Threshold of hearing
—	0	Very faint	—

Notes:
1. Subjective evaluations based on reference level of near freeway auto traffic.

Source: LSA Associates, 2015.

POLICIES

Principles

7-P.39 Support measures to reduce noise emissions by motor vehicles, aircraft, and trains.

7-P.40 Protect public health and welfare by eliminating existing noise problems where feasible and by preventing significant degradation of the future acoustic environment.

7-P.41 Ensure that new development is compatible with the noise environment by continuing to use potential noise exposure as a criterion in land use planning.

7-P.42 Guide the location and design of transportation facilities, industrial uses, and other potential noise generators to minimize the effects of noise on adjacent land uses.

7-P.43 Ensure long-term compatibility between the Redlands Municipal Airport and surrounding land uses.

Actions

Land Use and Noise Compatibility

7-A.135 Use the noise and land use compatibility matrix (Table 7-10) and Future Noise Contours map (Figure 7-9) as criteria to determine the acceptability of a given land use, including the improvement/construction of streets, railroads, freeways, and highways. Do not permit new noise-sensitive uses—including schools, hospitals, places of worship, and homes—where noise levels are "normally unacceptable" or higher, if alternative locations are available for the uses in the city.

7-A.136 Require a noise analysis be conducted for all development proposals located where projected noise exposure would be other than "clearly" or "normally compatible" as specified in Table 7-10.

7-A.137 For all projects that have noise exposure levels that exceed the standards in Table 7-10, require site planning and architecture to incorporate noise-attenuating features. With mitigation, development should meet the allowable outdoor and indoor noise exposure standards in Table 7-11. When a building's openings to the exterior are required to be closed to meet the interior noise standard, mechanical ventilation shall be provided.

7-A.138 Continue to maintain performance standards in the Municipal code to ensure that noise generated by proposed projects is compatible with surrounding land uses.

Railroad Noise

7-A.139 Work with SANBAG and other agencies to ensure that the Redlands Rail project incorporates mitigation to minimize potential impacts to the surrounding noise-sensitive uses once the final design is complete.

7-A.140 Coordinate with other agencies and private entities to implement a railroad quiet zone and other methods of reducing railroad noise impacts on surrounding uses along the Redlands Rail project and Southern Pacific Railroad.

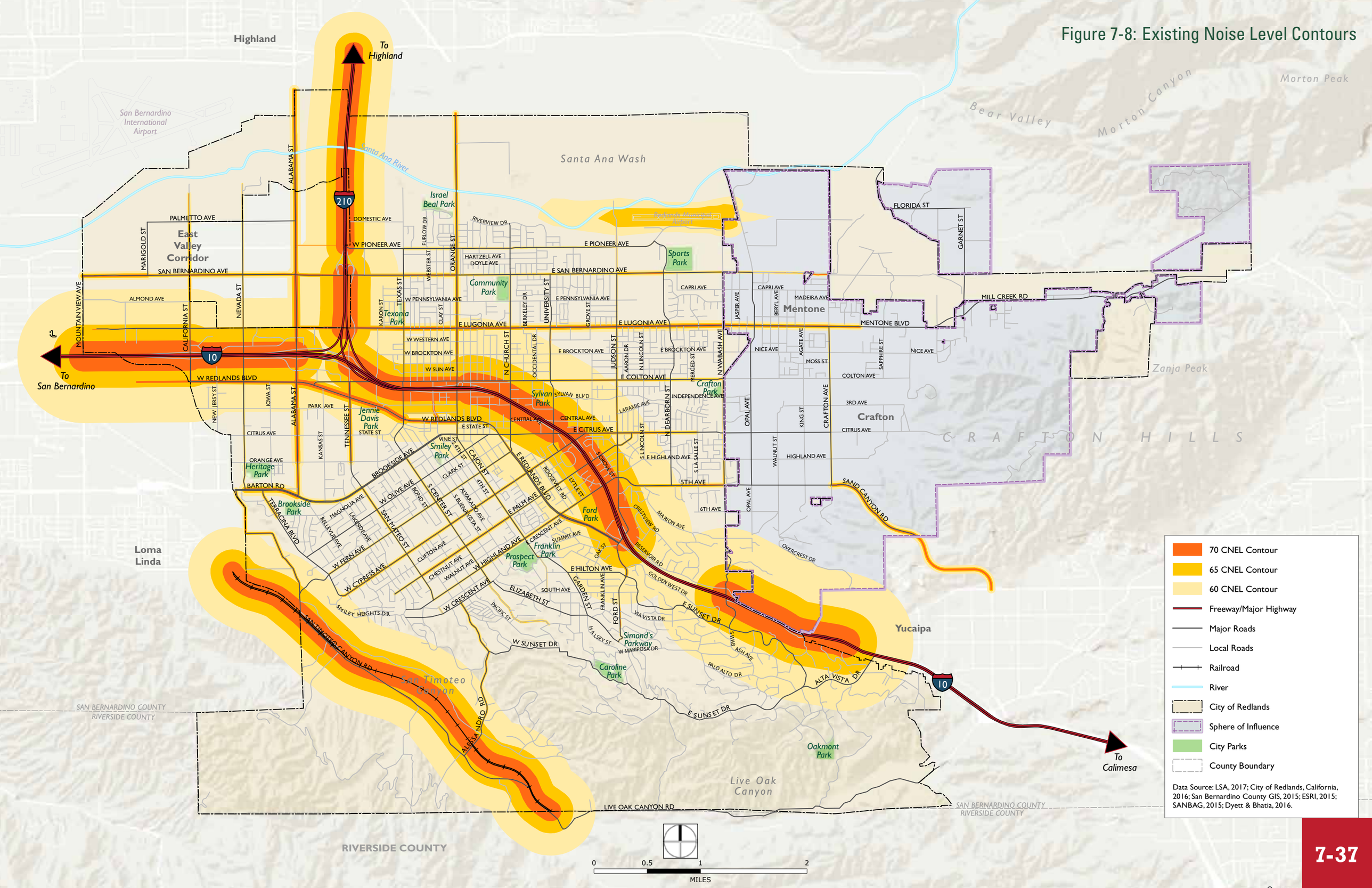
7-A.141 Require all future developments within the city that fall within the required noise screening distances, as specified in the Federal Transit Authority (FTA) Noise and Vibration Manual, of the Union Pacific railroad in San Timoteo Canyon to conduct a detailed noise analysis.

Airport Noise

7-A.142 For projects within the Redlands Municipal Airport Influence Area, utilize the noise standards contained in the Redlands Municipal Airport ALUCP, as well as the noise standards contained in this element.

7-A.143 Periodically update the noise contours at the Redlands Municipal Airport or upon a major change in airport flight patterns.

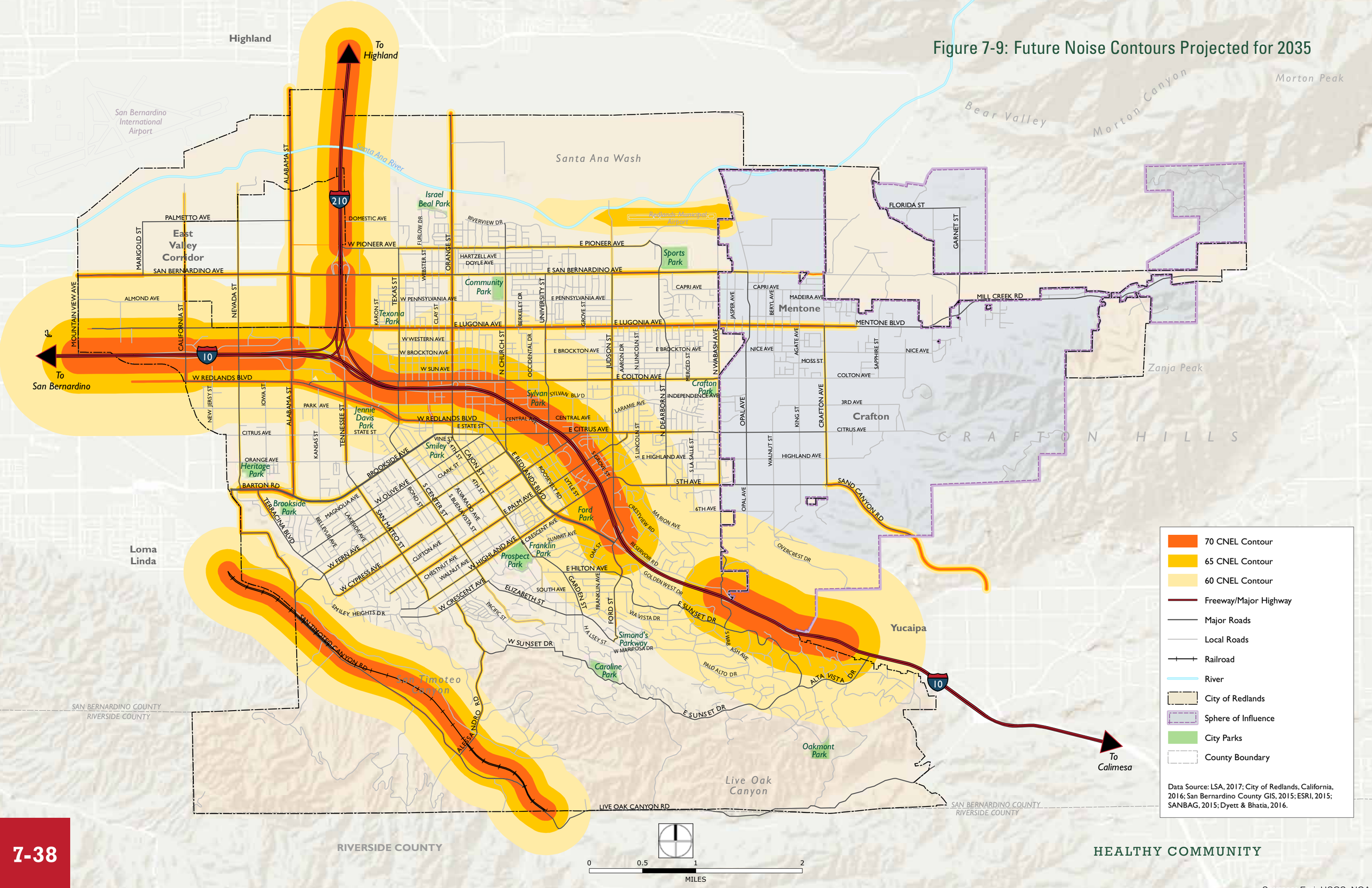
Figure 7-8: Existing Noise Level Contours



- 70 CNEL Contour
- 65 CNEL Contour
- 60 CNEL Contour
- Freeway/Major Highway
- Major Roads
- Local Roads
- Railroad
- River
- City of Redlands
- Sphere of Influence
- City Parks
- County Boundary

Data Source: LSA, 2017; City of Redlands, California, 2016; San Bernardino County GIS, 2015; ESRI, 2015; SANBAG, 2015; Dyett & Bhatia, 2016.

Figure 7-9: Future Noise Contours Projected for 2035



Legend

- 70 CNEL Contour
- 65 CNEL Contour
- 60 CNEL Contour
- Freeway/Major Highway
- Major Roads
- Local Roads
- Railroad
- River
- City of Redlands
- Sphere of Influence
- City Parks
- County Boundary

Data Source: LSA, 2017; City of Redlands, California, 2016; San Bernardino County GIS, 2015; ESRI, 2015; SANBAG, 2015; Dyett & Bhatia, 2016.

IMPLEMENTING POLICIES:
Noise

Introduction: In addition to the provisions of the following sections 9.0e through 9.0z, it is the policy of the City of Redlands that no land use adjacent to existing residential land shall generate noise in excess of the residential CNEL levels specified in Table 9.1 [Table 7-10] and Table 9.2 [Table 7-11] of this Noise Element unless appropriate mitigation measures are imposed to reduce the noise level on adjacent residential property to the standards set forth in Tables 9.1 [Table 7-10] and 9.2 [Table 7-11].

9.0e Use the criteria specified in GP Table 9.1 [Table 7-10] to assess the compatibility of proposed land uses with the projected noise environment, and apply the noise standards in GP Table 9.2 [Table 7-11], which prescribe interior and exterior noise standards in relation to specific land uses. Do not approve projects that would not comply with the standards in GP Table 9.2 [Table 7-1].

These tables are the primary tools which allow the City to ensure noise-integrated planning for compatibility between land uses and outdoor noise.

9.0f Require a noise impact evaluation based on noise measurements at the site for all projects in Noise Referral Zones (B, C, or D) as shown on GP Table 9.1 [Table 7-10] and on GP Figure 9.1 [Figure 7-9] or as determined from tables in the Appendix, as part of the project review process. Should measurements indicate that unacceptable noise levels will be created or experienced, require mitigation measures based on a detailed technical study prepared by a qualified acoustical engineer (i.e., a Registered Professional Engineer in the State of California with a minimum of three years experience in acoustics).

9.0g Consider establishing a periodic noise monitoring program to identify progress in achieving noise abatement objectives and to perform necessary updating of the Noise Element and community noise standards.

The California Department of Health Services recommended that noise elements be updated every five years.

9.0h Minimize potential transportation noise through proper design of street circulation, coordination of routing, and other traffic control measures.

9.0i Require construction of barriers to mitigate sound emissions where necessary or where feasible, and encourage use of walls and berms to protect residential or other noise sensitive land uses that are adjacent to major roads, commercial, or industrial areas.

9.0j Require the inclusion of noise mitigation measures in the design of new roadway projects.

9.0k Ensure the effective enforcement of City, State and federal noise levels by all appropriate City departments.

9.0l Adopt and enforce a new Community Noise Ordinance to mitigate noise conflicts between adjacent land uses, to ensure that City residents are not exposed to excessive noise levels from existing and new stationary noise sources, and to educate the public regarding noise issues.

A Community Noise Ordinance establishes noise limits, typical of a quiet residential area, that can not be exceeded at the property line of the noise-creating use. The types of noise to be controlled include sources such as amplified sound, street sales, animals, construction and demolition, vibration, powered model vehicles, emergency signaling devices, power tools, air conditioning, and vehicles on private property.

9.0m Designate one agency or department in the City to act as the noise control coordinator, to ensure the continued operation of the City's noise enforcement efforts, and to establish and maintain coordination among the City agencies involved in noise abatement.

9.0n Ensure the effective enforcement of City, State, and federal noise levels by all appropriate City departments, and provide quick response to complaints and rapid abatement of noise nuisances within the scope of the City's police power.

9.0o Establish noise guidelines for City purchasing policy to take advantage of federal regulations and labeling requirements.

9.0p Coordinate with the California Occupational Safety and Health Administration (Cal OSHA) to provide information on and enforcement of occupational noise requirements within the City.

9.0q Provide for continued evaluation of truck movements in the City to provide effective separation from residential or other noise sensitive land uses.

9.0r Encourage the enforcement of State Motor Vehicle noise standards for cars, trucks, and motorcycles through coordination with the California Highway Patrol and Redlands Police Department.

9.0s Require mitigation to ensure that indoor noise levels for residential living spaces not exceed 45 dB LDN/CNEL due to the combined effect of all exterior noise sources.

The Uniform Building Code (specifically, the California Administrative Code, Title 24, Part 6, Division T25, Chapter 1, Subchapter 1, Article 4, Sections T25 28) requires that "Interior community noise levels (CNEL/LDN) with windows closed, attributable to exterior sources shall not exceed an annual CNEL or LDN of 45 dB in any habitable room." The code requires that this standard be applied to all new hotels, motels, apartment houses and dwellings other than detached single family dwellings.

Policy 9-s sets the maximum acceptable interior noise level at 45 CNEL. The Noise Referral Zones (65 CNEL) delineate areas within which tests to ensure compliance are to be required for new structures.

9.0t Require proposed commercial projects near existing residential land use to demonstrate compliance with the Community Noise Ordinance prior to approval of the project.

9.0u Require all new residential projects or replacement dwellings to be constructed near existing sources of non transportation noise (including but not limited to commercial facilities or public parks with sports activities) to demonstrate via an acoustical study conducted by a Registered Engineer that the indoor noise levels will be consistent with the limits contained in the Community Noise Ordinance.

9.0v Consider the following impacts as possibly "significant":

- An increase in exposure of four or more dB if the resulting noise level would exceed that described as clearly compatible for the affected land use, as established in GP Table 9.1 [Table 7-10] and GP Table 9.2 [Table 7-11];
- Any increase of six dB or more, due to the potential for adverse community response.

9.0w Limit hours for all construction or demolition work where site-related noise is audible beyond the site boundary.

9.0x Work with Caltrans to establish sound walls along freeways where appropriate.

9.0y Minimize impacts of loud trucks by requiring that maximum noise levels due to single events be controlled to 50 dB in bedrooms and 55 dB in other habitable spaces.

9.0z Coordinate with the San Bernardino International Airport Authority to minimize potential noise impacts to the City of Redlands which may result from overflights as specific airport operations and flight patterns are established.

I-10 and I-210 move through Redlands and are significant sources of noise.

TABLE 7-10: NOISE/LAND USE COMPATIBILITY MATRIX AND INTERPRETATION (MEASURE U TABLE 9.1)

Land Use Categories		Community Noise Equivalent Level (CNEL)							
Categories	**Uses**	**<**	**60**	**65**	**70**	**75**	**80**	**85**	**>**
RESIDENTIAL	Single Family, Duplex Multiple Family	A	C	C	C	D	D	D	
RESIDENTIAL	Mobile Homes	A	C	C	C	D	D	D	
COMMERCIAL Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D	
COMMERCIAL Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C	
COMMERCIAL INDUSTRIAL INSTITUTIONAL	Office Building, Research & Dev., Professional Offices, City Office Building	A	A	A	B	B	C	D	
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheater, Concert Hall, Auditorium, Meeting Hall	B	B	C	C	D	D	D	
COMMERCIAL Recreation	Childrens Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	A	B	B	B	
COMMERCIAL General, Special INDUSTRIAL, INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B	
INSTITUTIONAL General	Hospital, Church, Library, Schools Classroom	A	A	B	C	C	D	D	
OPEN SPACE	Parks	A	A	A	B	C	D	D	
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C	
AGRICULTURE	Agriculture	A	A	A	A	A	A	A	

Zone A CLEARLY COMPATIBLE	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
ZONE B NORMALLY COMPATIBLE	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
ZONE C NORMALLY INCOMPATIBLE	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.
ZONE D CLEARLY INCOMPATIBLE	New construction or development should generally not be undertaken.

Source: Mestre Greve Associates; Guidelines for the Preparation and Content of the Noise Element of the General Plan, prepared by the California Department of Health Services in coordination with The Governor's Office of Planning and Research. Adapted to the City of Redlands' standards.

TABLE 7-11: INTERIOR AND EXTERIOR NOISE STANDARDS (MEASURE U TABLE 9.2)

Land Use Categories	Community Noise Equivalent Level (CNEL) Energy Average CNEL	
Uses	**Interior[1]**	**Exterior[2]**
RESIDENTIAL		
Single Family, Duplex, Multiple Family	45[3]	60
Mobile Home	---	60[4]
COMMERCIAL, INDUSTRIAL, INSTITUTIONAL		
Hotel, Motel, Transient Lodging	45	65[5]
Commercial Retail, Bank Restaurant	55	---
Office Building, Research & Development, Professional Offices, City Office Building	50	---
Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	---
Gymnasium (Multipurpose)	50	---
Sports Club	55	---
Manufacturing, Warehousing, Wholesale, Utilities	60	---
Movie Theaters	45	---
INSTITUTIONAL		
Hospital, Schools classrooms	45	60
OPEN SPACE		
Parks	---	60

Notes:
* CNEL (Community Noise Equivalent Level) - The average equivalent A-weighted sound level during a 24 hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7 pm to 10 pm and ten decibels to sound levels at night after 10 pm and before 7 am.
1. Indoor environment excluding bathrooms, toilets, closets, corridors.
2. Outdoor environment limited to private yard of single family as measured at the property line; multifamily private patio or balcony which is served by a means of exit from inside; mobile home park; hospital patio; park picnic area; school playground; hotel and recreational area.
3. Noise level requirement with open windows, if they are used to meet natural ventilation requirement.
4. Exterior noise level should be such that interior level will not exceed 45 CNEL.
5. Except those areas affected by aircraft noise.

See also Policy 9.0s

Source: Mestre Greve Associates.

Smiley Park is a quiet, peaceful place for residents and University students to take a break.

CHAPTER 8.06

COMMUNITY NOISE CONTROL

SECTION:

8.06.010: PURPOSE:

The purpose of this chapter is to implement the noise control provisions of the Redlands general plan by establishing comprehensive regulations for the control of noise within the city. (Ord. 2579 § 1, 2004)

8.06.020: DEFINITIONS:

The following words and phrases shall have the meanings set out in this section. All terminology used in this chapter, not defined below, shall be in conformance with applicable publications of the American National Standards Institute (ANSI) or its successor body.

A-WEIGHTED SOUND LEVEL: The sound level in decibels as measured on a sound level meter using the A-weighting network. The level so read is designated dBA.

AMBIENT NOISE LEVEL: The all encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

COMMERCIAL: Generally consisting of uses permitted in the commercial zones as set forth in title 18 of this code or adopted specific plans.

CONSTRUCTION: Any site preparation, grading, assembly, erection, substantial repair, alteration and related material handling and disposition, or similar activity, for or on public or private rights of way, structures, utilities or public or private property.

CUMULATIVE PERIOD: An additive period of time composed of individual time segments that may be continuous or interrupted.

DECIBEL: A unit for measuring the amplitude of a sound, equal to twenty (20) times the logarithm to the base ten (10) of the ratio of the pressure of the sound measured to the reference pressure, which is twenty (20) micropascals.

DEMOLITION: Any dismantling, intentional destruction or removal of structures, utilities, public or private right of way surfaces or similar improvements on public or private property.

EMERGENCY WORK: Any work performed for the purpose of preventing or alleviating the physical trauma or property damage which requires immediate mitigation.

FIXED NOISE SOURCE: A stationary device which creates sounds while fixed or motionless including, but not limited to, residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners or refrigeration equipment.

INDUSTRIAL: Generally consisting of uses permitted in the industrial zones as set forth in title 18 of this code or adopted specific plans.

LICENSED: The possession of a license or a permit issued by the appropriate jurisdictional authority; or, where no permits or licenses are issued, the sanctioning of the activity by the jurisdiction as noted in public record.

MOBILE NOISE SOURCE: Any noise source other than a fixed noise source.

MOTOR VEHICLE: Shall include any and all self-propelled vehicles as defined in the California Vehicle Code.

MUFFLER OR SOUND DISSIPATIVE DEVICE: A device consisting of a series of chambers or baffle plates, or other mechanical design, for the purpose of receiving exhaust gas from an internal combustion engine and effective in reducing noise.

NOISE CONTROL OFFICER ("NCO"): The code enforcement division of the city or such other employees of the city so designated by the city manager to enforce this chapter.

NOISE DISTURBANCE: Any sound not in compliance with the quantitative standards as listed herein which either:

A. Endangers or injures the safety or health of human beings or animals;

B. Annoys or disturbs reasonable persons of normal sensitivities;

C. Endangers or injures personal or real property; or

D. Violates section 8.06.030 or 8.06.090 of this chapter.

NOISE SENSITIVE ZONE: Any area designated as such pursuant to this chapter for the purpose of ensuring exceptional quiet.

NOISE ZONE: Any defined areas or regions of a generally consistent land use wherein the ambient noise levels are within a range of five (5) dB.

PERSON: Any individual, association, partnership or corporation, and includes any officer, employee, department, agency or instrumentality of a state or any political subdivision of a state.

POWERED MODEL VEHICLE: Any self-propelled, airborne, waterborne or landborne plane, vessel or vehicle which is not designed to carry persons including, but not limited to, any model airplane, boat, car or rocket.

PUBLIC RIGHT OF WAY: Any street, avenue, boulevard, highway, sidewalk, alley or similar place owned or controlled by a governmental entity.

PUBLIC SPACE: Any real property or structure thereon which is owned or controlled by a governmental entity.

RESIDENTIAL: Generally consisting of uses as permitted in the residential zones as set forth in title 18 of this code or adopted specific plans.

SOUND AMPLIFYING EQUIPMENT: Any device for the amplification of the human voice, music or any other sound, excluding standard automobile radios or stereo systems when used and heard only by the occupants of the vehicle in which the radio or stereo system is installed, excluding warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.

SOUND LEVEL METER: An instrument, including a microphone, amplifier, output meter and frequency weighting networks for the measurement of sound levels which meets or exceeds the requirements of the American National Standard Institute's S1.4-1971, or the most recent revision thereof, for type 1 or type 2 sound level meters.

SOUND TRUCK: Any motor vehicle regardless of motive power, whether in motion or stationary, having mounted thereon or attached thereto, any sound amplifying equipment.

VIBRATION PERCEPTION THRESHOLD: The minimum ground or structure borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of 0.01 inches per second over the range of one to one hundred (100) Hz.

WEEKDAY: Any day, Monday through Friday, which is not a legal holiday. (Ord. 2579 § 1, 2004)

8.06.030: GENERAL NOISE REGULATIONS:

It shall be unlawful for any person to wilfully or negligently make, or cause to be made, any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to a reasonable person of normal sensitivity in the area. The factors that may be considered in determining whether a violation of this chapter exists include, but are not limited to, the following:

A. The sound level of the objectionable noise;

B. The sound level of the ambient noise;

C. The proximity of the noise to residential living or sleeping facilities;

D. The nature and zoning of the area within which the noise emanates;

E. The number of persons affected by the noise;

F. The time of day or night the noise occurs;

G. The duration of the noise;

H. The tonal, informational or musical content of the noise;

I. Whether the noise is continuous, recurrent or intermittent;

J. Whether the noise is produced by a commercial or noncommercial activity;

K. Whether the nature of the noise is usual or unusual;

L. Whether the origin of the noise is natural or unnatural; and

M. Whether the noise occurs on a weekday, weekend or a holiday. (Ord. 2579 § 1, 2004)

8.06.040: ENFORCEMENT AUTHORITY:

A. The NCO and the NCO's duly authorized representatives may enforce the provisions of this chapter.

B. The NCO and its authorized representatives shall have satisfactorily completed an instructional program as recommended by the measuring instrument's manufacturer.

C. No person shall interfere with, oppose or resist the NCO or any authorized person charged with the enforcement of this chapter when such persons are engaged in the performance of their duties. (Ord. 2579 § 1, 2004)

8.06.050: NOISE MEASUREMENT PROCEDURE:

The NCO, equipped with sound level measurement equipment satisfying the requirements in section 8.06.020 of this chapter, may investigate any complaint relating to a violation of this chapter. The investigation shall consist of a measurement and the gathering of data to adequately define the noise problem and include, but not be limited to, the following:

A. Type of noise source;

B. Location of noise source relative to the complainant's property;

C. Time period during which noise source is considered by complainant to be intrusive;

D. Total duration of noise produced by noise source; and

E. Date and time of noise measurement survey. (Ord. 2579 § 1, 2004)

8.06.060: NOISE MEASUREMENT METHODOLOGY:

A. Utilizing the A-weighting scale of the sound level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the noise level shall be measured at a position or positions at any point on the receiver's property deemed appropriate to determine whether the noise level complies with this chapter.

B. The microphone shall be located four (4) to five feet (5') above the ground; ten feet (10') or more from the nearest reflective surface, where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized. If the noise complaint is related to interior noise levels, interior noise measurements shall be made within the affected residential building or unit. The measurements shall be made at a point at least four feet (4') from the wall, ceiling or floor nearest the noise source, with the windows closed.

C. Calibration of the measurement equipment, utilizing an acoustic calibrator, shall be performed immediately prior to recording any noise data. Standard maintenance of the measuring equipment shall be in accordance with the manufacturer's recommendations.

D. No outdoor measurements shall be taken:

1. During periods when wind speeds (including gusts) exceed fifteen (15) miles per hour;

2. Without a windscreen, as recommended by the measuring instrument's manufacturer, properly attached to the measuring instrument;

3. Under any condition that allows the measuring instrument to become wet (e.g., rain or condensation); or

4. When the ambient temperature is out of the range of the tolerance of the measuring instrument. (Ord. 2579 § 1, 2004)

8.06.070: EXTERIOR NOISE LIMITS:

A. The noise standards for the categories of land uses identified in table 1 of this section shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

TABLE 1

MAXIMUM PERMISSIBLE SOUND LEVELS BY RECEIVING LAND USE

Receiving Land Use Category	Time Period	Noise Level - dBA
Single-family residential districts	10:00 P.M. – 7:00 A.M. 7:00 A.M. – 10:00 P.M.	50 60
Multi-family residential districts; public space; institutional	10:00 P.M. – 7:00 A.M. 7:00 A.M. – 10:00 P.M.	50 60
Commercial	10:00 P.M. – 7:00 A.M. 7:00 A.M. – 10:00 P.M.	60 65
Industrial	Any time	75

B. No person shall operate, or cause to be operated, any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level when measured on any other property to exceed:

1. The noise standard for that land use specified in table 1 of this section for a cumulative period of more than thirty (30) minutes in any hour; or

2. The noise standard specified in table 1 of this section plus five (5) dB for a cumulative period of more than fifteen (15) minutes in any hour; or

3. The noise standard specified in table 1 of this section plus ten (10) dB for a cumulative period of more than five (5) minutes in any hour; or

4. The noise standard specified in table 1 of this section plus fifteen (15) dB for a cumulative period of more than one minute in any hour; or

5. The noise standard specified in table 1 of this section plus twenty (20) dB or the maximum measured ambient level, for any period of time.

C. If the measured ambient level exceeds the allowable noise exposure standard within any of the first four (4) noise limit categories above, the allowable noise exposure standard shall be adjusted in five (5) dB increments in each category as appropriate to encompass or reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

D. The ambient noise shall be measured at the same location along the property line utilized in subsection 8.06.060B of this chapter, with the alleged offending noise source inoperative. If the alleged offending noise source cannot be shut down, the ambient noise shall be estimated by performing a measurement in the same general area of the source but at a sufficient distance that the noise from the source is at least ten (10) dB below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is five (5) to ten (10) dB, then the level of the ambient itself can be reasonably determined by subtracting a one decibel correction to account for the contribution of the source.

E. In the event the alleged offensive noise contains a steady, audible tone such as a whine, screech, hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits set forth in table 1 of this section shall be reduced by five (5) dB. (Ord. 2579 § 1, 2004)

8.06.080: INTERIOR NOISE STANDARDS:

A. No person shall operate or cause to be operated any source of sound, or allow the creation of any noise, which causes the noise level when measured inside a neighboring receiving occupied building to exceed the following standards:

1. The noise standard for that land use specified in table 2 of this section for a cumulative period of more than five (5) minutes in any hour.

2. The noise standard for that land use specified in table 2 of this section plus five (5) dB for a cumulative period of more than one minute in any hour.

3. The noise standard for that land use specified in table 2 of this section plus ten (10) dB for the maximum measured ambient noise level for any period of time.

B. If the measured ambient level exceeds the allowable exterior noise exposure standard in table 1 of this chapter, the allowable interior noise exposure level shall be adjusted in five (5) dB increments as appropriate to reflect the ambient noise level.

TABLE 2

MAXIMUM PERMISSIBLE INTERIOR SOUND LEVELS BY RECEIVING LAND USE

Receiving Land Use Category	Time Period	Noise Level - dBA
Single-family residential districts	Any time	45
Multi-family residential districts; institutional; hotels	Any time	45
Commercial	Any time	50
Industrial	Any time	60

(Ord. 2579 § 1, 2004)

8.06.090: NOISE DISTURBANCES PROHIBITED:
The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

A. Radio, Television Set, Etc.: Operating, playing, or permitting the operation or playing of any radio, television set, phonograph, drum, musical instrument or similar device which produces or reproduces sound:

1. Between the hours of ten o'clock (10:00) P.M. and seven o'clock (7:00) A.M. in such a manner as to create a noise disturbance across a residential or commercial real property line or at any time to violate the provisions of section 8.06.030 or 8.06.070 of this chapter.

2. In such a manner as to exceed the levels set forth for public space in table 1 of this chapter, measured at a distance of at least fifty feet (50') from such device operating on a public right of way or public space.

B. Loudspeaker Or Stereo Systems: Using or operating for any purpose any loudspeaker, loudspeaker system, stereo system or similar device between the hours of ten o'clock (10:00) P.M. and seven o'clock (7:00) A.M., such that the sound therefrom creates a noise disturbance across a residential property line, or at any time violates the provisions of section 8.06.030 or 8.06.070 of this chapter, except for noncommercial public speaking, public assembly or activity for which an exemption has been provided for in either this section or section 8.06.120 of this chapter.

C. Street Sales: Offering for sale, selling anything, or advertising by shouting or outcry within the city except by permit issued by the city. This subsection shall not be construed to prohibit the selling by outcry of merchandise, food or beverages at licensed sporting events, parades, fairs, circuses or other similar licensed public entertainment events.

D. Animals And Birds: Owning, possessing or harboring any animal or bird which frequently, or for long duration, howls, barks, meows, squawks or makes other sound which creates a noise disturbance across a residential or commercial real property line or within a noise sensitive zone.

E. Loading And Unloading: Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, refuse containers or similar objects between the hours of ten o'clock

(10:00) P.M. and six o'clock (6:00) A.M. in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate section 8.06.030 of this chapter.

F. Construction And/Or Demolition: Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of six o'clock (6:00) P.M. and seven o'clock (7:00) A.M., including Saturdays, or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work by public service utilities, the city or another governmental entity. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with exhaust and air intake silencers in proper working order, or suitable to meet the standards set forth herein.

G. Vibration: Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty feet (150') from the source if on a public space or public right of way.

H. Powered Model Vehicles: Operating or permitting the operation of powered model vehicles:

1. Between the hours of seven o'clock (7:00) P.M. and seven o'clock (7:00) A.M. so as to create a noise disturbance across a residential or commercial real property line or at any time in violation of section 8.06.030 of this chapter.

2. In such a manner as to exceed the levels set forth for public space land use in table 1 of this chapter measured at a distance not less than one hundred feet (100') from any point on the path of a vehicle operating on public space or public right of way.

I. Stationary, Nonemergency Signaling Devices:

1. Sounding or permitting the sounding of any electronically amplified signal from any stationary bell, chime, siren, whistle or similar device intended primarily for nonemergency purposes, from any place for more than ten (10) seconds in any hourly period.

2. Places of worship and public and private schools shall be exempt from the operation of this subsection.

J. Emergency Signaling Devices:

1. Alarms, Sirens, Whistles: The intentional sounding or permitting the sounding outdoors of any fire, burglar or civil defense alarm, siren, whistle or similar stationary emergency signaling device, except for emergency purposes or for testing as provided in subsection J2 of this section.

2. Testing:

a. Testing of a stationary emergency signaling device shall not occur before seven o'clock (7:00) A.M. or after seven o'clock (7:00) P.M. Any such testing shall use only the minimum cycle test time. In no case shall such test time exceed sixty (60) seconds.

b. Testing of the complete emergency signaling system, including the functioning of the signaling device, and the personnel response to the signaling device, shall not occur more than once in each calendar month. Such testing shall not occur before seven o'clock (7:00) A.M. or after ten o'clock (10:00) P.M. The time limit specified in subsection J2a of this section shall not apply to such complete system testing.

3. Burglar, Fire, Motor Vehicle Alarms: Sounding or permitting the sounding of any exterior burglar or fire alarm or any motor vehicle burglar alarm unless such alarm is terminated within five (5) minutes of activation.

K. Noise Sensitive Zones: Creating or causing the creation of any sound within any noise sensitive zone, so as to exceed the specified land use noise standards set forth in table 1 of this chapter and

subsection 8.06.070B of this chapter, or so as to interfere with the functions of such activity or annoy the occupants in the activity, provided that conspicuous signs are displayed indicating the presence of the zone.

L. Domestic Power Tools And Machinery:

1. Operating or permitting the operation of any mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool between ten o'clock (10:00) P.M. and seven o'clock (7:00) A.M., so as to create a noise disturbance across a residential or commercial real property line.

2. Motor, machinery and pumps, such as swimming pool equipment, shall be sufficiently enclosed or muffled and maintained so as not to create a noise disturbance in accordance with table 1, section 8.06.070 of this chapter.

M. Places Of Public Entertainment: Operating or permitting the operation or playing of any loudspeaker, musical instrument or other source of sound in any place of public entertainment that exceeds ninety five (95) dBA as read on the slow response of a sound level meter at any point normally occupied by a customer, without a conspicuous and legible sign with minimum one inch (1") letter height stating:

WARNING! SOUND LEVELS WITHIN MAY CAUSE HEARING IMPAIRMENT.

(Ord. 2579 § 1, 2004)

8.06.100: RESIDENTIAL AIR CONDITIONING OR AIR HANDLING EQUIPMENT:
It shall be unlawful to operate or permit the operation of any air conditioning or air handling equipment in such a manner as to exceed the sound levels set forth in table 1, section 8.06.070 of this chapter. (Ord. 2579 § 1, 2004)

8.06.110: TAMPERING:
The following acts or the causing thereof are prohibited:

A. The removal or rendering inoperative, other than for purposes of maintenance, repair or replacement, of any noise control device or element thereof of any product required to meet specified noise emission limits under federal, state or local law.

B. The removal of any noise label from any product identified in subsection A of this section.

C. The use of a product identified in subsection A of this section, which has had a noise control device or element thereof or noise label removed or rendered inoperative. (Ord. 2579 § 1, 2004)

8.06.120: EXEMPTIONS:
A. Emergency Exemption: This chapter shall not apply to:

1. The emission of sound for the purpose of alerting persons to the existence of an emergency such as, but not limited to, loudspeakers, horns, sirens, whistles or other similar devices which emit sound, only for the time required to make notification of the emergency condition; or

2. The emission of sound in the performance of emergency work or the temporary provision of essential services such as, but not limited to, utility system repairs or upgrades, infrastructure repairs, structural repairs and other unscheduled, infrequent and nonrecurring activities, required to protect persons and property from physical harm or loss of essential services.

B. Warning Devices: This chapter shall not apply to warning devices necessary for the protection of public safety. Police, fire and ambulance sirens and train horns are exempt from this chapter.

C. Outdoor Activities: This chapter shall not apply to occasional outdoor public gatherings, public dances, shows, and sporting and entertainment events conducted within city parks and city owned facilities, including events conducted at the Redlands Bowl, provided such events are conducted pursuant to a permit or license issued by the city.

D. School Activities: This chapter shall not apply to activities and operations conducted on the grounds of any public or private elementary, intermediate or secondary school or colleges and universities.

E. Hospital: This chapter shall not apply to activities and operations conducted within the grounds of the Redlands Community Hospital provided that said activities and operations are in compliance with the acoustical provisions of the hospital's conditional use permit.

F. Minor Maintenance Of Residential Property: This chapter shall not apply to noise sources associated with the minor maintenance of residential property, provided such activities take place between the hours of seven o'clock (7:00) A.M. to eight o'clock (8:00) P.M. on weekdays, and seven o'clock (7:00) A.M. to eight o'clock (8:00) P.M. on weekends and legal holidays, and provided that such activities generate no more than ninety (90) dBA at or within the real property line of the residential property. Activities covered under this provision include, but are not limited to, maintenance of landscaping and minor repair of residential dwellings or ancillary structures.

G. Construction Activity: This chapter shall not apply to noise sources associated with new construction, remodeling, rehabilitation or grading of any property provided such activities take place between the hours of seven o'clock (7:00) A.M. and six o'clock (6:00) P.M. on weekdays, including Saturdays, with no activities taking place at any time on Sundays or federal holidays. All motorized equipment used in such activity shall be equipped with functioning mufflers.

H. Agricultural Operations: This chapter shall not apply to mobile noise sources associated with agricultural operations for use in maintenance, cultivation, planting and harvesting of agricultural areas provided said activities take place between the hours of seven o'clock (7:00) A.M. to eight o'clock (8:00) P.M. on weekdays, including Saturdays, with no activities taking place at any time on Sundays or federal holidays. All motorized equipment used in such activity shall be equipped with functioning mufflers.

I. Chapter Application: This chapter shall not apply to any activity in which state or federal law has preempted the regulation of such activity. (Ord. 2579 § 1, 2004)

8.06.130: PREEXISTING NOISE SOURCES:

Those commercial and industrial operations in existence prior to the date of adoption hereof, if in compliance with the city's zoning laws, may be granted a period from such date within which to comply with this chapter.

A. Such compliance period shall be based on the estimated cost to make the equipment comply, as follows:

1. If the cost is one thousand dollars ($1,000.00) or less, ninety (90) days;

2. If the cost is one thousand dollars ($1,000.00) to five thousand dollars ($5,000.00), one year;

3. If the cost is five thousand dollars ($5,000.00) to twenty thousand dollars ($20,000.00), two (2) years; or

4. If the cost is greater than twenty thousand dollars ($20,000.00) or more, three (3) years.

B. At the time of request for extended compliance periods in subsections A2 through A4 of this section, any person requesting such extension shall submit a plan for such compliance, including temporary mitigation of such noise levels to within five (5) dBA of the complying level. Such extended period and temporary mitigation shall not exceed one year beyond the initial compliance period. If the compliance period is granted, mitigation measures included in the plan must be completed within ninety (90) days from the date of approval of the compliance period.

C. If, at the end of the compliance period, it is shown that compliance with the provisions herein constitute a hardship in terms of technical and economical feasibility, additional applications for exception may be granted on an annual basis until such time as compliance may be effected, provided the temporary mitigation remains in place.

D. Requests for extended compliance periods or exceptions shall be submitted to the city's planning commission with the submittal of plans and other information as required by the community development director. Such applications shall be filed by the owner of the property affected thereby or the owner's authorized agent, with the community development director, on forms furnished by the director, which shall set forth fully the nature of the proposed use, and the facts sufficient to justify the granting of the compliance period in accordance with the provisions of this chapter.

E. The applicant shall furnish to the director an accurate list of the names and addresses of all property owners to whom notice must be given as provided in this chapter.

F. Each such application shall be accompanied by a filing and processing fee in the amount established by resolution of the city council. Any applicant may withdraw his application by filing a written request to do so at any time prior to final action thereon, provided that there shall be no refund of fees. (Ord. 2579 § 1, 2004)

8.06.140: VIOLATION; PENALTY:

A. It is illegal to use, occupy or maintain property in violation of this chapter.

B. Violation of this chapter shall be a misdemeanor, but may be prosecuted as either a misdemeanor or an infraction in the discretion of the city attorney.

C. Any person who violates the provisions of this chapter is guilty of a separate offense for each day, or portion thereof, during which the violation continues.

D. Violation of this chapter that threatens to be continuing in nature is a public nuisance which may be abated or enjoined in accordance with the law. (Ord. 2579 § 1, 2004)

CONSTRUCTION NOISE MODELING

Rus-13 Construction Noise Modeling Attenuation Calculations

Off-site Exterior Levels in dBA Leq

Phase	RCNM Reference Noise Level	Residence to south	Residences to west	Residences to northeast
Distance in feet	*50*	*475*	*500*	*1,000*
Site Preparation	80	60	60	54
Rough Grading	81	61	61	54
Fine Grading	81	61	61	54
Distance in feet	*50*	*NA*	*65*	*760*
Utility Trenching	81		79	58
Distance in feet	*50*	*190*	*240*	*850*
Building Construction	81	70	68	57
Architectural Coating	74	62	60	49
Distance in feet	*50*	*85*	*360*	*1250*
Asphalt Paving	77	72	60	49
Distance in feet	*50*	*190*	*600*	*970*
Asphalt Demolition	85	73	63	59

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

On-site Exterior Levels in dBA Leq

Phase	RCNM Reference Noise Level	Classrooms to east
Distance in feet	*50*	*750*
Site Preparation	80	56
Rough Grading	81	57
Fine Grading	81	57
Distance in feet	*50*	*750*
Utility Trenching	81	58
Distance in feet	*50*	*750*
Building Construction	81	58
Architectural Coating	74	50
Distance in feet	*50*	*750*
Asphalt Paving	77	53
Distance in feet	*50*	*750*
Asphalt Demolition	85	61

RUS-13 Vibration Annoyance Attenuation Calculations

Levels in VdB

Distance in feet	**Vibration @ 25 ft**	**Residences to south** *475*	**Residences to west** *500*	**Residences to northeast** *1000*
Clam shovel	94.0	56	55	46
Hoe Ram	87.0	49	48	39
Large Bulldozer	87.0	49	48	39
Caisson Drilling	87.0	49	48	39
Loaded Trucks	86.0	48	47	38
Jackhammer	79.0	41	40	31
Small Bulldozer	58.0	20	19	10

Distance in feet	*Vibration @ 25 ft*	**Residence to south** *130*	**Resiences to west** *400*	**Resiences to northeast** *280*
Vibratory Roller Paving	94.0	72.5	57.9	62.5

RUS-13 Vibration Annoyance Attenuation Calculations

Levels in in/sec PPV

Distance in feet	**Vibration Reference Level at *25 feet***	**Residential to south** *78*	**Residential to west** *250*	**Commercial to west** *250*
Vibratory Roller	0.21	0.038	0.007	0.007
Hoe Ram	0.089	0.016	0.003	0.003
Large Bulldozer	0.089	0.016	0.003	0.003
Caisson Drilling	0.089	0.016	0.003	0.003
Loaded Trucks	0.076	0.014	0.002	0.002
Jackhammer	0.035	0.006	0.001	0.001
Small Bulldozer	0.003	0.001	0.000	0.000

TRAFFIC NOISE INCREASE CALCULATIONS

RUS-13

Traffic Noise Calculations

	ADT Volumes				dBA CNEL Increae		
Roadway Segment	Existing No Project	Existing Plus Project	Future No Project	Future Plus Project	Project Noise Increase	Cumulative Increase	Project Cumulative Contribution
Colton Avenue							
West of Wabash Ave	6,000	6,360	6,600	6,960	0.3	0.6	0.2
Wabash to Opal	4,800	5,610	5,300	6,110	0.7	1.0	0.6
Opal to Beryl	5,200	6,240	5,700	6,740	0.8	1.1	0.7
Beryl to Agate	4,700	4,990	5,200	5,490	0.3	0.7	0.2
Agate to Crafton	3,800	4,090	4,200	4,490	0.3	0.7	0.3
East of Crafton	2,200	2,290	2,400	2,490	0.2	0.5	0.2
Mentone Boulevard							
West of Opal	20,000	20,270	22,100	22,370	0.1	0.5	0.1
Opal to Beryl	19,100	19,170	21,100	21,170	0.0	0.4	0.0
Beryl to Agate	18,300	18,340	20,200	20,240	0.0	0.4	0.0
East of Agate	17,400	17,490	19,200	19,290	0.0	0.4	0.0
Citrus Avenue							
West of Opal	3,000	3,180	3,300	3,480	0.3	0.6	0.2
Opal to Agate	3,300	3,320	3,600	3,620	0.0	0.4	0.0
East of Agate	3,200	3,290	3,500	3,590	0.1	0.5	0.1
Wabash Avenue							
North of Colton	7,900	8,170	8,700	8,970	0.1	0.6	0.1
South of Colton	6,600	6,780	7,300	7,480	0.1	0.5	0.1
Opal Avenue							
North of Mentone	2,300	2,320	2,500	2,520	0.0	0.4	0.0
Mentone to Colton	1,300	1,520	1,400	1,620	0.7	1.0	0.6
Colton to Citrus	1,600	1,820	1,800	2,020	0.6	1.0	0.5
South of Citrus	1,300	1,320	1,400	1,420	0.1	0.4	0.1
Beryl Avenue							
North of Mentone	1,900	1,920	2,100	2,120	0.0	0.5	0.0
Mentone to Colton	1,200	1,330	1,300	1,430	0.4	0.8	0.4
Agate Avenue							
North of Mentone	2,300	2,320	2,500	2,520	0.0	0.4	0.0
Mentone to Colton	1,900	1,970	2,100	2,170	0.2	0.6	0.1
Colton to Citrus	1,400	1,490	1,500	1,590	0.3	0.6	0.3
South of Citrus	1,000	1,020	1,100	1,120	0.1	0.5	0.1
Crafton Avenue							
North of Colton	6,800	6,980	7,500	7,680	0.1	0.5	0.1
South of Colton	6,700	6,720	7,400	7,420	0.0	0.4	0.0

SOUNDPLAN MODELING OUTPUTS

East Valley High School Redlands Stadium - RSPS0001.res: Single Point 1st Floor

Run info | Single receiver | Details + graphics | Sources

Receiver	Usage	Fl	Dir		Lr,lim	Lr,lim	Lr,lim	Ldn	**Leq,d**
				dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	**dB(A)**
R1 North	SCR	G						63.5	56.9
R10 Southwest	SCR	G						69.1	62.4
R11 Soutwest	SCR	G						67.9	61.2
R12 Southwest	SCR	G						66.3	59.6
R13 Southwest	SCR	G						64.9	58.2
R14 Southwest	SCR	G						63.5	56.9
R15 Southwest	SCR	G						67.0	60.4
R16 Southwest	SCR	G						64.7	58.0
R17 Southwest	SCR	G						63.9	57.2
R18 Southwest	SCR	G						62.7	56.0
R19 South	SCR	G						68.9	62.2
R2 North	SCR	G						62.0	55.3
R20 South	SCR	G						69.4	62.8
R21 South	SCR	G						69.7	63.0
R22 South	SCR	G						70.8	64.1
R23 South	SCR	G						70.5	63.9
R3 North	SCR	G						61.1	54.4
R4 North	SCR	G						60.1	53.4
R5 North	SCR	G						59.4	52.7
R6 North	SCR	G						58.6	51.9
R7 North	SCR	G						58.1	51.4
▶ R9 Southwest	SCR	G						70.5	63.8

East Valley High School Redlands Stadium - RSPS0003.res: Single Point 2nd Floor

Run info | Single receiver | Details + graphics | Sources

Receiver	Usage	Fl	Dir		Lr,lim	Lr,lim	Lr,lim	Ldn	Leq,d
				dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
R1 North	SCR	G						64.9	58.2
R2 North	SCR	G						63.4	56.7
R3 North	SCR	G						62.5	55.8
R4 North	SCR	G						61.5	54.9
R5 North	SCR	G						60.8	54.1
R6 North	SCR	G						60.1	53.4
R7 North	SCR	G						59.6	52.9
R8 North	SCR	G						59.0	52.4
R8 North	SCR	G						57.5	50.8
R9 Southwest	SCR	G						71.6	64.9
R10 Southwest	SCR	G						70.2	63.5
R11 Soutwest	SCR	G						69.0	62.4
R12 Southwest	SCR	G						67.5	60.8
R13 Southwest	SCR	G						66.2	59.5
R14 Southwest	SCR	G						64.9	58.2
R15 Southwest	SCR	G						68.2	61.5
R16 Southwest	SCR	G						65.9	59.2
R17 Southwest	SCR	G						65.2	58.5
R18 Southwest	SCR	G						64.0	57.4
R19 South	SCR	G						70.1	63.4
R20 South	SCR	G						70.7	64.0
R21 South	SCR	G						71.1	64.4
R22 South	SCR	G						72.2	65.5
R23 South	SCR	G						71.9	65.3

Appendix D Public Service Letters

Appendices

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November 23, 2021

San Bernardino County Sheriff's Department
Yucaipa Patrol Station
34144 Yucaipa Boulevard
Yucaipa, California 92399

Subject: Request for Service Provider Information for the Environmental Impact Report for the Redlands East Valley High School Stadium Project (RUS-13.0)

Dear Captain James Williams:

On behalf of the Redlands Unified School District (RUSD), PlaceWorks is preparing a Draft Environmental Impact Report (DEIR) for the Redlands East Valley High School Stadium project (proposed project). This letter is to request your assistance in updating information regarding existing fire-related services in the Mentone community of unincorporated San Bernardino County, and assessing potential impacts of the proposed project. Please respond to the enclosed questionnaire, using additional sheets if necessary. Note that your responses will become a part of the administrative record for this project and will be included as an appendix to the DEIR.

Project Location

Redlands East Valley HS is located at 31000 East Colton Avenue (Assessor's Parcel Map Numbers 0299-031-30) in unincorporated San Bernardino County, California (see Figure 1, Regional Location Map). The Redlands East Valley High School Stadium project (proposed project) would be developed within the existing school campus. Specifically, the proposed project would disturb approximately 6.95 acres of the western side of the approximately 60.1-acre campus (project site). The proposed project would not impact other areas of the campus.

Regional access to the Redlands East Valley HS campus is provided by State Route (SR) 38 located 0.5 miles north of the project site and Interstate 10 located approximately 3 miles west and south. Redlands East Valley HS is bounded by East Colton Avenue to the north, Opal Avenue to the west, King Street to the east, and agricultural uses to the south (see Figure 2, Aerial Photograph).

Existing Conditions

Redlands East Valley HS campus is approximately 60.1 acres in size. The main eastern portion of the campus is generally configured with classroom buildings and student, staff, and visitor parking lots. The western portion of the campus is configured with athletic fields and amenities, including baseball and softball fields, tennis courts, hard courts, a track and field, restrooms, and an additional student parking lot. Redlands East Valley High School was built in the mid-1990s and has a 2020-21 enrollment of 1,892 students in grades ninth through twelfth.

The project site is located on the western side of the Redlands East Valley High School campus and would encompasses existing sport fields, including football field and track and field, restrooms, hardcourts, parking lot, paved walkways, drainage way, utility infrastructure, and grassy areas. The project site is approximately 6.95 acres and is generally flat with a slope that runs along the eastern side of the project site. The football field is natural grass. The football field is surrounded by a clay track. The hardtop courts and parking lot are to the west of the track and field, along Opal Avenue.

Project Description

The proposed project would construct a new football stadium and track and field facilities and associated improvements to replace the existing football field and track facilities. The proposed project would demolish the existing track and field and regrade and recompact the project site to allow for the proper base and slope for the proposed improvements. The proposed project includes bleacher seating for 3,000 people, lighting, a home ticket booth and restroom/concession building, and visitor ticket booth and restroom/concession building. The proposed project would also include various improvements to landscaping, new chain-link fencing, access and circulation improvements, and emergency access improvements. (See Figure 3, Proposed Site Plan).

During the school year, the existing track and field are regularly used by the high school athletic practices, physical education classes, lower-level competition, and a variety of other scholastic-related events. The high school presently has no varsity events occur onsite. Currently, up to 30 Redlands East Valley HS events and games per season, including football and soccer games and track & field events, are held at other venues including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. Redlands East Valley HS currently hosts approximately 30 games/events per season onsite. Currently there is only one non-school related event that uses the stadium, a fundraiser walk, which occurs once per year. Occasional joggers and walkers use the track and field. Upon completion of the proposed project, off-site games/events would be relocated to the project site. The proposed project would host approximately 60 games/events per season. No new events/games are proposed as part of the proposed project.

Construction of the proposed project would occur over three phases and the project site will be open for track and field events following the completion of phase 1, and full use of proposed project will be open following the completion of phase 2.

Discretionary Actions

The proposed project would include the following discretionary actions: (1) certification of the environmental document and (2) approval of the proposed project.

Please respond to PlaceWorks no later than **December 14, 2021.** If you need additional time to respond, please let me know as soon as possible. You can email your responses to me at mzimmermann@placeworks.com. If you prefer, mail the completed questionnaire to my attention at 700 South Flower Street, Suite 600, Los Angeles, California 90017. Feel free to contact me at 714.966.9220 or via the aforementioned email. Thank you for your prompt attention to this request.

Sincerely,

PLACEWORKS

Mariana Zimmermann
Associate

Enclosures:
Questionnaire
Figure 1 Regional Location Map
Figure 2 Aerial Photograph
Figure 3 Site Plan

Redlands East Valley High School Stadium Project
Police Services Questionnaire – San Bernardino County Sheriff's Department

1. Please provide the information requested below regarding staffing for the police services for the Project Site, as well as any other station(s) not noted but pertinent.

Station	Location	Daily Staffing	Total Staffing	Equipment
Yucaipa Patrol Station	34144 Yucaipa Boulevard Yucaipa, California 92399	1	6	# patrol cars 5 #motorcycles
Other stations or smaller office facilities? (if relevant) SRO	REV	1	1	1

2. What is San Bernardino County Sheriff's Department's response time goal/policy standard (in minutes) for responding to emergency and non-emergency calls in the service area?

NO DEPARTMENT GOAL OR POLICY STANDARD FOR RESPONSE TIMES

3. What is San Bernardino County Sheriff's Department's current average response time (in minutes) for emergency and non-emergency calls?

EMERGENCY 4.5 MIN
NON-EMERGENCY 12.15 MIN

4. Are there any existing deficiencies (personnel, equipment, facilities) in the police protection service currently provided to the project site?

NO

5. Any plans for new Sheriff's stations near the project site?

NO

6. Given the existing level of resources (stations, equipment, personnel), does the San Bernardino County Sheriff's Department anticipate that it will have adequate resources to meet the additional demands that would be generated by the Proposed Project?

YES

If not, please summarize any additional resources that would be needed.

7. What impact (if any) other than increased service calls will the Proposed Project have on San Bernardino County Sheriff's Department's ability to provide police protection service to the Project Area?

NONE

8. What are the primary sources of funding for San Bernardino County Sheriff's Department operations and improvements?

PROPERTY AND SALES TAX

Will the proposed project be responsible for any police impact fees? If yes, who collects the fees?

NO

9. Does the San Bernardino County Sheriff's Department have any design guidelines or programs pertaining to reducing and/or preventing crimes through environmental design? If yes, please provide the guidelines and/or program procedure.

NO WRITTEN POLICY

10. Please provide any additional comments you wish to make regarding the Proposed Project.

Response Prepared By:

James Williams, Captain

Name **Title**

SAN BERNARDINO COUNTY SHERIFF'S DEPT. 12-1-21

Agency **Date**

November 23, 2021

San Bernardino County Fire Department
Mentone – Station 9
1300 Crafton Ave.
Mentone, CA 92359

Subject: Request for Service Provider Information for the Environmental Impact Report for the Redlands East Valley High School Stadium Project (RUS-13.0)

Dear Assistant Chief Dan Mejia:

On behalf of the Redlands Unified School District (RUSD), PlaceWorks is preparing a Draft Environmental Impact Report (DEIR) for the Redlands East Valley High School Stadium project (proposed project). This letter is to request your assistance in updating information regarding existing fire-related services in the Mentone community of unincorporated San Bernardino County, and assessing potential impacts of the proposed project. Please respond to the enclosed questionnaire, using additional sheets if necessary. Note that your responses will become a part of the administrative record for this project and will be included as an appendix to the DEIR.

Project Location

Redlands East Valley HS is located at 31000 East Colton Avenue (Assessor's Parcel Map Numbers 0299-031-30) in unincorporated San Bernardino County, California (see Figure 1, Regional Location Map). The Redlands East Valley High School Stadium project (proposed project) would be developed within the existing school campus. Specifically, the proposed project would disturb approximately 6.95 acres of the western side of the approximately 60.1-acre campus (project site). The proposed project would not impact other areas of the campus.

Regional access to the Redlands East Valley HS campus is provided by State Route (SR) 38 located 0.5 miles north of the project site and Interstate 10 located approximately 3 miles west and south. Redlands East Valley HS is bounded by East Colton Avenue to the north, Opal Avenue to the west, King Street to the east, and agricultural uses to the south (see Figure 2, Aerial Photograph).

Existing Conditions

Redlands East Valley HS campus is approximately 60.1 acres in size. The main eastern portion of the campus is generally configured with classroom buildings and student, staff, and visitor parking lots. The western portion of the campus is configured with athletic fields and amenities, including baseball and softball fields, tennis courts, hard courts, a track and field, restrooms, and an additional student parking lot. Redlands East Valley High School was built in the mid-1990s and has a 2020-21 enrollment of 1,892 students in grades ninth through twelfth.

The project site is located on the western side of the Redlands East Valley High School campus and would encompasses existing sport fields, including football field and track and field, restrooms, hardcourts, parking lot, paved walkways, drainage way, utility infrastructure, and grassy areas. The project site is approximately 6.95 acres and is generally flat with a slope that runs along the eastern side of the project site. The football field is natural grass. The football field is surrounded by a clay track. The hardtop courts and parking lot are to the west of the track and field, along Opal Avenue.

Project Description

The proposed project would construct a new football stadium and track and field facilities and associated improvements to replace the existing football field and track facilities. The proposed project would demolish the existing track and field and regrade and recompact the project site to allow for the proper base and slope for the proposed improvements. The proposed project includes bleacher seating for 3,000 people, lighting, a home ticket booth and restroom/concession building, and visitor ticket booth and restroom/concession building. The proposed project would also include various improvements to landscaping, new chain-link fencing, access and circulation improvements, and emergency access improvements. (See Figure 3, Proposed Site Plan).

During the school year, the existing track and field are regularly used by the high school athletic practices, physical education classes, lower-level competition, and a variety of other scholastic-related events. The high school presently has no varsity events occur onsite. Currently, up to 30 Redlands East Valley HS events and games per season, including football and soccer games and track & field events, are held at other venues including Beaumont High School, Yucaipa Community Park, Citrus Valley High School, and Redlands High School. Redlands East Valley HS currently hosts approximately 30 games/events per season onsite. Currently there is only one non-school related event that uses the stadium, a fundraiser walk, which occurs once per year. Occasional joggers and walkers use the track and field. Upon completion of the proposed project, off-site games/events would be relocated to the project site. The proposed project would host approximately 60 games/events per season. No new events/games are proposed as part of the proposed project.

Construction of the proposed project would occur over three phases and the project site will be open for track and field events following the completion of phase 1, and full use of proposed project will be open following the completion of phase 2.

Discretionary Actions

The proposed project would include the following discretionary actions: (1) certification of the environmental document and (2) approval of the proposed project.

Please respond to PlaceWorks no later than **December 14, 2021.** If you need additional time to respond, please let me know as soon as possible. You can email your responses to me at mzimmermann@placeworks.com. If you prefer, mail the completed questionnaire to my attention at 700 South Flower Street, Suite 600, Los Angeles, California 90017. Feel free to contact me at 714.966.9220 or via the aforementioned email. Thank you for your prompt attention to this request.

Sincerely,

PLACEWORKS

Mariana Zimmermann
Associate

Enclosures:
Questionnaire
Figure 1 Regional Location Map
Figure 2 Aerial Photograph
Figure 3 Site Plan

Redlands East Valley High School Stadium Project
Fire Services Questionnaire – San Bernardino County Fire Department

1. Please confirm that the nearest fire station closest to and that serve the Project Site is San Bernardino County Fire Department County Fire Department's Mentone Station #9. What other stations will serve the Project Site in case of fire?

   Are there any service agreements with other local or regional fire agencies (other than San Bernardino County Fire Department County Fire Department) for additional support?

   Please fill in the information requested below regarding the equipment (e.g., engines, fire trucks, EMT vehicles) and daily staffing for each of the stations noted, as well as any other station(s) not noted but pertinent.

Station	Location	Equipment	Daily Staffing
Mentone – Station 9	1300 Crafton Ave. Mentone, CA 92359		
Other Station: *(if relevant)*			

2. What is San Bernardino County Fire Department County Fire Department's response time goal/policy standard (in minutes) for responding to emergency and non-emergency calls in the service area? What is the current average response time?

3. Are there any existing deficiencies (personnel, equipment) in the fire protection service currently provided to the Project Site?

4. Any existing plans for fire service facilities or expanded capacity (personnel, equipment, station) that would serve the Project Site?

5. What impact (if any) will the Proposed Project have on San Bernardino County Fire Department County Fire Department's ability to provide fire protection and emergency service to the planning area?

6. What are the primary sources of funding for San Bernardino County Fire Department County Fire Department operations and improvements? Do you collect development impact fees?

7. Please provide any additional comments you wish to make regarding the Proposed Project.

Responses Prepared By:

Name	**Title**
Agency	**Date**

Alen Estrada-Rodas

From: Mejia, Daniel <DMejia@SBCFire.org>
Sent: Sunday, January 2, 2022 8:25 PM
To: Alen Estrada-Rodas
Subject: Re: REV High School Stadium Project - SB County Fire Dept.

Sorry for the delay, we are dealing with staffing issue due to the COVID surge. The answers to your questionnaire

1. Station 9 is the closest station to the project. Redlands Fire assists County Fire in the area. Station 228 from San Bernardino will also respond to the area. County Fire presently has an automatic aid agreement with Redlands Fire and in the final stages of completing an automatic agreement with Highland. Once completed Highland will also be responding in the area. ME 9 is staffed with 3 personnel (captain, engineer and firefighter/paramedic). They respond on a type 1 Fire engine or a type 3 brush engine. Redlands Fire responds on a type 1 Fire engine staffed with 3 personnel.
2. It will take a couple of weeks to get the average response times for the project. Our goal is 7 1/2 minutes
3. None
4. No
5. County Fire on some projects collects DIF, not on this project
6. Property tax and Fire tax
7. We don't see any issues at this point with delivering service to he proposed project.

You can contact me at 760-927-9298

Get Outlook for iOS

From: Alen Estrada-Rodas <aestradarodas@placeworks.com>
Sent: Wednesday, December 29, 2021 11:50:13 AM
To: Mejia, Daniel <DMejia@SBCFire.org>
Cc: Mariana Zimmermann <mzimmermann@placeworks.com>
Subject: RE: REV High School Stadium Project - SB County Fire Dept.

Good afternoon Assistant Chief Mejia,

I just wanted to check in and see if you had a chance to review the letter and questionnaire that was sent last week. Please let me know if you have any questions.

Thank you,

ALEN ESTRADA-RODAS
Associate II
Los Angeles: 213.623.1443 ext. 2107 | cell: 818.497.0584

From: Mejia, Daniel <DMejia@SBCFire.org>
Sent: Thursday, December 23, 2021 7:20 AM
To: Alen Estrada-Rodas <aestradarodas@placeworks.com>
Cc: Mariana Zimmermann <mzimmermann@placeworks.com>
Subject: Re: REV High School Stadium Project - SB County Fire Dept.

Thank you, and we will response to the questionnaire. Sorry for the delay.

Get Outlook for iOS

From: Alen Estrada-Rodas <aestradarodas@placeworks.com>
Sent: Wednesday, December 22, 2021 4:03:08 PM
To: Mejia, Daniel <DMejia@SBCFire.org>
Cc: Mariana Zimmermann <mzimmermann@placeworks.com>
Subject: REV High School Stadium Project - SB County Fire Dept.

Good afternoon Assistant Chief Mejia,

We would like to inform you that the Redland Unified School District intends to construct a new football stadium and track & field facilities at Redlands East Valley (REV) High School, to replace the existing football field and track facilities.

On behalf of the School District, PlaceWorks is preparing a Draft Environmental Impact Report, and would like to request your assistance in updating information regarding existing fire-related services in the Mentone community of unincorporated San Bernardino County, and assessing potential impacts of the proposed project.

We mailed a letter to the department on November 23, 2021; however, we have not received a response.
Please see the attached letter that provides an overview of the proposed project, and respond to the enclosed questionnaire, at your earliest convenience.
Note that your responses will become a part of the administrative record for this project and will be included as an appendix to the DEIR.

Please let us know if you have any questions.

Thank you and Happy Holidays!

ALEN ESTRADA-RODAS
Associate II

PLACEWORKS
Los Angeles: 213.623.1443 ext. 2107 | cell: 818.497.0584
aestradarodas@placeworks.com | placeworks.com

Please note that our offices will be closed December 24th through January 3rd for the holidays.

Appendix E Traffic Impacts Assessment

Appendices

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TRAFFIC AND PARKING IMPACT ANALYSIS

FOR THE PROPOSED

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

Prepared for

REDLANDS UNIFIED SCHOOL DISTRICT
&
PLACEWORKS

Prepared by

GARLAND ASSOCIATES
16787 Beach Boulevard, Suite 234
Huntington Beach, CA 92647
714-330-8984

JANUARY 2022

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I.
INTRODUCTION AND STUDY METHODOLOGY

This report summarizes the results of a traffic and parking impact analysis that was conducted for a new track and field/football stadium proposed at Redlands East Valley High School. The high school campus is located on the south side of Colton Avenue between Opal Avenue and King Street in an unincorporated area of San Bernardino County immediately east of Redlands. The stadium would be located at the west end of the campus near the intersection of Colton Avenue and Opal Avenue.

The proposed project involves the construction of the stadium, bleachers with seats for 3,000 people, stadium lighting, two ticket booth/custodial/restrooms/concession buildings, and improvements to the adjacent parking lot. Site plans for each of the three phases of the proposed project are provided in the Appendix. The proposed project would not result in a change in the number of students attending the high school. The stadium would provide the opportunity for Redlands East Valley High School to hold home games at its own campus.

An analysis has been prepared to evaluate the traffic and parking impacts of the proposed project. The methodology for the traffic study, in general, was to 1) establish the existing baseline traffic conditions on the streets that provide access to the school site, 2) project the future baseline traffic conditions for the target year of completion for the proposed project (year 2026), 3) estimate the levels of traffic that would be generated by the stadium for a capacity-level event, 4) conduct a comparative analysis of traffic conditions with and without the stadium, 5) evaluate the vehicle miles traveled (VMT) impacts of the proposed stadium, and 6) evaluate the parking supply and demand during a stadium event. The stadium analysis is based on Friday evening traffic conditions on the streets and intersections in the proposed project vicinity.

The traffic analysis addresses the impacts at 10 intersections in the vicinity of the school site. The study area intersections, the type of traffic control at each intersection, and the public agency with jurisdictional responsibility for the intersection are listed below in Table 1.

TABLE 1
STUDY AREA INTERSECTIONS

Intersection	***Traffic Control***	***Jurisdiction***
Mentone Blvd/Opal Avenue	Stop Signs on Opal Ave	Caltrans
Mentone Blvd/Beryl Avenue	Stop Signs on Beryl Ave	Caltrans
Mentone Blvd/Agate Avenue	Stop Signs on Agate Ave	Caltrans
Colton Avenue/Wabash Avenue	4-Way Stop Signs	Redlands/San Bernardino County
Colton Avenue/Opal Avenue	4-Way Stop Signs	San Bernardino County
Colton Avenue/Beryl Avenue-School Driveway	4-Way Stop Signs	San Bernardino County
Colton Avenue/Agate Avenue-King Street	4-Way Stop Signs	San Bernardino County
Colton Avenue/Crafton Avenue	4-Way Stop Signs	San Bernardino County
Citrus Avenue/Opal Avenue	4-Way Stop Signs	San Bernardino County
Citrus Avenue/King Street	4-Way Stop Signs	San Bernardino County

The traffic impact analysis is based on an evaluation of the levels of service at the affected study area intersections. Level of service (LOS) is an industry standard by which the operating conditions

of a roadway segment or an intersection are measured. LOS is defined on a scale of A through F with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS A is characterized as having free flowing traffic conditions with no restrictions on maneuvering or operation speeds, where traffic volumes are low and travel speeds are high. LOS F is characterized as having forced flow with many stoppages and low operating speeds. According to San Bernardino County standards, LOS A through D represents acceptable conditions, while LOS E and F represent congested, over-capacity conditions. According to the San Bernardino County Congestion Management Program, LOS A through E represents acceptable conditions while LOS F represents unacceptable conditions. The levels of service at the study area intersections were determined by using the Highway Capacity Manual methodology, which is consistent with the guidelines for traffic impact studies from the San Bernardino County Congestion Management Program.

The levels of service for the intersections in the vicinity of the proposed project were analyzed for the following scenarios: existing conditions (2021), existing conditions plus the proposed project, future baseline conditions without the proposed project for the target year of 2026, and future conditions with the proposed project. The year 2026 was used for the future target year as that is anticipated to be the year of completion for the third and final phase of the proposed project.

II.
EXISTING AND FUTURE BASELINE TRAFFIC CONDITIONS

The roadway network in the proposed project vicinity, the existing traffic volumes, and the levels of service at the affected study area intersections are described below.

Street Network

The streets that provide access to the proposed project area include Colton Avenue, Opal Avenue, King Street, Agate Avenue, Beryl Avenue, Mentone Boulevard (State Route 38), Citrus Avenue, Wabash Avenue, and Crafton Avenue. The following paragraphs provide a brief description of the characteristics of these streets. A figure showing the existing roadway characteristics is provided as Figure 1 in the Appendix.

Colton Avenue

Colton Avenue is a two to four lane east-west street that abuts the north side of the school campus. It has four lanes west of Agate Avenue/King Street, three lanes between Agate Avenue and Crafton Avenue (one eastbound and two westbound), and two lanes east of Crafton Avenue. The speed limit on Colton Avenue is 35 miles per hour and there are three school access driveways on Colton Avenue.

Opal Avenue

Opal Avenue is a two lane north-south street that abuts the west side of the school campus. It runs along the west side of the stadium site. The speed limit on Opal Avenue is 35 miles per hour and there is a driveway on Opal Avenue that provides access to a parking lot.

King Street/Agate Avenue

King Street/Agate Avenue is a two lane north-south street that abuts the east side of the school campus. This street is called King Street south of Colton Avenue and Agate Avenue north of Colton Avenue. The speed limit on King Street/Agate Avenue is 25 miles per hour and there are two school access driveways on King Street.

Beryl Avenue

Beryl Avenue is a two lane north-south street that extends north from the school's main driveway. The driveway is the south leg of the Beryl Avenue/Colton Avenue intersection. The speed limit on Beryl Avenue is 25 miles per hour.

Mentone Boulevard (State Route 38)

Mentone Boulevard is a two lane east-west State highway that is located one-half mile north of the school campus. The speed limit on Mentone Boulevard is 40 miles per hour.

Citrus Avenue

Citrus Avenue is a two lane east-west street located one-quarter mile south of the school campus. The speed limit on Citrus Avenue is 45 miles per hour.

Wabash Avenue

Wabash Avenue is a four lane north-south street located one-quarter mile west of the school campus. The speed limit on Wabash Avenue is 40 miles per hour.

Crafton Avenue

Crafton Avenue is a two lane north-south street located one-quarter mile east of the school campus. The speed limit on Crafton Avenue is 35 miles per hour.

Existing Traffic Volumes

Manual traffic counts were taken at the 10 study area intersections during the Friday evening peak period on November 12, 2021. The peak hour for this analysis refers to the one-hour time period prior to the beginning of an event at the stadium when patrons are traveling to the stadium. The traffic analysis addresses the pre-event time period because the ambient traffic volumes are substantially higher during the pre-event period (generally between 6:00 and 7:00 p.m.) as compared to the post-event period (after 9:00 p.m.). Most high school football games in this district begin at 7:00 p.m. A figure that illustrates the existing peak hour traffic volumes and turning movements is provided as Figure 2 in the Appendix.

Existing Intersection Levels of Service

To quantify the existing baseline traffic conditions, the 10 study area intersections were analyzed to determine their operating conditions during the Friday evening peak hour. Based on the hourly traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the average vehicle delay values and corresponding levels of service have been determined for each intersection, as summarized in Table 2.

TABLE 2
EXISTING AND FUTURE INTERSECTION LEVELS OF SERVICE

	Delay Value (seconds/vehicle) & Level of Service Friday Evening Pre-Event Peak Hour	
Intersection	***Existing Conditions***	***2026 Without Project***
Mentone Blvd/Opal Avenue	17.8 – C	21.0 – C
Mentone Blvd/Beryl Avenue	18.8 – C	22.5 – C
Mentone Blvd/Agate Avenue	24.5 – C	30.2 – D
Colton Avenue/Wabash Avenue	9.92 – A	10.38 – B
Colton Avenue/Opal Avenue	7.97 – A	8.10 – A
Colton Avenue/Beryl Avenue-School Driveway	7.99 – A	8.10 – A
Colton Avenue/Agate Avenue-King Street	7.86 – A	7.97 – A
Colton Avenue/Crafton Avenue	9.98 – A	10.50 – B
Citrus Avenue/Opal Avenue	7.70 – A	7.81 – A
Citrus Avenue/King Street	7.87 – A	7.97 – A

The levels of service shown in Table 2 are based on the average vehicle delay values that were calculated for each intersection using the Highway Capacity Software. The relationship between the average delay values and levels of service is shown in Table 3.

TABLE 3
RELATIONSHIP BETWEEN DELAY VALUES & LEVELS OF SERVICE

Level of Service	***Delay Value (seconds) Unsignalized Intersections***
A	0.0 to 10.0
B	> 10.0 to 15.0
C	> 15.0 to 25.0
D	> 25.0 to 35.0
E	> 35.0 to 50.0
F	> 50.0

As shown in Table 2, all 10 of the study area intersections currently operate at acceptable levels of service (LOS A through D) during the Friday evening peak hour. Seven intersections operate at LOS A and three intersections operate at LOS C. It should be noted that the delay and LOS values for the intersections with 4-way stop signs represent the average for the entire intersection while the delay and LOS values for the intersections with 2-way stop signs represent the intersection approach that has the highest level of delay at the stop sign.

Future Baseline Traffic Conditions

As the proposed project is expected to be fully completed in the year 2026, the existing (2021) traffic volumes were expanded by a growth factor of 10.4 percent to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area. This growth factor represents a two percent annual growth rate for five years (compounded annually). The projected traffic volumes for the year 2026 without the proposed project are shown on Figure 3 in the Appendix.

Based on the projected peak hour traffic volumes, the turning movement counts, and the existing lane configuration, the future baseline levels of service were calculated for each study area intersection, as summarized in Table 2.

For the target year of 2026, all 10 of the study area intersections are projected to operate at acceptable levels of service (LOS A through D) as five of the intersections would operate at LOS A, two intersections would operate at LOS B, two intersections would operate at LOS C, and one intersection would operate at LOS D. These traffic conditions represent a Friday evening pre-event peak hour.

III.
TRAFFIC IMPACT ANALYSIS

This section summarizes the analysis of the proposed project's impacts on study area traffic conditions. First is a discussion of project generated traffic volumes. This is followed by an analysis of the impacts of the proposed project on traffic volumes and intersection levels of service. Then the impacts associated with vehicle miles traveled (VMT), construction, parking, and safety are presented.

Standards of Significance

According to the San Bernardino County standards, an intersection would be significantly impacted if a project would result in a change in the level of service from an acceptable LOS A, B, C, or D to an unacceptable LOS E or F. The impacts would not be significant at locations that are projected to operate at LOS A, B, C, or D after project completion. According to the Caltrans standards, Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, an acceptable measure of effectiveness (MOE) should be maintained.

With regard to the CEQA thresholds of significance, Appendix G of the CEQA Guidelines state that a project would normally have a significant effect on the environment if the project could:

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities,

T-2 Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT),

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), or

T-4 Result in inadequate emergency access.

Project Generated Traffic

The volume of traffic that would be generated by the stadium for a capacity-level event was determined in order to estimate the impacts of the proposed project on the study area streets and intersections. The trip generation rates and the anticipated volumes of traffic that would be generated by the stadium when operated at capacity are shown in Table 4. The table shows the traffic volumes for a 3,000-seat stadium.

The trip generation rates shown in Table 4 reflect the assumption that the stadium would generate a demand of one vehicle for every four seats (for vehicles that remain parked at the site) and that an additional ten percent of the vehicles arriving at the stadium would drop passengers off then leave. The rate of one vehicle for every four seats is based on the parking requirements for places of public assembly from the City of Redlands Municipal Code, which is one space per five fixed seats, and the parking requirement for stadiums according to San Bernardino County, which is one

space for every three seats. The average of these two parking requirements is one space for every four seats.

TABLE 4
PROJECT GENERATED TRAFFIC

Facility	Evening Hour – Pre-Event			Daily Traffic
	Inbound	Outbound	Total	
TRIP GENERATION RATES				
Stadium (vehicle trips per seat)	0.275	0.025	0.30	0.60
GENERATED TRAFFIC VOLUMES				
Stadium (3,000 seats)	825	75	900	1,800

Table 4 indicates that the 3,000-seat stadium would generate an estimated 900 vehicle trips during the peak hour (825 inbound and 75 outbound). The peak hour for this analysis represents the one-hour time period prior to the beginning of an event at the stadium when patrons are traveling to the stadium. Approximately the same level of traffic would be generated at the end of an event when patrons are exiting (with the inbound and outbound traffic volumes reversed). The stadium may also generate traffic at other times of the day; however, such traffic activity would be minor as compared to a capacity-level event represented by the traffic volumes shown in Table 4. The estimated daily traffic volume generated by the stadium on the day of a capacity-level event would be 1,800 vehicle trips per day.

To quantify the increase in traffic at each intersection resulting from an event at the proposed stadium, the project generated traffic was geographically distributed onto the street network using the directional percentages shown on Figure 4 in the Appendix. This distribution assumption is based on the layout of the existing street network, the school attendance boundaries, and the anticipated geographical distribution of the event patrons.

Using the generated traffic volumes shown in Table 4 and the geographical distribution assumptions outlined above, the volumes of proposed project traffic on each access street and at each study area intersection were determined for the traffic impact analysis. The volumes of site generated traffic that would be generated by the 3,000-seat stadium are shown on Figure 4 in the Appendix.

The volumes of traffic for the existing conditions scenario plus the project generated traffic are shown on Figure 5 and the total volumes of traffic projected for the year 2026 scenario with the proposed stadium are shown on Figure 6. These projected traffic volumes are for the Friday evening pre-event peak hour.

Intersection Impact Analysis

The impact analysis for the 10 study area intersections was conducted by comparing the delay values and levels of service (LOS) for the "without project" and "with project" scenarios. For the existing conditions scenario, the analysis compares the existing conditions to the conditions with the proposed project. Similarly, for the year 2026 scenario, the analysis compares the year 2026 baseline conditions without the proposed project to the year 2026 scenario with the proposed

project. The year 2026 was used as the target year for future conditions as that is anticipated to be the year that all three phases of the proposed project would be completed. The peak hour for the analysis represents the time period during which the stadium would generate the heaviest volumes of traffic (typically between 6:00 and 7:00 p.m.), which does not coincide with the peak period for the ambient traffic volumes, which generally occurs between 4:00 and 6:00 p.m.

The comparative levels of service at the study area intersections for the existing conditions scenario are summarized in Table 5 for the Friday evening peak hour. The table shows the before and after delay values and the levels of service that would occur at each study area intersection. Also shown are the increases in the delay values that would occur as a result of the proposed project. The last column in Table 5 indicates if the intersections would be significantly impacted by the project generated traffic.

The intersection of Mentone Boulevard and Opal Avenue, for example, would operate with an average delay value of 17.8 seconds per vehicle and LOS C for existing conditions and with an average delay value of 28.0 seconds and LOS D for the existing plus project scenario, which represents an increase in average delay of 10.2 seconds per vehicle. This impact would be less than significant according to the criteria outlined above because the intersection would continue to operate at an acceptable LOS D. Table 5 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for the existing conditions baseline scenario.

TABLE 5
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
EXISTING CONDITIONS AS BASELINE

	Delay Value & Level of Service			
Intersection	***Existing Conditions***	***Existing plus Project***	***Increase In Delay Value***	***Significant Impact***
Mentone Blvd/Opal Avenue	17.8 – C	28.0 – D	10.2	No
Mentone Blvd/Beryl Avenue	18.8 – C	23.5 – C	4.7	No
Mentone Blvd/Agate Avenue	24.5 – C	27.0 – D	2.5	No
Colton Avenue/Wabash Avenue	9.92 – A	13.28 – B	3.36	No
Colton Avenue/Opal Avenue	7.97 – A	11.51 – B	3.54	No
Colton Avenue/Beryl Avenue-School Driveway	7.99 – A	15.26 – C	7.27	No
Colton Avenue/Agate Avenue-King Street	7.86 – A	8.56 – A	0.70	No
Colton Avenue/Crafton Avenue	9.98 – A	10.32 – B	0.34	No
Citrus Avenue/Opal Avenue	7.70 – A	8.13 – A	0.43	No
Citrus Avenue/King Street	7.87 – A	8.06 – A	0.19	No

The comparative levels of service for the year 2026 analysis scenario are shown in Table 6. Table 6 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for the year 2026 baseline scenario.

TABLE 6
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
YEAR 2026 AS BASELINE

	Delay Value & Level of Service			
Intersection	***2026 Without Project***	***2026 With Project***	***Increase In Delay Value***	***Significant Impact***
Mentone Blvd/Opal Avenue	21.0 – C	34.6 – D	13.6	No

Mentone Blvd/Beryl Avenue	22.5 – C	29.3 – D	6.8	No
Mentone Blvd/Agate Avenue	30.2 – D	34.3 – D	4.1	No
Colton Avenue/Wabash Avenue	10.38 – B	14.18 – B	3.80	No
Colton Avenue/Opal Avenue	8.10 – A	11.84 – B	3.74	No
Colton Avenue/Beryl Avenue-School Driveway	8.10 – A	16.15 – C	8.05	No
Colton Avenue/Agate Avenue-King Street	7.97 – A	8.69 – A	0.72	No
Colton Avenue/Crafton Avenue	10.50 – B	10.91 – B	0.41	No
Citrus Avenue/Opal Avenue	7.81 – A	8.26 – A	0.45	No
Citrus Avenue/King Street	7.97 – A	8.18 – A	0.21	No

Tables 5 and 6 indicate that the proposed project would not have a significant impact at any of the study area intersections during the evening peak hour based on the significance criteria presented previously because the intersections would continue to operate at LOS D or better. As there would be no significant impacts, no capacity-related mitigation measures would be required. It should be noted that this conclusion is based on the assumption that an event would begin at 7:00 p.m. If a capacity-level event were scheduled to begin at 6:00 p.m. on a Monday through Friday, the site-generated traffic would coincide with the peak commuter traffic and the event would likely result in a significant impact.

The traffic impacts associated with the stadium would not occur on a daily basis but would occur only when a major event were to be held at the facility, which is typically a high school football game. Such events would occur on a Thursday or Friday evening or on a Saturday afternoon on approximately five to six occasions throughout the year. The analysis addresses the Friday evening scenario because the ambient traffic volumes would typically be higher on Friday as compared to Thursday evening or Saturday afternoon.

In addition to the capacity-level high school events that would be held at the stadium in the fall (primarily football games), the stadium would also be used for track and field events, soccer matches and practice, band activities, and possibly Pop Warner football. As the attendance at these activities would be substantially lower than the capacity-level events that were addressed in the traffic analysis above, it is concluded that such activities would result in a less than significant traffic impact. It is anticipated that there would be approximately 60 events per year, most of which would have relatively minor attendance levels typically ranging from 100 to 200 spectators.

For purposes of comparison to a capacity-level event, the traffic generation levels for an event with 100 and 200 spectators were calculated, as shown in Table 7. A 100-spectator event would generate an estimated 30 trips during the peak arrival time and 60 total daily trips. A 200-spectator event would generate 60 trips during the peak arrival time and 120 total daily trips. These traffic volumes are negligible as compared to the level of traffic that would be generated by a capacity-level event at the stadium.

TABLE 7
GENERATED TRAFFIC FOR MINOR EVENTS

Facility	***Peak Hour – Pre-Event***			***Daily Traffic***
	Inbound	***Outbound***	***Total***	
TRIP GENERATION RATES				
Stadium (vehicle trips per seat)	0.275	0.025	0.30	0.60
GENERATED TRAFFIC VOLUMES				
Stadium				
100 spectators	27	3	30	60
200 spectators	55	5	60	120

Construction Traffic Impacts

Construction of the proposed stadium would generate various levels of truck and automobile traffic throughout the duration of the construction period. The construction-related traffic includes construction workers traveling to and from the site as well as trucks hauling construction materials to the site and demolition/excavation material away from the site. The construction activities would generate an estimated 50 to 60 workers' trips per day and approximately 20 to 30 truck trips per day. The truck trips would be spread out throughout the workday and would generally occur during non-peak traffic periods. This level of construction-related traffic would not result in a significant traffic impact on the study area roadway network as it would be negligible compared to the volumes of traffic currently generated by the existing high school.

Congestion Management Program

According to the "Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County" (from the San Bernardino County Congestion Management Program), the minimum level of service standard for the CMP system of highways and roadways is LOS E. There is one CMP arterial roadway in the immediate vicinity of the proposed project site: Mentone Boulevard (State Route 38). The traffic analysis summarized above indicates that the three most-directly affected intersections on Mentone Boulevard would operate at LOS D for the "2026 with project" scenario, which is better than the CMP standard of LOS E. The project generated traffic would not, therefore, result in a significant impact on the CMP roadway network. It should also be pointed out that the evaluation of a development project is typically based on the impacts of the project during the morning and/or afternoon commuter peak periods; i.e., from 7:00 to 9:00 a.m. and/or from 4:00 to 6:00 p.m. The proposed project would have negligible impacts during the morning or afternoon peak commuter periods because the peak stadium traffic would occur between 6:00 and 7:00 p.m., which is outside the afternoon commuter peak periods that are addressed in the CMP. The proposed project would not, therefore, exceed a level of service standard established by the county congestion management agency.

Non-Motorized Transportation and Transit

The proposed project would generate a demand for non-motorized travel as some event patrons would travel to and from the school as pedestrians or on bicycles. The streets adjacent to the school have sidewalks along one or both sides of the street and the intersections along the Colton Avenue

frontage of the school are equipped with four-way stop signs and painted crosswalks. Bike racks are available at the school and bus loading/unloading zones are provided on site.

With regard to public transit, Omnitrans operates Line 8 in the vicinity of the school site on Mentone Boulevard and Crafton Avenue. The proposed project would not adversely affect the performance of these transit or non-motorized transportation facilities and would not conflict with any plans or policies relative to these transportation modes.

The proposed project would be consistent with policies supporting alternative transportation because busing would typically be provided from the opposing schools during football games and bike racks are currently provided at the school. The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Vehicle Miles Traveled (VMT)

The CEQA Guidelines state that projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact. The events and activities that would occur at the proposed stadium are currently held at Citrus Valley High School or at Redlands High School if the field at Citrus Valley High School is not available. These schools are outside the attendance area of Redlands East Valley High School.

Citrus Valley High School is located 4.9 miles northwest of Redlands East Valley High School (as measured along the travel routes on the streets) and Redlands High School is located 2.8 miles to the west of Redlands East Valley High School. As a comparison, the proposed stadium at Redlands East Valley High School is located within two miles of the majority of the homes within the attendance area. So the proposed project would result in shorter travel distances for most of the people who would be attending games, practices, events, and other activities at the stadium. The proposed project would, therefore, result in a reduction in total vehicle miles traveled and would have a less than significant impact on VMT.

Traffic Hazards and Incompatible Uses

Access to the proposed project site would be provided by existing driveways at Redlands East Valley High School, which includes three driveways along Colton Avenue, two driveways along King Street, and one driveway on Opal Avenue. The increased levels of traffic, the increased number of pedestrians, and the increased number of vehicular turning movements at the school entrances and at the nearby intersections would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. These impacts would not be significant, however, because the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related traffic on a daily basis. The addition of a stadium would be compatible with the design and operation of a high school and the proposed project would not result in any major modifications to the existing access or circulation features at the school.

Most of the streets in the vicinity of the school site have sidewalks adjacent to the street and the intersections along the Colton Avenue frontage of the school are equipped with four-way stop signs and painted crosswalks. These features would enhance pedestrian safety and facilitate

pedestrian access to the school. The proposed project would not, therefore, substantially increase hazards due to a geometric design feature or incompatible uses.

Emergency Access

The existing access and circulation features at the school, including the on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles, and the proposed stadium would be designed to accommodate emergency access to the facility. Any modifications to the access features are subject to and must satisfy the District and the San Bernardino County design requirements and would be subject to approval by the Fire Department. Emergency vehicles could easily access the stadium and all other areas of the school via on-site travel corridors. The proposed project would not, therefore, result in inadequate emergency access.

Parking Impacts

There are two issue areas relative to the proposed project's parking impacts: 1) parking during construction and 2) parking during events at the stadium. These issue areas are presented below.

Parking during Construction

The primary parking impact that would occur during construction is that there would be parking demands associated with the construction vehicles, including workers' vehicles, trucks, and equipment. These parking demands could result in a significant parking impact if the vehicles and equipment were to be parked and stored along the public streets in the proposed project vicinity. This impact can be mitigated by requiring the construction contractor to provide an off-street parking/storage area for vehicles and equipment, as described in Recommendation T-1.

Recommendation:

T-1. Require the construction contractor to provide an off-street staging area that would be used for parking/storage of construction vehicles and equipment. This staging area should be within the school property if possible.

Parking during Stadium Events

According to the parking requirements for the City of Redlands, a place of public assembly (which includes a stadium) has a parking requirement of one space for every five fixed seats. Based on this standard, the proposed 3,000-seat stadium would generate a parking requirement of 600 spaces during a capacity-level event. In the San Bernardino County Development Code, Chapter 83.11, "Parking and Loading Standards," indicates that the parking requirement for a stadium is one space for each 3 fixed seats (Table 83-15, Parking Requirements by Land Use). Based on this rate, the proposed 3,000-seat stadium would require 1,000 parking spaces.

According to the site plan for the proposed project, Redlands East Valley High School would be provided with 1,086 parking spaces, which includes 858 spaces within the school's main campus, 78 spaces in the parking lot adjacent to the football field that is accessed from Opal Avenue, and 150 spaces that would be provided at the outdoor basketball courts adjacent to the stadium at the

southeast corner of Colton Avenue and Opal Avenue. As the on-site parking supply would exceed the parking requirements of the City of Redlands and San Bernardino County, the proposed project would not result in a significant parking impact.

IV.
SUMMARY OF IMPACTS AND CONCLUSIONS

The key findings of the traffic impact analysis are presented below.

- The proposed 3,000-seat stadium would generate an estimated 900 vehicle trips during the peak hour (825 inbound and 75 outbound) for a capacity-level event. The peak hour for this analysis represents the one-hour time period prior to the beginning of an event at the stadium when patrons are traveling to the stadium, which would typically occur on a Friday evening between 6:00 and 7:00 p.m. Approximately the same level of traffic would be generated at the end of an event when patrons are exiting (with the inbound and outbound traffic volumes reversed).
- An analysis of 10 intersections in the vicinity of the school indicates that the traffic generated by the stadium would not result in a significant impact at any of the intersections according to the San Bernardino County and Caltrans significance criteria.
- It is projected that the stadium would accommodate 60 events per year, including football practice and games, soccer practice and games, track and field practice and events, band events, and other activities such as Pop Warner football. These events would have an estimated 100 to 200 spectators, which would generate 30 to 60 vehicle trips during the peak hour. This level of project generated traffic would have a negligible impact on traffic conditions.
- CEQA threshold of significance T-1 asks if the proposed project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The analysis indicates that the impact would be less than significant because:

  -The level of service or CMP thresholds would not be exceeded during construction or operation, and

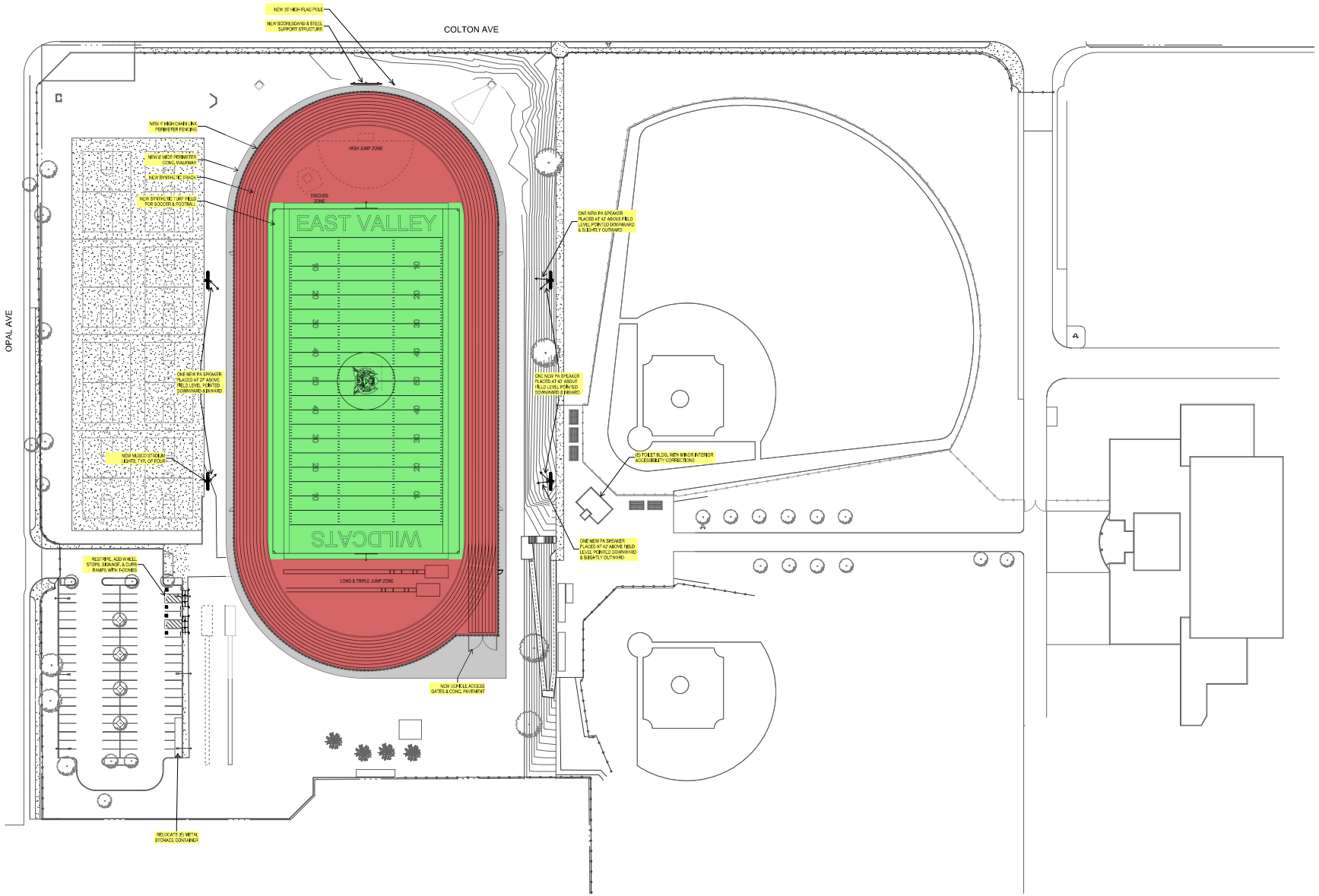
  -The proposed project would not adversely affect the performance or safety of any transit or non-motorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these alternative transportation modes.
- CEQA threshold of significance T-2 asks if the proposed project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT). The analysis indicates that the impact would be less than significant because the proposed project would result in a reduction in total vehicle miles traveled as the proposed stadium would be closer to most of the homes in the attendance area as compared to the fields where the activities currently take place.
- CEQA threshold of significance T-3 asks if the proposed project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The analysis indicates that the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related traffic. The addition of a stadium would be compatible with the design and operation of a high school and the proposed project would not result in any major modifications to the existing access or circulation features

at the school. So the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses.

- CEQA threshold of significance T-4 asks if the proposed project would result in inadequate emergency access. The existing access and circulation features at the school, including the on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles, and the proposed stadium would be designed to accommodate emergency access to the facility. The proposed project would not result in inadequate emergency access.
- Construction activities associated with the proposed project would generate parking demands for workers' vehicles, trucks, and equipment. These parking demands could result in a significant parking impact if the vehicles and equipment were to be parked and stored along the public streets in the proposed project vicinity. It is recommended that the construction contractor be required to provide an off-street staging area that would be used for parking/storage of construction vehicles and equipment. This staging area should be within the school property if possible.
- Redlands East Valley High School would be provided with 1,086 parking spaces, which includes 858 spaces within the school's main campus, 78 spaces in the parking lot adjacent to the football field that is accessed from Opal Avenue, and 150 spaces that would be provided at the outdoor basketball courts adjacent to the stadium. As the on-site parking supply would exceed the parking requirements of the City of Redlands (600 spaces) and San Bernardino County (1,000 spaces), the proposed project would not result in a significant parking impact.

APPENDIX

SITE PLANS



1 SITE PLAN PHASE 1
SCALE: 1" = 40'-0"

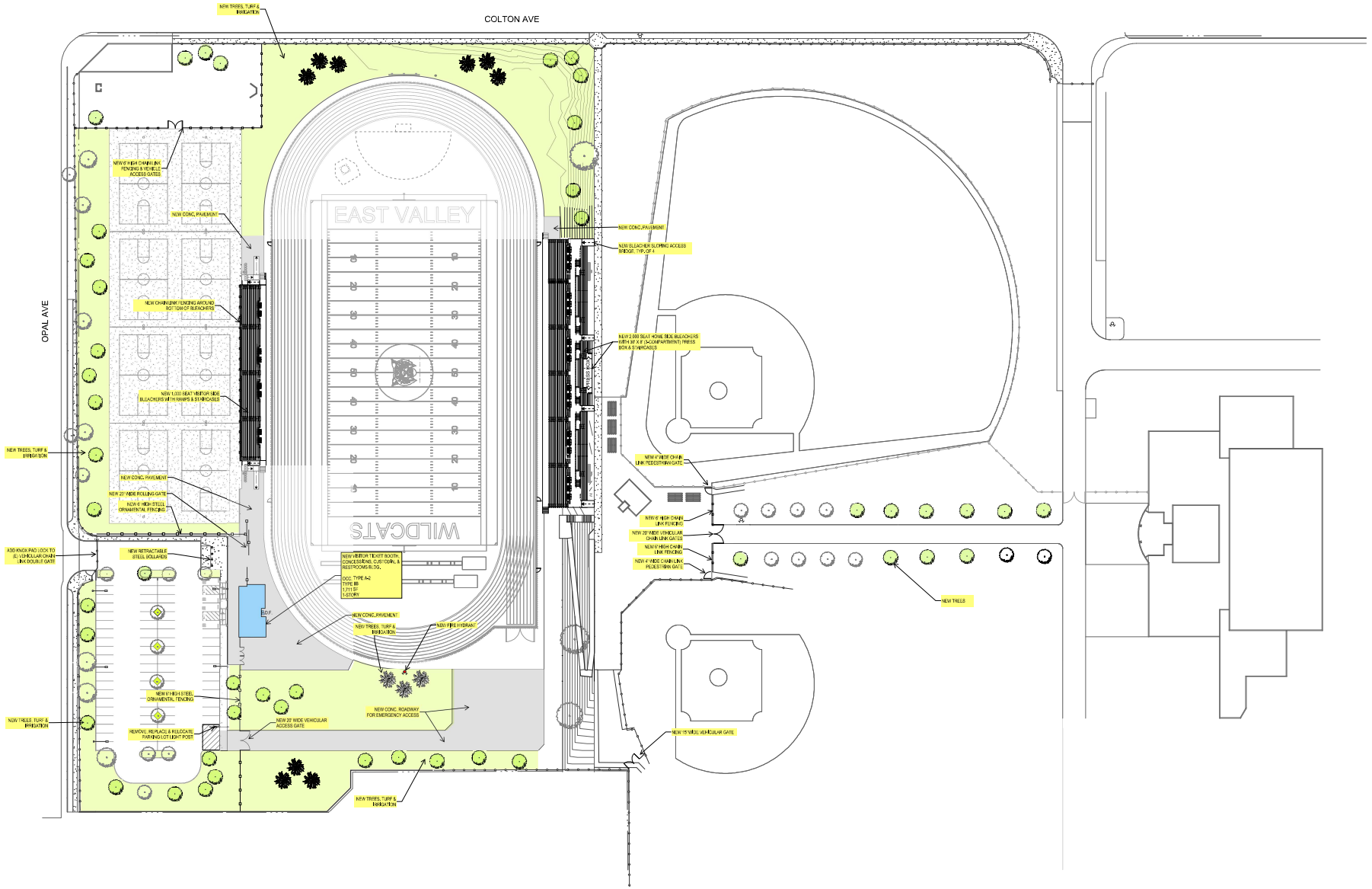
SITE PLAN - PHASE 1

Scale: 1" = 40'-0"

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM
REDLANDS UNIFIED SCHOOL DISTRICT

PROJECT STATUS
01/12/2021

ARCHITECTS
30 South Center Street
Redlands, California 92373
909/792-7397



1 SITE PLAN PHASE 2
SCALE: 1" = 40'-0"

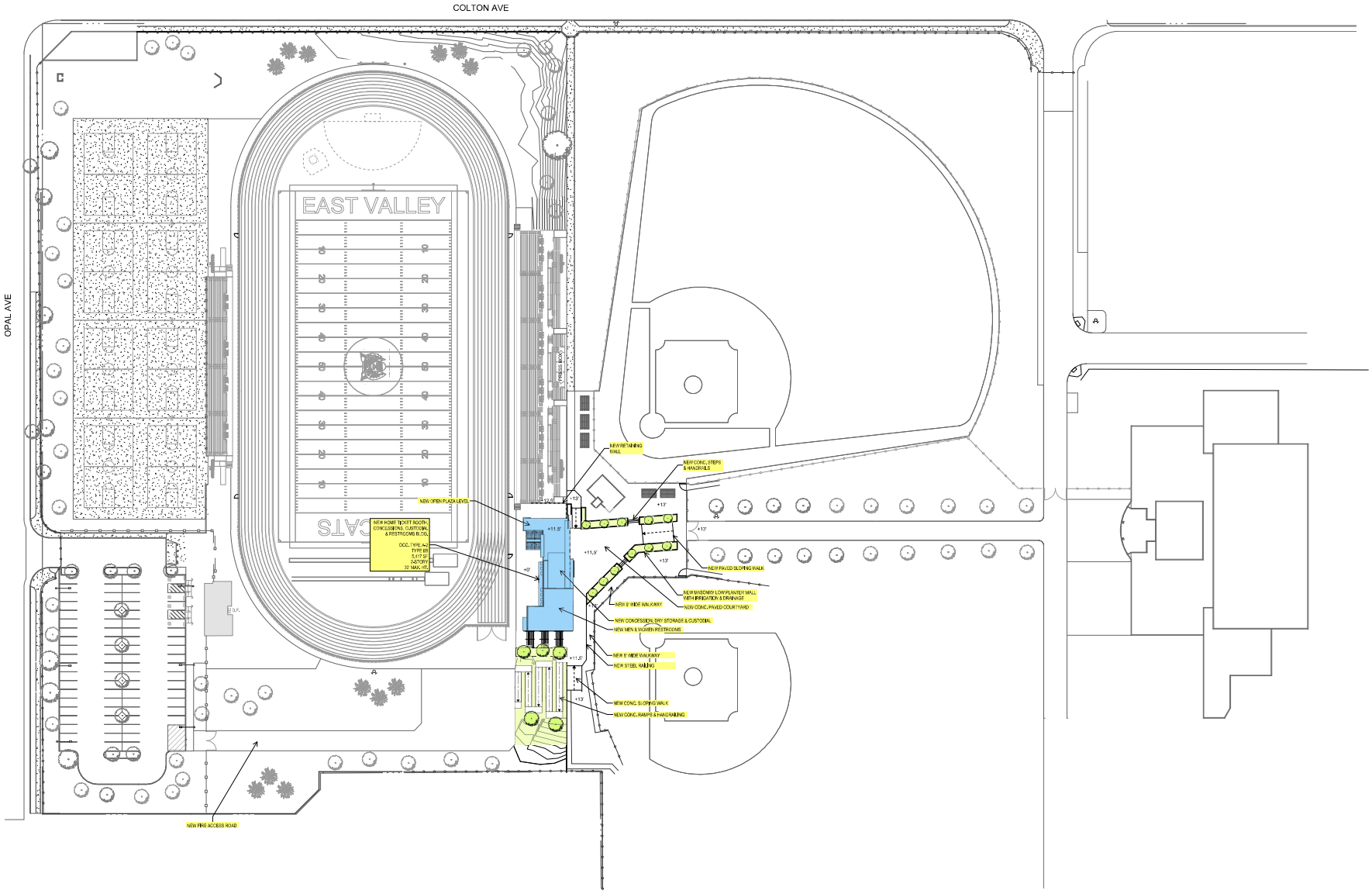
SITE PLAN - PHASE 2

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM
REDLANDS UNIFIED SCHOOL DISTRICT

PROJECT STATUS
01/12/2021

Scale: 1" = 40'-0"

ARCHITECTS
30 South Center Street
Redlands, California 92373
909/792-7397



1 SITE PLAN PHASE 3
SCALE: 1" = 40'-0"

SITE PLAN - PHASE 3

Scale: 1" = 40'-0"

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM
REDLANDS UNIFIED SCHOOL DISTRICT

PROJECT STATUS
01/12/2021

ARCHITECTS
30 South Center Street
Redlands, California 92373
909/792-7397

TRAFFIC FIGURES

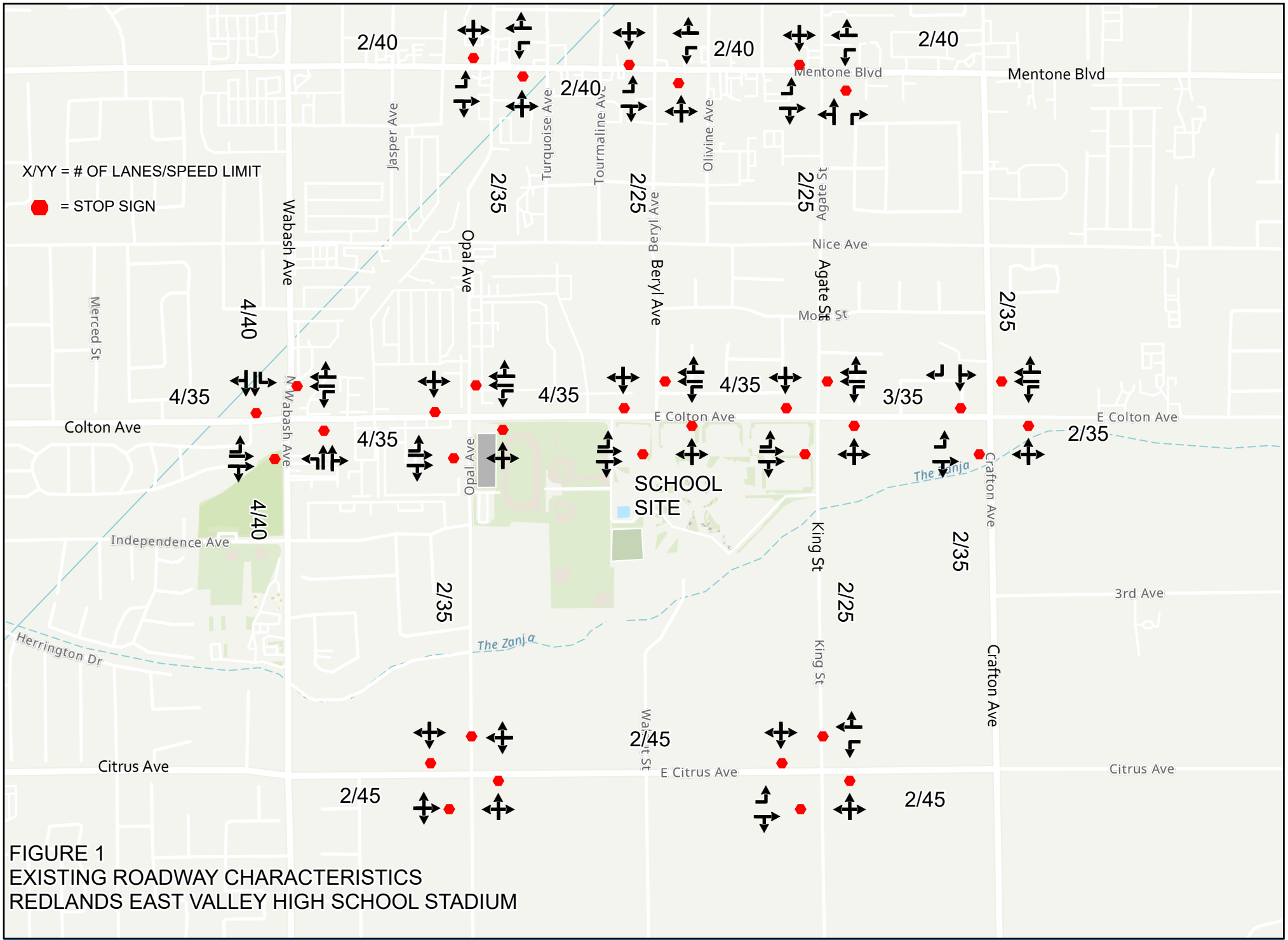


FIGURE 1
EXISTING ROADWAY CHARACTERISTICS
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

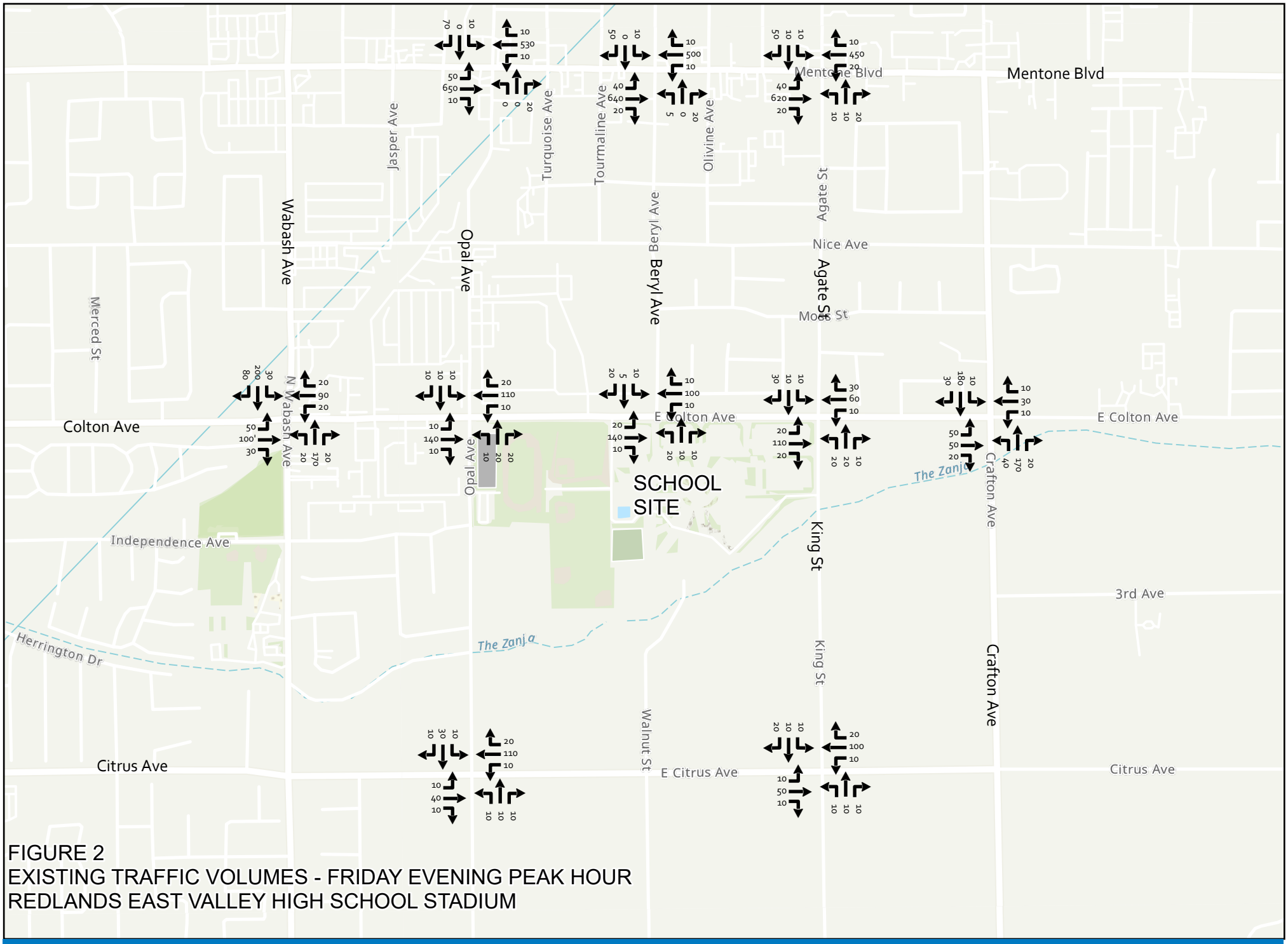


FIGURE 2
EXISTING TRAFFIC VOLUMES - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

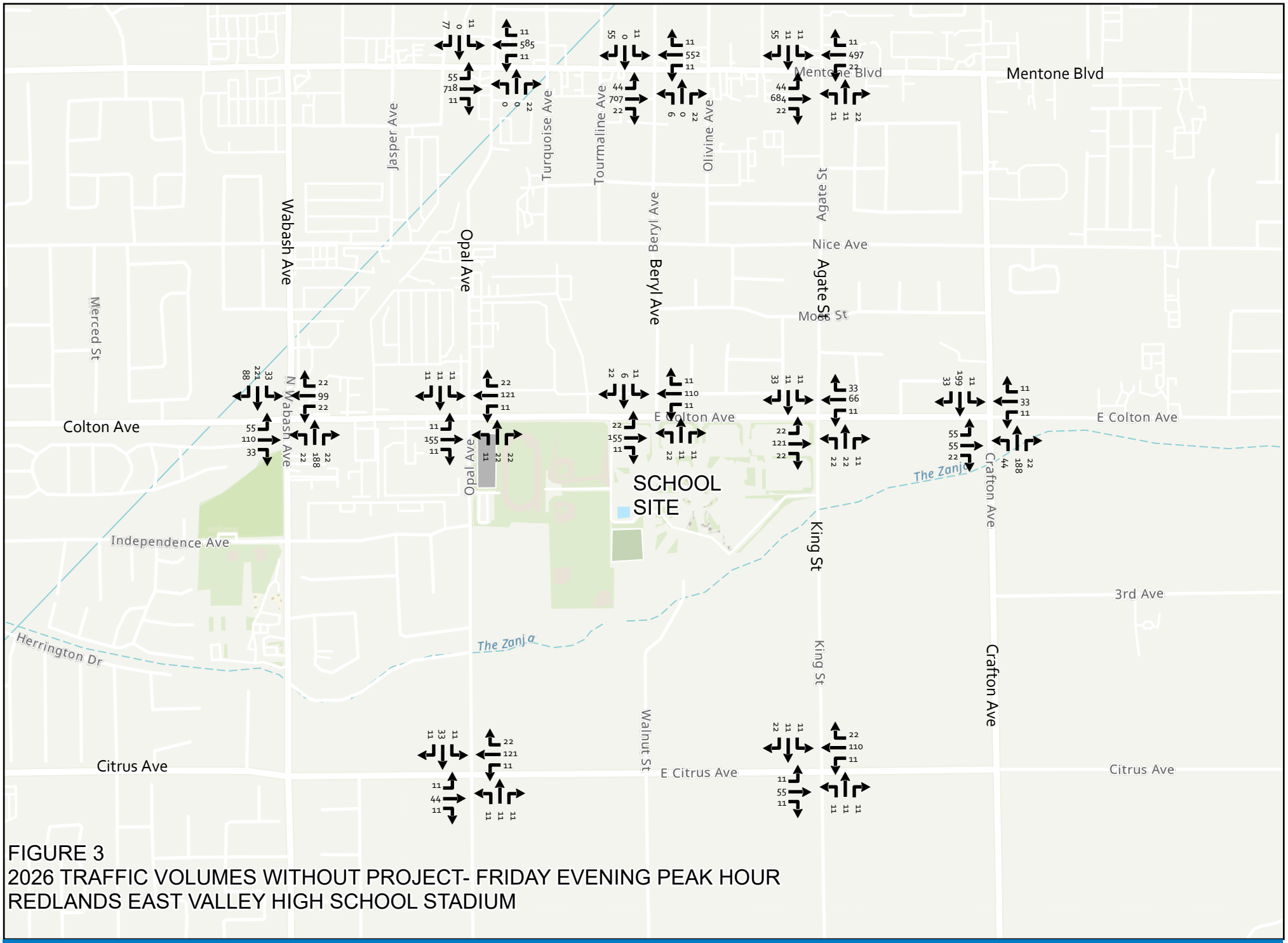


FIGURE 3
2026 TRAFFIC VOLUMES WITHOUT PROJECT- FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

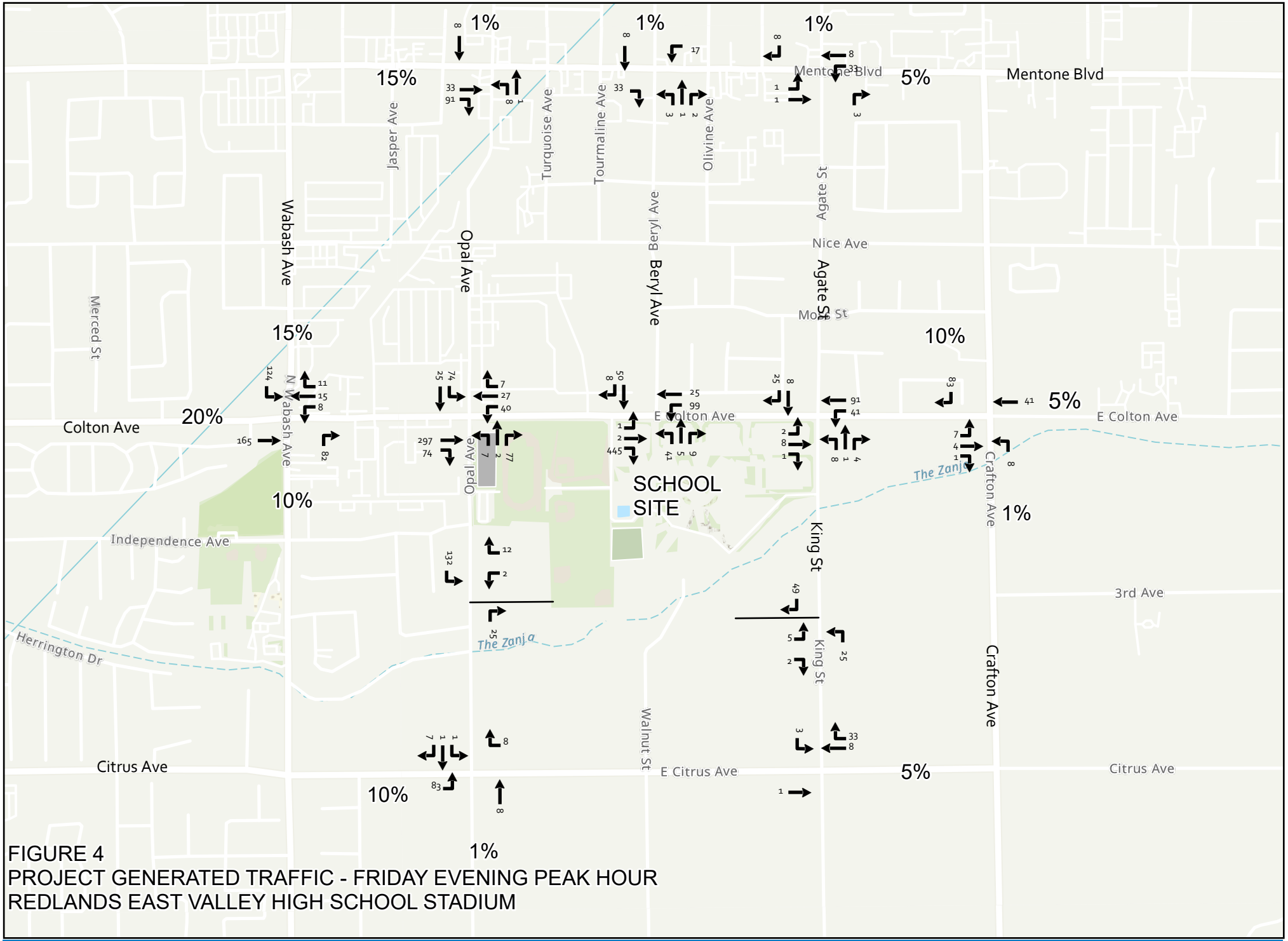


FIGURE 4
PROJECT GENERATED TRAFFIC - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

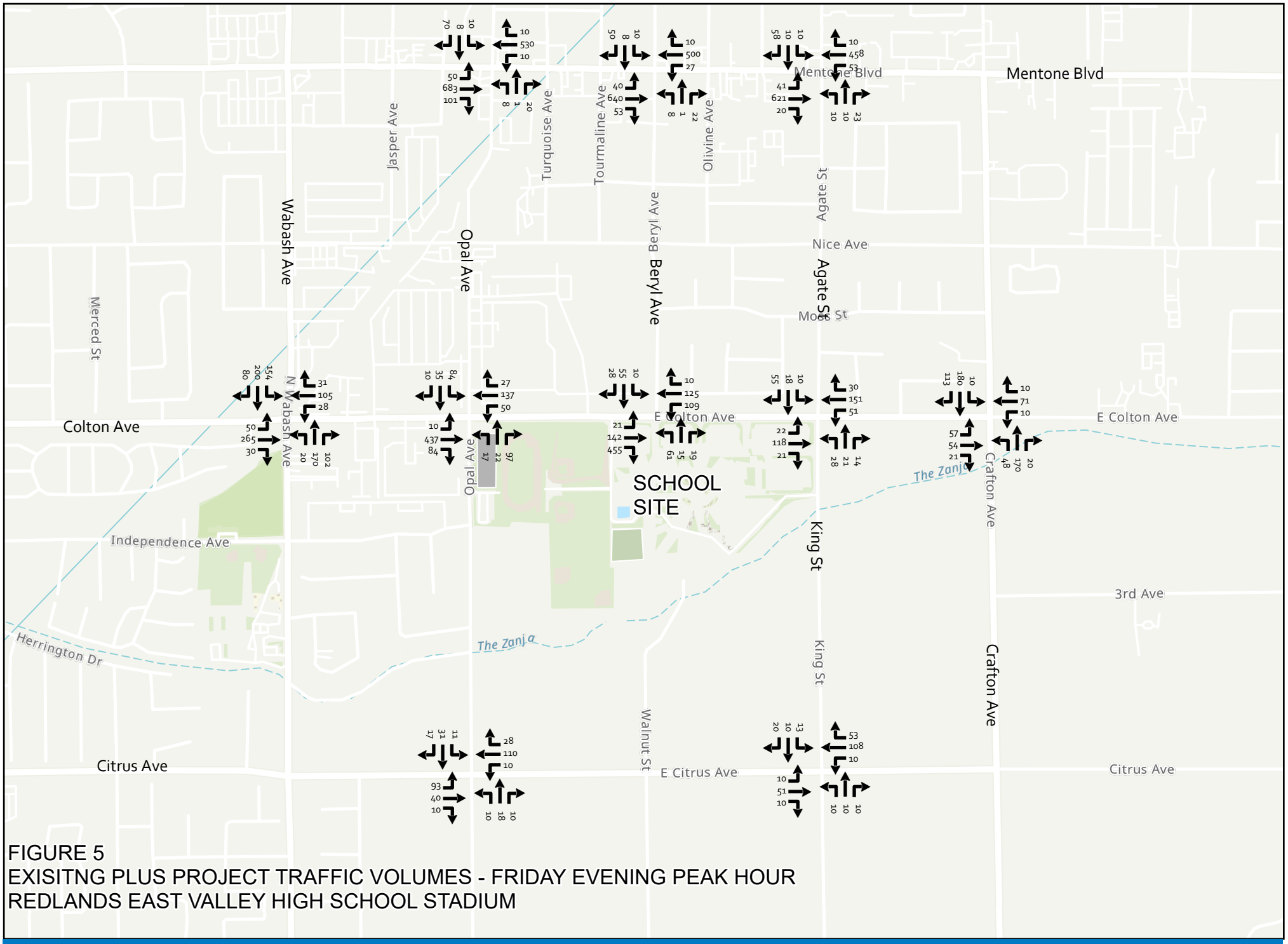


FIGURE 5
EXISITNG PLUS PROJECT TRAFFIC VOLUMES - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

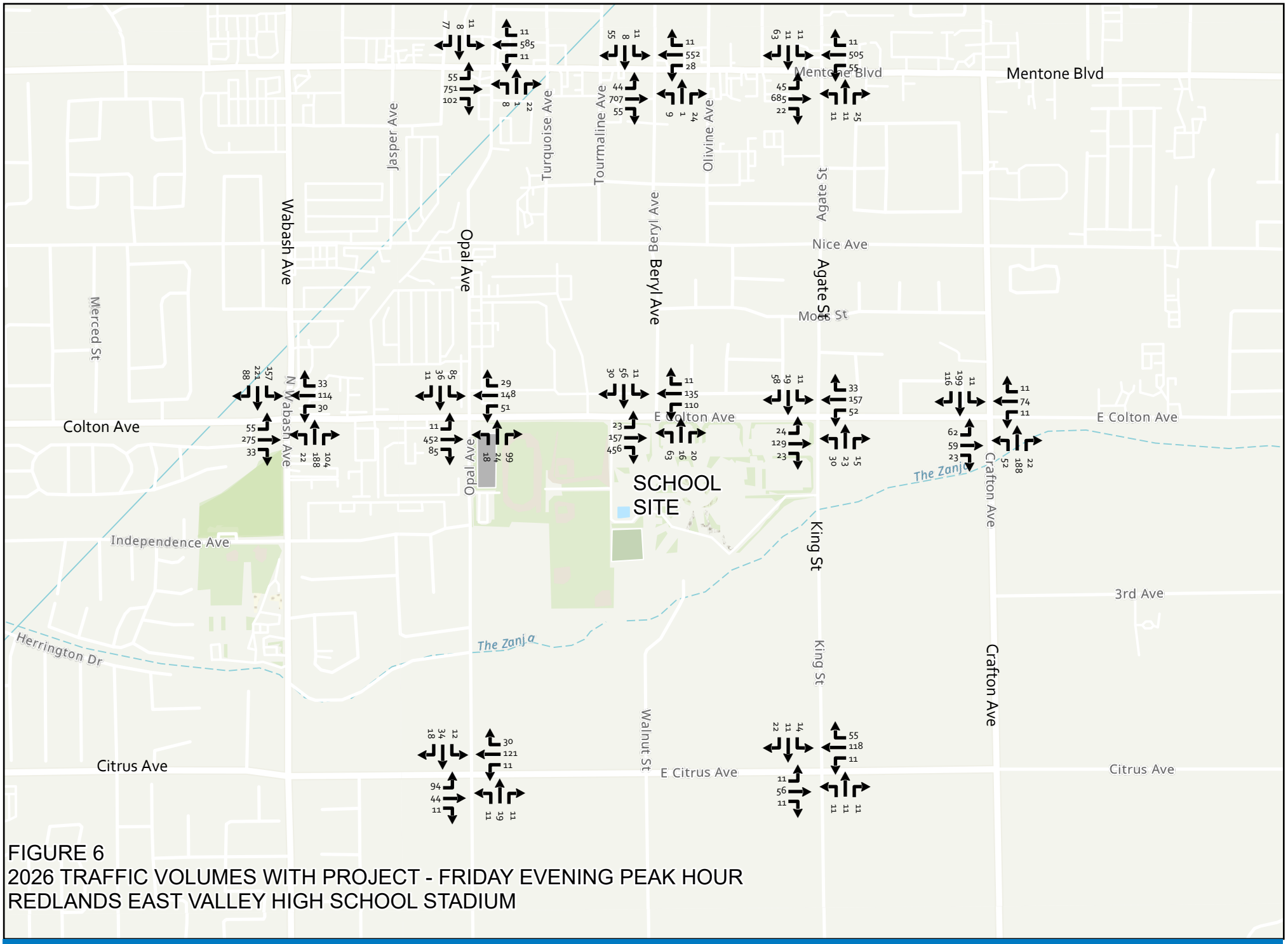


FIGURE 6
2026 TRAFFIC VOLUMES WITH PROJECT - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

LEVEL OF SERVICE
CALCULATION SHEETS

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*50*	*10*	*10*	*100*	*20*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*10*	*10*	*10*	*20*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*10*	*62*	*10*	*126*	*30*		*41*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.2*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.2*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.1*	*-0.1*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.11*	*0.03*		*0.04*	
hd, final value (s)	*5.26*	*4.65*	*5.22*	*4.60*	*4.29*		*4.15*	
x, final value	*0.01*	*0.08*	*0.01*	*0.16*	*0.04*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.3*	*2.9*	*2.3*	*2.3*		*2.2*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*260*	*312*	*260*	*376*	*280*		*291*	
Delay (s/veh)	*8.04*	*7.75*	*7.99*	*8.18*	*7.45*		*7.36*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.79*		*8.17*		*7.45*		*7.36*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.87*							
Intersection LOS	*A*							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* | North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*51*	*10*	*10*	*108*	*53*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*10*	*13*	*10*	*20*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*10*	*63*	*10*	*168*	*30*		*44*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.3*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.3*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.2*	*-0.1*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.15*	*0.03*		*0.04*	
hd, final value (s)	*5.30*	*4.69*	*5.23*	*4.50*	*4.38*		*4.27*	
x, final value	*0.01*	*0.08*	*0.01*	*0.21*	*0.04*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.4*	*2.9*	*2.2*	*2.4*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*260*	*313*	*260*	*418*	*280*		*294*	
Delay (s/veh)	*8.08*	*7.81*	*8.01*	*8.39*	*7.55*		*7.51*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.85*		*8.37*		*7.55*		*7.51*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.06*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* | North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*55*	*11*	*11*	*110*	*22*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*11*	*11*	*11*	*22*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*11*	*68*	*11*	*138*	*33*		*45*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.2*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.2*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.1*	*-0.1*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.12*	*0.03*		*0.04*	
hd, final value (s)	*5.29*	*4.68*	*5.24*	*4.62*	*4.34*		*4.20*	
x, final value	*0.02*	*0.09*	*0.02*	*0.18*	*0.04*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.4*	*2.9*	*2.3*	*2.3*		*2.2*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*261*	*318*	*261*	*388*	*283*		*295*	
Delay (s/veh)	*8.08*	*7.83*	*8.03*	*8.32*	*7.52*		*7.44*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.87*		*8.30*		*7.52*		*7.44*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.97*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* | North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*56*	*11*	*11*	*118*	*55*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*11*	*14*	*11*	*22*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*11*	*69*	*11*	*181*	*33*		*48*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.3*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.3*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.2*	*-0.1*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.16*	*0.03*		*0.04*	
hd, final value (s)	*5.33*	*4.72*	*5.26*	*4.53*	*4.44*		*4.33*	
x, final value	*0.02*	*0.09*	*0.02*	*0.23*	*0.04*		*0.06*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.4*	*3.0*	*2.2*	*2.4*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*261*	*319*	*261*	*431*	*283*		*298*	
Delay (s/veh)	*8.12*	*7.89*	*8.04*	*8.57*	*7.63*		*7.59*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.92*		*8.54*		*7.63*		*7.59*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.18*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*40*	*10*	*10*	*110*	*20*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*10*	*10*	*30*	*10*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*62*		*146*		*30*		*51*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*-0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.06*		*0.13*		*0.03*		*0.05*	
hd, final value (s)	*4.16*		*4.07*		*4.27*		*4.31*	
x, final value	*0.07*		*0.17*		*0.04*		*0.06*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.2*		*2.1*		*2.3*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*312*		*396*		*280*		*301*	
Delay (s/veh)	*7.49*		*7.88*		*7.43*		*7.58*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*7.49*		*7.88*		*7.43*		*7.58*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.70*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*93*	*40*	*10*	*10*	*110*	*28*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*18*	*10*	*11*	*31*	*17*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*149*		*154*		*38*		*60*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.7*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.1*		*0.2*		*0.3*		*0.3*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.13*		*0.14*		*0.03*		*0.05*	
hd, final value (s)	*4.38*		*4.20*		*4.55*		*4.49*	
x, final value	*0.18*		*0.18*		*0.05*		*0.07*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.4*		*2.2*		*2.5*		*2.5*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*399*		*404*		*288*		*310*	
Delay (s/veh)	*8.35*		*8.11*		*7.78*		*7.86*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*8.35*		*8.11*		*7.78*		*7.86*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.13*							
Intersection LOS	*A*							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*44*	*11*	*11*	*121*	*22*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*11*	*11*	*33*	*11*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*68*		*161*		*33*		*56*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*-0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.06*		*0.14*		*0.03*		*0.05*	
hd, final value (s)	*4.20*		*4.10*		*4.33*		*4.36*	
x, final value	*0.08*		*0.18*		*0.04*		*0.07*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.2*		*2.1*		*2.3*		*2.4*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*318*		*411*		*283*		*306*	
Delay (s/veh)	*7.56*		*8.02*		*7.51*		*7.68*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*7.56*		*8.02*		*7.51*		*7.68*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.81*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*94*	*44*	*11*	*11*	*121*	*30*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*19*	*11*	*12*	*34*	*18*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*155*		*169*		*42*		*65*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.6*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.1*		*0.2*		*0.3*		*0.3*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.14*		*0.15*		*0.04*		*0.06*	
hd, final value (s)	*4.42*		*4.23*		*4.61*		*4.55*	
x, final value	*0.19*		*0.20*		*0.05*		*0.08*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.4*		*2.2*		*2.6*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*405*		*419*		*292*		*315*	
Delay (s/veh)	*8.46*		*8.28*		*7.87*		*7.96*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*8.46*		*8.28*		*7.87*		*7.96*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.26*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*110*	*20*	*10*	*60*	*30*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*20*	*10*	*10*	*10*	*30*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*78*	*78*	*41*	*62*	*52*		*51*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*		*0.2*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.5*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.1*	*-0.3*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.07*	*0.07*	*0.04*	*0.06*	*0.05*		*0.05*	
hd, final value (s)	*4.96*	*4.64*	*4.99*	*4.52*	*4.51*		*4.22*	
x, final value	*0.11*	*0.10*	*0.06*	*0.08*	*0.07*		*0.06*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.7*	*2.3*	*2.7*	*2.2*	*2.5*		*2.2*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*328*	*328*	*291*	*312*	*302*		*301*	
Delay (s/veh)	*8.26*	*7.85*	*8.00*	*7.60*	*7.82*		*7.49*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.06*		*7.76*		*7.82*		*7.49*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.86*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*118*	*21*	*51*	*151*	*30*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*28*	*21*	*14*	*10*	*18*	*55*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*85*	*84*	*131*	*111*	*65*		*85*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.4*	*0.0*	*0.4*		*0.1*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.2*		*0.7*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.2*	*-0.2*	*-0.0*		*-0.4*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.07*	*0.12*	*0.10*	*0.06*		*0.08*	
hd, final value (s)	*5.25*	*4.93*	*5.24*	*4.84*	*4.92*		*4.56*	
x, final value	*0.12*	*0.11*	*0.19*	*0.15*	*0.09*		*0.11*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.9*	*2.6*	*2.9*	*2.5*	*2.9*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*335*	*334*	*381*	*361*	*315*		*335*	
Delay (s/veh)	*8.69*	*8.27*	*9.18*	*8.39*	*8.39*		*8.10*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.48*		*8.82*		*8.39*		*8.10*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.56*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*121*	*22*	*11*	*66*	*33*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*22*	*11*	*11*	*11*	*33*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*86*	*87*	*45*	*68*	*57*		*56*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*		*0.2*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.5*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.1*	*-0.3*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.08*	*0.04*	*0.06*	*0.05*		*0.05*	
hd, final value (s)	*5.00*	*4.68*	*5.04*	*4.57*	*4.57*		*4.29*	
x, final value	*0.12*	*0.11*	*0.06*	*0.09*	*0.07*		*0.07*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.7*	*2.4*	*2.7*	*2.3*	*2.6*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*336*	*337*	*295*	*318*	*307*		*306*	
Delay (s/veh)	*8.37*	*7.97*	*8.08*	*7.70*	*7.93*		*7.60*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.17*		*7.85*		*7.93*		*7.60*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.97*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*24*	*129*	*23*	*52*	*157*	*33*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*30*	*23*	*15*	*11*	*19*	*58*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*92*	*92*	*136*	*117*	*70*		*92*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.4*	*0.0*	*0.4*		*0.1*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.2*		*0.7*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.2*	*-0.2*	*-0.0*		*-0.4*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.08*	*0.12*	*0.10*	*0.06*		*0.08*	
hd, final value (s)	*5.30*	*4.98*	*5.30*	*4.89*	*4.99*		*4.63*	
x, final value	*0.14*	*0.13*	*0.20*	*0.16*	*0.10*		*0.12*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.7*	*3.0*	*2.6*	*3.0*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*342*	*342*	*386*	*367*	*320*		*342*	
Delay (s/veh)	*8.83*	*8.41*	*9.32*	*8.51*	*8.53*		*8.25*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.62*		*8.95*		*8.53*		*8.25*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.69*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*140*	*10*	*10*	*100*	*10*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*10*	*10*	*10*	*5*	*20*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*94*	*83*	*62*	*62*	*41*		*36*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.2*	*0.0*	*0.5*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.2*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.1*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.07*	*0.06*	*0.06*	*0.04*		*0.03*	
hd, final value (s)	*4.90*	*4.70*	*4.91*	*4.72*	*4.57*		*4.33*	
x, final value	*0.13*	*0.11*	*0.08*	*0.08*	*0.05*		*0.04*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.4*	*2.6*	*2.4*	*2.6*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*344*	*333*	*312*	*312*	*291*		*286*	
Delay (s/veh)	*8.31*	*7.97*	*8.06*	*7.83*	*7.83*		*7.53*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.15*		*7.95*		*7.83*		*7.53*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.99*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*21*	*142*	*455*	*109*	*125*	*10*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*61*	*15*	*19*	*10*	*55*	*28*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*96*	*552*	*179*	*76*	*99*		*96*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.6*	*0.0*	*0.6*		*0.1*	
Prop. Right-Turns	*0.0*	*0.9*	*0.0*	*0.1*	*0.2*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.6*	*0.3*	*-0.1*	*0.0*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.09*	*0.49*	*0.16*	*0.07*	*0.09*		*0.09*	
hd, final value (s)	*5.57*	*4.84*	*6.13*	*5.72*	*6.12*		*5.97*	
x, final value	*0.15*	*0.74*	*0.31*	*0.12*	*0.17*		*0.16*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.3*	*2.5*	*3.8*	*3.4*	*4.1*		*4.0*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*346*	*734*	*429*	*326*	*349*		*346*	
Delay (s/veh)	*9.24*	*20.13*	*11.51*	*9.20*	*10.36*		*10.09*	
LOS	*A*	*C*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*18.52*		*10.82*		*10.36*		*10.09*	
LOS	*C*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*15.26*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*155*	*11*	*11*	*110*	*11*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*11*	*11*	*11*	*6*	*22*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*104*	*93*	*68*	*68*	*45*		*40*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.2*	*0.0*	*0.5*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.2*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.1*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.09*	*0.08*	*0.06*	*0.06*	*0.04*		*0.04*	
hd, final value (s)	*4.93*	*4.74*	*4.95*	*4.76*	*4.65*		*4.42*	
x, final value	*0.14*	*0.12*	*0.09*	*0.09*	*0.06*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.4*	*2.7*	*2.5*	*2.7*		*2.4*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*354*	*343*	*318*	*318*	*295*		*290*	
Delay (s/veh)	*8.45*	*8.10*	*8.16*	*7.93*	*7.94*		*7.64*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.28*		*8.04*		*7.94*		*7.64*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.11*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*23*	*157*	*456*	*110*	*135*	*11*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*63*	*16*	*20*	*11*	*56*	*30*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*106*	*563*	*185*	*82*	*103*		*100*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.6*	*0.0*	*0.6*		*0.1*	
Prop. Right-Turns	*0.0*	*0.9*	*0.0*	*0.1*	*0.2*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.6*	*0.3*	*-0.1*	*0.0*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.09*	*0.50*	*0.16*	*0.07*	*0.09*		*0.09*	
hd, final value (s)	*5.63*	*4.91*	*6.21*	*5.80*	*6.21*		*6.06*	
x, final value	*0.17*	*0.77*	*0.32*	*0.13*	*0.18*		*0.17*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.3*	*2.6*	*3.9*	*3.5*	*4.2*		*4.1*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*356*	*725*	*435*	*332*	*353*		*350*	
Delay (s/veh)	*9.44*	*21.90*	*11.78*	*9.38*	*10.55*		*10.28*	
LOS	*A*	*C*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*19.93*		*11.05*		*10.55*		*10.28*	
LOS	*C*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*16.15*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*50*	*50*	*20*	*10*	*30*	*10*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*40*	*170*	*20*	*10*	*180*	*30*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*52*	*73*	*25*	*25*	*241*		*199*	31
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.4*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.4*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.2*	*-0.3*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.05*	*0.06*	*0.02*	*0.02*	*0.21*		*0.18*	*0.03*
hd, final value (s)	*6.30*	*5.59*	*6.12*	*5.63*	*5.26*		*5.28*	*4.55*
x, final value	*0.09*	*0.11*	*0.04*	*0.04*	*0.35*		*0.29*	*0.04*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.0*	*3.3*	*3.8*	*3.3*	*3.0*		*3.0*	*2.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*302*	*323*	*275*	*275*	*491*		*449*	*281*
Delay (s/veh)	*9.63*	*9.00*	*9.09*	*8.56*	*10.80*		*10.13*	*7.44*
LOS	*A*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*9.26*		*8.82*		*10.80*		*9.77*	
LOS	*A*		*A*		*B*		*A*	
Intersection Delay (s/veh)	*9.98*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*57*	*54*	*21*	*10*	*71*	*10*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*48*	*170*	*20*	*10*	*180*	*113*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*60*	*78*	*46*	*47*	*249*		*199*	118
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.2*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.2*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.1*	*-0.1*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.05*	*0.07*	*0.04*	*0.04*	*0.22*		*0.18*	*0.10*
hd, final value (s)	*6.62*	*5.91*	*6.30*	*6.04*	*5.55*		*5.51*	*4.78*
x, final value	*0.11*	*0.13*	*0.08*	*0.08*	*0.38*		*0.30*	*0.16*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.3*	*3.6*	*4.0*	*3.7*	*3.2*		*3.2*	*2.5*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*310*	*328*	*296*	*297*	*499*		*449*	*368*
Delay (s/veh)	*10.13*	*9.48*	*9.55*	*9.26*	*11.66*		*10.61*	*8.37*
LOS	*B*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*9.76*		*9.41*		*11.66*		*9.77*	
LOS	*A*		*A*		*B*		*A*	
Intersection Delay (s/veh)	*10.32*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*55*	*55*	*22*	*11*	*33*	*11*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*44*	*188*	*22*	*11*	*199*	*33*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*57*	*80*	*27*	*28*	*266*		*220*	*34*
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.4*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.4*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.2*	*-0.3*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.05*	*0.07*	*0.02*	*0.02*	*0.24*		*0.20*	*0.03*
hd, final value (s)	*6.45*	*5.75*	*6.30*	*5.81*	*5.36*		*5.38*	*4.65*
x, final value	*0.10*	*0.13*	*0.05*	*0.05*	*0.40*		*0.33*	*0.04*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.2*	*3.4*	*4.0*	*3.5*	*3.1*		*3.1*	*2.4*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*307*	*330*	*277*	*278*	*516*		*470*	*284*
Delay (s/veh)	*9.89*	*9.28*	*9.31*	*8.79*	*11.53*		*10.69*	*7.56*
LOS	*A*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*9.53*		*9.04*		*11.53*		*10.27*	
LOS	*A*		*A*		*B*		*B*	
Intersection Delay (s/veh)	*10.50*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*62*	*59*	*23*	*11*	*74*	*11*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*52*	*188*	*22*	*11*	*199*	*116*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*65*	*86*	*49*	*49*	*274*		*220*	*122*
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.2*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.2*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.1*	*-0.2*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.06*	*0.08*	*0.04*	*0.04*	*0.24*		*0.20*	*0.11*
hd, final value (s)	*6.78*	*6.08*	*6.50*	*6.22*	*5.66*		*5.63*	*4.90*
x, final value	*0.12*	*0.15*	*0.09*	*0.08*	*0.43*		*0.34*	*0.17*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.5*	*3.8*	*4.2*	*3.9*	*3.4*		*3.3*	*2.6*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*315*	*336*	*299*	*299*	*524*		*470*	*372*
Delay (s/veh)	*10.43*	*9.81*	*9.82*	*9.50*	*12.57*		*11.25*	*8.57*
LOS	*B*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*10.08*		*9.66*		*12.57*		*10.29*	
LOS	*B*		*A*		*B*		*B*	
Intersection Delay (s/veh)	*10.91*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*140*	*10*	*10*	*110*	*20*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*20*	*20*	*10*	*10*	*10*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*83*	*83*	*67*	*78*	*52*		*30*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*	*0.0*	*0.1*	*0.0*	*0.2*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.3*	*0.4*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.2*	*-0.2*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.07*	*0.07*	*0.06*	*0.07*	*0.05*		*0.03*	
hd, final value (s)	*4.87*	*4.73*	*4.91*	*4.64*	*4.43*		*4.52*	
x, final value	*0.11*	*0.11*	*0.09*	*0.10*	*0.06*		*0.04*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.4*	*2.6*	*2.3*	*2.4*		*2.5*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*333*	*333*	*317*	*328*	*302*		*280*	
Delay (s/veh)	*8.19*	*8.01*	*8.10*	*7.86*	*7.73*		*7.70*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.10*		*7.97*		*7.73*		*7.70*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.97*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*437*	*84*	*50*	*137*	*27*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*17*	*22*	*97*	*84*	*35*	*10*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*239*	*318*	*123*	*100*	*142*		*134*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*	*0.0*	*0.4*	*0.0*	*0.1*		*0.7*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.7*		*0.1*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.0*	*-0.2*	*0.2*	*-0.2*	*-0.4*		*0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.21*	*0.28*	*0.11*	*0.09*	*0.13*		*0.12*	
hd, final value (s)	*5.68*	*5.46*	*6.27*	*5.86*	*5.55*		*6.04*	
x, final value	*0.38*	*0.48*	*0.21*	*0.16*	*0.22*		*0.22*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.4*	*3.2*	*4.0*	*3.6*	*3.6*		*4.0*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*489*	*568*	*373*	*350*	*392*		*384*	
Delay (s/veh)	*11.78*	*13.15*	*10.68*	*9.70*	*10.10*		*10.78*	
LOS	*B*	*B*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*12.56*		*10.24*		*10.10*		*10.78*	
LOS	*B*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*11.51*							
Intersection LOS	*B*							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*155*	*11*	*11*	*121*	*22*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*22*	*22*	*11*	*11*	*11*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*92*	*93*	*74*	*87*	*57*		*33*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*	*0.0*	*0.1*	*0.0*	*0.2*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.3*	*0.4*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.2*	*-0.2*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.08*	*0.07*	*0.08*	*0.05*		*0.03*	
hd, final value (s)	*4.91*	*4.77*	*4.95*	*4.69*	*4.51*		*4.61*	
x, final value	*0.13*	*0.12*	*0.10*	*0.11*	*0.07*		*0.04*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.5*	*2.6*	*2.4*	*2.5*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*342*	*343*	*324*	*337*	*307*		*283*	
Delay (s/veh)	*8.32*	*8.14*	*8.21*	*7.99*	*7.86*		*7.81*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.23*		*8.09*		*7.86*		*7.81*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.10*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*452*	*85*	*51*	*148*	*29*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*18*	*24*	*99*	*85*	*36*	*11*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*248*	*326*	*130*	*107*	*147*		*137*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*	*0.0*	*0.4*	*0.0*	*0.1*		*0.6*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.7*		*0.1*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.0*	*-0.2*	*0.2*	*-0.2*	*-0.4*		*0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.22*	*0.29*	*0.12*	*0.10*	*0.13*		*0.12*	
hd, final value (s)	*5.75*	*5.53*	*6.34*	*5.94*	*5.64*		*6.12*	
x, final value	*0.40*	*0.50*	*0.23*	*0.18*	*0.23*		*0.23*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.4*	*3.2*	*4.0*	*3.6*	*3.6*		*4.1*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*498*	*576*	*380*	*357*	*397*		*387*	
Delay (s/veh)	*12.16*	*13.65*	*10.91*	*9.90*	*10.33*		*10.98*	
LOS	*B*	*B*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*13.01*		*10.46*		*10.33*		*10.98*	
LOS	*B*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*11.84*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*50*	*100*	*30*	*20*	*90*	*20*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*170*	*20*	*30*	*200*	*80*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*104*	*83*	*68*	*68*	*110*	*110*	*136*	189
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.5*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.2*	*0.0*
Prop. Right-Turns	*0.0*	*0.4*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.3*	*-0.3*	*0.2*	*-0.2*	*0.1*	*-0.1*	*0.1*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.09*	*0.07*	*0.06*	*0.06*	*0.10*	*0.10*	*0.12*	*0.17*
hd, final value (s)	*6.31*	*5.80*	*6.29*	*5.92*	*5.91*	*5.68*	*5.81*	*5.38*
x, final value	*0.18*	*0.13*	*0.12*	*0.11*	*0.18*	*0.17*	*0.22*	*0.28*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.0*	*3.5*	*4.0*	*3.6*	*3.6*	*3.4*	*3.5*	*3.1*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*354*	*333*	*318*	*318*	*360*	*360*	*386*	*439*
Delay (s/veh)	*10.42*	*9.40*	*9.84*	*9.37*	*9.90*	*9.56*	*10.13*	*10.19*
LOS	*B*	*A*	*A*	*A*	*A*	*A*	*B*	*B*
Approach: Delay (s/veh)	*9.97*		*9.61*		*9.73*		*10.17*	
LOS	*A*		*A*		*A*		*B*	
Intersection Delay (s/veh)	*9.92*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* | North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*50*	*265*	*30*	*28*	*105*	*31*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*170*	*102*	*154*	*200*	*80*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*190*	*171*	*83*	*87*	*110*	*196*	*267*	189
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.6*	*0.0*
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.4*	*0.0*	*0.5*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.2*	*-0.3*	*0.1*	*-0.4*	*0.3*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.17*	*0.15*	*0.07*	*0.08*	*0.10*	*0.17*	*0.24*	*0.17*
hd, final value (s)	*7.02*	*6.76*	*7.40*	*6.97*	*6.93*	*6.46*	*6.91*	*6.29*
x, final value	*0.37*	*0.32*	*0.17*	*0.17*	*0.21*	*0.35*	*0.51*	*0.33*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.7*	*4.5*	*5.1*	*4.7*	*4.6*	*4.2*	*4.6*	*4.0*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*440*	*421*	*333*	*337*	*360*	*446*	*508*	*439*
Delay (s/veh)	*13.80*	*12.63*	*11.62*	*11.08*	*11.49*	*12.61*	*16.64*	*12.07*
LOS	*B*	*B*	*B*	*B*	*B*	*B*	*C*	*B*
Approach: Delay (s/veh)	*13.25*		*11.34*		*12.21*		*14.74*	
LOS	*B*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*13.28*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*55*	*110*	*33*	*22*	*99*	*22*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*188*	*22*	*33*	*221*	*88*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*114*	*91*	*74*	*75*	*121*	*121*	*149*	208
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.5*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.2*	*0.0*
Prop. Right-Turns	*0.0*	*0.4*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.3*	*-0.3*	*0.2*	*-0.2*	*0.1*	*-0.1*	*0.1*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.10*	*0.08*	*0.07*	*0.07*	*0.11*	*0.11*	*0.13*	*0.18*
hd, final value (s)	*6.50*	*5.99*	*6.49*	*6.12*	*6.07*	*5.85*	*5.96*	*5.54*
x, final value	*0.21*	*0.15*	*0.13*	*0.13*	*0.20*	*0.20*	*0.25*	*0.32*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.2*	*3.7*	*4.2*	*3.8*	*3.8*	*3.5*	*3.7*	*3.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*364*	*341*	*324*	*325*	*371*	*371*	*399*	*458*
Delay (s/veh)	*10.87*	*9.75*	*10.19*	*9.71*	*10.33*	*9.97*	*10.60*	*10.82*
LOS	*B*	*A*	*B*	*A*	*B*	*A*	*B*	*B*
Approach: Delay (s/veh)	*10.37*		*9.95*		*10.15*		*10.73*	
LOS	*B*		*A*		*B*		*B*	
Intersection Delay (s/veh)	*10.38*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*55*	*275*	*33*	*30*	*114*	*33*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*188*	*104*	*157*	*221*	*88*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*201*	*179*	*91*	*94*	*121*	*207*	*280*	208
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.6*	*0.0*
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.4*	*0.0*	*0.5*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.2*	*-0.3*	*0.1*	*-0.4*	*0.3*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.18*	*0.16*	*0.08*	*0.08*	*0.11*	*0.18*	*0.25*	*0.18*
hd, final value (s)	*7.24*	*6.96*	*7.62*	*7.20*	*7.14*	*6.68*	*7.09*	*6.49*
x, final value	*0.40*	*0.35*	*0.19*	*0.19*	*0.24*	*0.38*	*0.55*	*0.37*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.9*	*4.7*	*5.3*	*4.9*	*4.8*	*4.4*	*4.8*	*4.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*451*	*429*	*341*	*344*	*371*	*457*	*496*	*458*
Delay (s/veh)	*14.75*	*13.30*	*12.13*	*11.56*	*12.09*	*13.48*	*18.16*	*13.02*
LOS	*B*	*B*	*B*	*B*	*B*	*B*	*C*	*B*
Approach: Delay (s/veh)	*14.07*		*11.84*		*12.97*		*15.97*	
LOS	*B*		*B*		*B*		*C*	
Intersection Delay (s/veh)	*14.18*							
Intersection LOS	*B*							

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Agate Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*Existing 2021*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*40*	*620*	*20*	*20*	*450*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*42*	*652*	*21*	*21*	*473*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*20*	*10*	*10*	*50*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*10*	*10*	*21*	*10*	*10*	*52*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*42*	*21*	*20*		*21*		*72*	
C (m) (veh/h)	*1090*	*927*	*134*		*465*		*311*	
v/c	*0.04*	*0.02*	*0.15*		*0.05*		*0.23*	
95% queue length	*0.12*	*0.07*	*0.51*		*0.14*		*0.88*	
Control Delay (s/veh)	*8.4*	*9.0*	*36.5*		*13.1*		*20.0*	
LOS	*A*	*A*	*E*		*B*		*C*	
Approach Delay (s/veh)	--	--	*24.5*			*20.0*		
Approach LOS	--	--	*C*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Agate Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*Existing Plus Project*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*41*	*621*	*20*	*53*	*458*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*43*	*653*	*21*	*55*	*482*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*23*	*10*	*10*	*58*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*10*	*10*	*24*	*10*	*10*	*61*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*43*	*55*	*20*		*24*		*81*	
C (m) (veh/h)	*1082*	*927*	*113*		*464*		*296*	
v/c	*0.04*	*0.06*	*0.18*		*0.05*		*0.27*	
95% queue length	*0.12*	*0.19*	*0.61*		*0.16*		*1.09*	
Control Delay (s/veh)	*8.5*	*9.1*	*43.6*		*13.2*		*21.7*	
LOS	*A*	*A*	*E*		*B*		*C*	
Approach Delay (s/veh)	--	--	*27.0*			*21.7*		
Approach LOS	--	--	*D*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Agate Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 Without Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*44*	*684*	*22*	*22*	*497*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*46*	*720*	*23*	*23*	*523*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*22*	*11*	*11*	*55*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*11*	*11*	*23*	*11*	*11*	*57*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*46*	*23*	*22*		*23*		*79*	
C (m) (veh/h)	*1044*	*873*	*107*		*424*		*263*	
v/c	*0.04*	*0.03*	*0.21*		*0.05*		*0.30*	
95% queue length	*0.14*	*0.08*	*0.73*		*0.17*		*1.22*	
Control Delay (s/veh)	*8.6*	*9.2*	*47.2*		*14.0*		*24.5*	
LOS	*A*	*A*	*E*		*B*		*C*	
Approach Delay (s/veh)	--	--	*30.2*			*24.5*		
Approach LOS	--	--	*D*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Agate Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 With Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*45*	*685*	*22*	*55*	*505*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*47*	*721*	*23*	*57*	*531*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*25*	*11*	*11*	*63*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*11*	*11*	*26*	*11*	*11*	*66*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*47*	*57*	*22*		*26*		*88*	
C (m) (veh/h)	*1037*	*873*	*89*		*424*		*248*	
v/c	*0.05*	*0.07*	*0.25*		*0.06*		*0.35*	
95% queue length	*0.14*	*0.21*	*0.89*		*0.20*		*1.53*	
Control Delay (s/veh)	*8.6*	*9.4*	*58.2*		*14.0*		*27.3*	
LOS	*A*	*A*	*F*		*B*		*D*	
Approach Delay (s/veh)	--	--	*34.3*			*27.3*		
Approach LOS	--	--	*D*			*D*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Beryl Ave*
Jurisdiction	*Caltrans*
Analysis Year	*Existing 2021*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*40*	*640*	*20*	*10*	*500*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*42*	*673*	*21*	*10*	*526*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*5*	*0*	*20*	*10*	*0*	*50*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*5*	*0*	*21*	*10*	*0*	*52*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*42*	*10*		*26*			*62*	
C (m) (veh/h)	*1042*	*911*		*287*			*352*	
v/c	*0.04*	*0.01*		*0.09*			*0.18*	
95% queue length	*0.13*	*0.03*		*0.30*			*0.63*	
Control Delay (s/veh)	*8.6*	*9.0*		*18.8*			*17.4*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay (s/veh)	--	--	*18.8*			*17.4*		
Approach LOS	--	--	*C*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Beryl Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2021 Existing plus Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*40*	*640*	*53*	*27*	*500*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*42*	*673*	*55*	*28*	*526*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*1*	*22*	*10*	*8*	*50*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*8*	*1*	*23*	*10*	*8*	*52*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*42*	*28*		*32*			*70*	
C (m) (veh/h)	*1042*	*885*		*226*			*284*	
v/c	*0.04*	*0.03*		*0.14*			*0.25*	
95% queue length	*0.13*	*0.10*		*0.49*			*0.95*	
Control Delay (s/veh)	*8.6*	*9.2*		*23.5*			*21.8*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay (s/veh)	--	--	*23.5*			*21.8*		
Approach LOS	--	--	*C*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Beryl Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 Without Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*44*	*707*	*22*	*11*	*552*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*46*	*744*	*23*	*11*	*581*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*6*	*0*	*22*	*11*	*0*	*55*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*6*	*0*	*23*	*11*	*0*	*57*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*46*	*11*		*29*			*68*	
C (m) (veh/h)	*994*	*856*		*234*			*302*	
v/c	*0.05*	*0.01*		*0.12*			*0.23*	
95% queue length	*0.15*	*0.04*		*0.42*			*0.85*	
Control Delay (s/veh)	*8.8*	*9.3*		*22.5*			*20.4*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay (s/veh)	--	--	*22.5*			*20.4*		
Approach LOS	--	--	*C*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Beryl Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*2026 With Project*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*44*	*707*	*55*	*28*	*552*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*46*	*744*	*57*	*29*	*581*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*9*	*1*	*24*	*11*	*8*	*55*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*9*	*1*	*25*	*11*	*8*	*57*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*46*	*29*		*35*			*76*	
C (m) (veh/h)	*994*	*831*		*183*			*243*	
v/c	*0.05*	*0.03*		*0.19*			*0.31*	
95% queue length	*0.15*	*0.11*		*0.68*			*1.29*	
Control Delay (s/veh)	*8.8*	*9.5*		*29.3*			*26.4*	
LOS	*A*	*A*		*D*			*D*	
Approach Delay (s/veh)	--	--	*29.3*			*26.4*		
Approach LOS	--	--	*D*			*D*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Opal Ave*
Jurisdiction	*Caltrans*
Analysis Year	*Existing 2021*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*50*	*650*	*10*	*10*	*530*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*52*	*684*	*10*	*10*	*557*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*20*	*10*	*0*	*70*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*21*	*10*	*0*	*73*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*52*	*10*		*21*			*83*	
C (m) (veh/h)	*1015*	*911*		*449*			*364*	
v/c	*0.05*	*0.01*		*0.05*			*0.23*	
95% queue length	*0.16*	*0.03*		*0.15*			*0.86*	
Control Delay (s/veh)	*8.7*	*9.0*		*13.4*			*17.8*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay (s/veh)	--	--	*13.4*			*17.8*		
Approach LOS	--	--	*B*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Opal Ave*
Jurisdiction	*Caltrans*
Analysis Year	*Existing plus Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*50*	*683*	*101*	*10*	*530*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*52*	*718*	*106*	*10*	*557*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*1*	*20*	*10*	*8*	*70*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*8*	*1*	*21*	*10*	*8*	*73*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*52*	*10*		*30*			*91*	
C (m) (veh/h)	*1015*	*815*		*186*			*292*	
v/c	*0.05*	*0.01*		*0.16*			*0.31*	
95% queue length	*0.16*	*0.04*		*0.56*			*1.29*	
Control Delay (s/veh)	*8.7*	*9.5*		*28.0*			*22.8*	
LOS	*A*	*A*		*D*			*C*	
Approach Delay (s/veh)	--	--	*28.0*			*22.8*		
Approach LOS	--	--	*D*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Opal Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*2026 Without Project*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*55*	*718*	*11*	*11*	*585*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*57*	*755*	*11*	*11*	*615*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*22*	*11*	*0*	*77*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*23*	*11*	*0*	*81*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*57*	*11*		*23*			*92*	
C (m) (veh/h)	*965*	*856*		*409*			*316*	
v/c	*0.06*	*0.01*		*0.06*			*0.29*	
95% queue length	*0.19*	*0.04*		*0.18*			*1.18*	
Control Delay (s/veh)	*9.0*	*9.3*		*14.3*			*21.0*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay (s/veh)	--	--	*14.3*			*21.0*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Opal Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 With Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*55*	*751*	*102*	*11*	*585*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*57*	*790*	*107*	*11*	*615*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*1*	*22*	*11*	*8*	*77*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*8*	*1*	*23*	*11*	*8*	*81*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*57*	*11*		*32*			*100*	
C (m) (veh/h)	*965*	*765*		*153*			*251*	
v/c	*0.06*	*0.01*		*0.21*			*0.40*	
95% queue length	*0.19*	*0.04*		*0.76*			*1.81*	
Control Delay (s/veh)	*9.0*	*9.8*		*34.6*			*28.5*	
LOS	*A*	*A*		*D*			*D*	
Approach Delay (s/veh)	--	--	*34.6*			*28.5*		
Approach LOS	--	--	*D*			*D*		