Merced High School Stadium Project
Environmental Impact Report

Prepared in Compliance with
California Environmental Quality Act

Volume I:
Draft Environmental Impact Report

State Clearinghouse No. 2019060008

Lead Agency and Project Sponsor:

Merced Union High School District
Merced, California

Environmental Impact Report Consultant:

ODELL *Planning & Research, Inc.*
Oakhurst, California

December 2019

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For the Proposed

Merced High School Stadium Project

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Lead Agency and Project Sponsor

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Volume II: Appendices

(Volume II is presented in a separate document, copies of which may be viewed or obtained at the Merced Union High School District Administrative Office, 3430 A Street, Atwater, CA 95301 or viewed at the Merced County Library, 2100 "O" Street, Merced, CA 95340. Individuals and agencies that have previously requested a copy will be sent a copy by mail.)

Appendix A Air Quality / Greenhouse Gas Emissions

Ambient Air Quality & Noise Consulting. *Air Quality & Greenhouse Gas Impact Analysis for Merced High School Stadium Project, Merced Union High School District, Merced, CA*. November 2019.

Appendix B Biological Resources

Odell Planning & Research, Inc. *Special Status Animal Species Known from the Vicinity of the Merced High School Stadium Project.* November 2019.

Appendix C Cultural Resources

California Historical Resources Information System (CHRIS). *Re: Project: Merced High School Stadium project: construction of new athletic stadium and associated walking paths on existing campus at northwest corner of W. Olive and G St., Merced.* June 12, 2019.

Native American Heritage Commission (NAHC). *RE: Merced High School Stadium Project, Merced County.* June 6, 2019.

Appendix D Noise and Vibration

Ambient Air Quality & Noise Consulting. *Noise & Groundborne Vibration Impact Analysis for Merced High School Stadium Project, Merced Union High School District, Merced, CA*. November 2019.

Appendix E Transportation

JLB Traffic Engineering, Inc. *Traffic Impact Analysis, Merced Union High School District, Merced High School Stadium, Located on the Northwest corner of "G" Street and Olive Avenue, In the City of Merced, California.* November 7, 2019.

Volume III: Final EIR

(Merced Union High School District will prepare Volume III, the Final EIR upon completion of the public review period for the Draft EIR. The Final EIR will be in a separate document, copies of which will be available for viewing at the Merced Union High School District Administrative Office, 3430 A Street, Atwater, CA 95301 or viewed at the Merced County Library, 2100 "O" Street, Merced, CA 95340. Individuals and agencies that have previously requested a copy will be sent a copy by mail.)

Abbreviations and Acronyms

Abbreviations and acronyms used in this EIR include but are not limited to the following:

"CEQA" means the California Environmental Quality Act, California Resources Code, Division 13, Environmental Quality.

"City" means the City of Merced.

"County" means the County of Merced.

"Draft EIR" means the "Draft EIR for the Merced High School Stadium Project". (This document.)

"Final EIR" means the "Final EIR for the Merced High School Stadium Project" (The Final EIR will include this Draft EIR document and additional information the State CEQA Guidelines requires for Final EIRs.)

"General Plan" means the "Merced Vision 2030 General Plan".

"General Plan EIR" means the "Draft Program EIR Merced Vision 2030 General Plan".

"Lead Agency", "Merced Union", or "MUHSD" means Merced Union High School District.

"MM" means mitigation measure.

"Project area" or "Project site" means the 3-acre stadium site proposed by MUHSD and evaluated in this EIR.

"Project" means the Merced High School Stadium Project (the subject of this EIR).

"State CEQA Guidelines, CEQA Guidelines, or Guidelines" means Title 14. California Code of Regulations, Chapter 3: Guidelines for Implementation of the California Environmental Quality Act.

1. Introduction

1.1 Purpose of EIR

The Merced Union High School District ("Merced Union", "MUHSD", or "the District") contracted with Odell Planning & Research, Inc. to prepare an Environmental Impact Report (EIR) for the Merced High School Stadium Project (project). MUHSD must prepare the EIR to comply with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines (CEQA Guidelines).

This EIR is an informational document that will inform MUHSD and the public generally of the significant environmental effect of the project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. Under CEQA and the Guidelines, "significant effect or impact" means "a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project, including but not limited to land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

1.2 Type of EIR

This is a project EIR. A project EIR examines the environmental impacts of a specific development project, in this case the construction and operation of the proposed high school athletic stadium. This EIR focuses primarily on the changes in the environment that would result from the project and examines all phases of the project including planning, construction, and operation.

To promote efficiency and reduce redundancy, this EIR incorporates by reference information from other documents and sources that is germane to the proposed project and is available for public review. Most of the information incorporated by reference is from the *Draft Program Environmental Impact Report Merced Vision 2030 General Plan*, which provides a comprehensive evaluation of impacts associated with implementation of the *Merced Vision 2030 General Plan*.[1]

1.3 Public Review Process for EIR

The public review process for this EIR includes the following:

- MUHSD sent a Notice of Preparation (NOP) for the EIR by certified mail to all responsible, trustee, and interested agencies for the project. The NOP was also sent to nearby property owners and residents and was filed with the Merced County Clerk's office for a period of 30 days. The NOP included a summary description of the project, its location, and potential environmental effects. The purpose of the NOP was to solicit guidance from the agencies as to the scope and content of the environmental information that should be included in the EIR and to allow nearby property owners and residents to provide environmental comments on the project for the District's consideration in preparing the EIR.
- MUHSD distributed a Notice of Availability (NOA) for the Draft EIR. The notice stated that the MUHSD had completed the Draft EIR, included a brief description of the project and its location, an address where copies of the Draft EIR were available for public review, and the beginning and end dates for the 45-day review period during which MUHSD would receive public comments on the Draft EIR. MUHSD sent the NOA to the California Office of Planning and Research, State Clearinghouse; posted the notice at the Merced County Clerk's office and in a newspaper of general circulation in the area affected by the project; mailed the

[1] The *Merced Vision 2030* and the *Draft EIR Merced Vision 2030* are available for public review at Merced Civic Center, 678 West 18th Street, 2nd Floor, Merced, CA 95340, and on the City of Merced website.

notice to all organizations and individuals who previously requested the notice in writing; and mailed the notice to nearby owners and residents.

- Following completion of the 45-day public review period for the Draft EIR, MUHSD will prepare a Final EIR. The Final EIR will contain the Draft EIR; the comments and recommendations received on the Draft EIR from agencies and individuals; a list of persons, organizations, and public agencies commenting on the Draft EIR; and the responses of MUHSD to significant environmental points raised in the review and consultation process.
- Individuals and agency representatives may present testimony to MUHSD on the Final EIR and the project when the MUHSD Board of Trustees meets to consider certifying the EIR and approving the project.

1.4 EIR Content and Organization

The information in this EIR is presented in three volumes. The Draft EIR is presented in Volume I. The technical studies and analyses prepared for the Draft EIR are in Volume II. The Final EIR will constitute Volume III. MUHSD will prepare the Final EIR after the Draft EIR public review period is completed. (The Table of Contents presents a comprehensive outline of the EIR content and organization.)

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2. Summary

2.1 Introduction

This section presents a summary of the proposed project and its environmental consequences. The summary identifies each significant effect of the project with proposed mitigation measures and alternatives that would reduce or avoid that effect, areas of controversy known to MUHSD including issues raised by agencies and the public, and issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.

2.2 Project Description

The Merced High School Stadium Project (project) involves the construction and operation of a 3,100-seat high school football stadium on the existing Merced High School campus.

Grandstands will be located on the north and south sides of the stadium, connected by concrete walkways around the perimeter of the football field to an entry gate structure located at the southeast corner of the stadium and to an existing concessions/restroom building on the east side of the stadium. The project includes the construction of walking paths connecting the stadium to existing parking on the southern portion of the high school campus. The grandstands will be completed in two phases with the first 2,000 seats on the south (home) side being completed in the initial phase, and an additional 1,100 seats on the north (visitor) side, as well as conversion from natural to artificial turf being completed in the second phase.

The project will utilize the existing lighting which has been in place since 2009. Project lighting will be upgraded to LED lighting with the second phase. The project will include a new Public Address (PA) system but will be comparable in wattage to the existing PA system. The project site has been used as an athletic field since 1986. Existing uses at the project site include varsity, junior varsity, and freshman football practice, freshman football games, annual Homecoming varsity and junior varsity football games, and youth football league practice. Additional future uses include varsity and junior varsity football games, soccer practice, soccer games, and commencement ceremonies. Varsity and junior varsity football games are currently played at Golden Valley High School's Veteran's Stadium, soccer practice and games are currently held at the soccer fields located on the southeast corner of the Merced High School campus, and commencement ceremonies are currently held at Merced College's Stadium 76 - Don Odishoo Field. The project will not be used by other high schools.

2.3 Significant Unavoidable Effects of the Project

The environmental effects of the project that are significant and unavoidable are listed below in Table 2-1.

Table 2-1
Significant Unavoidable Impacts

EIR Section	Impact/Mitigation Measure/Significance
6.1 **Noise**	**Impact:** Operation of the stadium would result in noise levels that would exceed City of Merced noise standards at residences north of the stadium. **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** The following measures shall be implemented to reduce long-term

	operational noise impacts: ***MM 6.1(a):*** Bleachers shall be constructed with solid risers between the spectator seats and floor, or plywood backing shall be installed along the rear vertical face of the bleachers. ***MM 6.1(b):*** Any exterior mounted amplified sound/PA system speakers shall be directed at a downward angle and away from the nearest offsite residential land uses. ***MM 6.1(c):*** To the extent practical, exterior mounted amplified sound/PA system speakers shall be mounted in locations that would provide shielding from line-of-sight of nearby residential land uses. **Significance After Mitigation:** Implementation of Mitigation Measure MM 6.1(a) would reduce event noise levels, particularly spectator noise, at nearby residential land uses by approximately 3 dBA. Additional mitigation measures have also been included to further reduce operational noise levels associated with the proposed amplified sound/PA system. However, the effects of these measures cannot be quantified at this time. Nonetheless, predicted noise levels at the nearest residential land uses would still be projected to exceed the City of Merced's noise standards. **Level of Significance with Mitigation:** Significant and unavoidable

2.4 Potentially Significant Effects of the Project That Can be Mitigated to a Less Than Significant Level

Table 2-2 identifies the potentially significant effects of the project that can be reduced to a less than significant level or avoided if MUHSD incorporates the listed mitigation measures in the project.

Table 2-2
Potentially Significant Impacts and Mitigation Measures

EIR Section	Impact/Mitigation Measure/Significance
7.1 Biological Resources	**Impact:** The proposed project could have a substantial adverse effect on special status bats and bird species. . **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** ***MM 7.1(a): Special Status Bats*** 1. <u>Pre-construction Surveys</u>: Prior to the onset of construction activity, a CDFW-approved biologist will conduct pre-construction surveys for active roosting, breeding, or hibernacula sites (roosts) in large trees within the project area. Construction will not take place as long as a roost site is occupied. Therefore, depending on when construction begins, bat surveys should be timed to be prior to the change in season (maternity vs. hibernation) so that special status bats can be correctly excluded without take (see seasons below). If no active bat roosts, breeding, or hibernacula sites are detected, no further action is required. 2. <u>Avoidance & Minimization</u>: a. If any active bat sites are discovered or if evidence of recent occupation is established, the following measures will be implemented in order to minimize impacts on special status bats: i. Construction will be scheduled to minimize impacts upon pallid bats. Type and

Table 2-2
Potentially Significant Impacts and Mitigation Measures

	status of active roosts shall be determined, and bat eviction shall be undertaken in a manner that does not exclude bats during times of inclement weather, or exclude females from young still in a roost. ii. Hibernation sites with evidence of prior occupation will be sealed before the hibernation season (November–March), and nursery sites will be sealed before the nursery season (April–August). iii. If the site is occupied by the bats, then construction will occur outside the hibernation season (for hibernacula), and after August 15 (for nursery colonies). If exclusion devices are used, they will be employed based on current best practices and will be regularly monitored by a qualified biologist. ***MM 7.1(b): Special Status Birds*** 1. <u>Avoidance.</u> If feasible, any vegetation removal or ground disturbance will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction is at risk of being delayed due to actively nesting birds and their required protective buffers. 2. <u>Pre-construction Surveys.</u> a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days of the initiation of disturbance activities. This survey will cover: i. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson's hawk – 0.5 mile, other raptor species such as northern harrier – 500 feet, non-raptor species (Nuttall's woodpecker, magpie, tricolored blackbird, etc. – 300 feet)). ii. Survey protocol developed by the Swainson's Hawk Technical Advisory Committee (TAC) should be followed, which includes survey timing and requirements for repeated visits. b. If no active nests are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then minimization measures (described below) shall be implemented. 3. <u>Minimization/Establish Buffers</u>. a. Special status bird species and MBTA-protected species: If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area to ensure that the buffer is adequate and that the nest is not stressed and/or abandoned. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest. 4. <u>If avoidance is not possible</u> a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include, but are

Table 2-2
Potentially Significant Impacts and Mitigation Measures

	not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate credits from an approved mitigation bank or land trust servicing the Merced County Area; 3) Payment of in-lieu fees. **Level of Significance with Mitigation:** Less than significant
7.2 **Cultural Resources**	**Impact:** Project construction and site preparation activities could potentially disturb previously undiscovered subsurface historical, archaeological resources, or human remains. **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** ***MM 7.2(a):*** If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the District on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. If the resources are determined to be unique historical resources as defined under § 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any historical artifacts recovered as a result of mitigation shall be provided to an appropriate institution or person who is capable of providing long-term preservation to allow future scientific study. ***MM 7.2(b):*** In the event that subsurface prehistoric archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. If the resources are determined to be unique prehistoric archaeological resources as defined under § 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any prehistoric archaeological artifacts recovered as a result of mitigation shall be provided to an appropriate institution or person who is capable of providing long-term preservation to allow future scientific study. ***MM 7.2(c):*** In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) § 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC § 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The

Table 2-2
Potentially Significant Impacts and Mitigation Measures

	NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC § 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment. **Level of Significance with Mitigation:** Less than significant
7.3 **Geology and Soils**	**Impact:** Project construction and site preparation activities could potentially disturb previously undiscovered subsurface paleontological and geologic resources. **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** ***MM 7.3:*** In the event that unique paleontological or geologic resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified paleontologist shall be consulted to determine whether the resource requires further study. The qualified paleontologist or geologist shall make recommendations to the District on the measures that shall be implemented to protect the discovered resources, including but not limited to, excavation of the finds and evaluation of the finds. If the resources are determined to be significant, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any paleontological or geologic resources recovered as a result of mitigation shall be provided to an appropriate institution or person who is capable of providing long-term preservation to allow future scientific study. **Level of Significance with Mitigation:** Less than significant
7.4 **Noise**	**Impact:** Construction and site preparation activities would result in a substantial temporary increase in ambient noise levels in the project vicinity. **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** ***MM 7.4(a):*** Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m. Construction activities shall be prohibited on Sundays and legal holidays. ***MM 7.4(b):*** Construction truck trips shall be scheduled, to the extent feasible, to occur during non-peak hours and truck haul routes shall be selected to minimize impacts to nearby residential dwellings. ***MM 7.4(c):*** Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. ***MM 7.4(d):*** Stationary construction equipment (e.g., portable power generators) should be located at the furthest distance possible from nearby residences. If deemed necessary, portable noise barriers shall be erected to sufficiently shield nearby residences from direct

Table 2-2
Potentially Significant Impacts and Mitigation Measures

	line-of-sight of stationary construction equipment. ***MM 7.4(e):*** When not in use, all equipment shall be turned off and shall not be allowed to idle. Provide clear signage that posts this requirement for workers at the entrances to the site. **Level of Significance with Mitigation:** Less than significant
7.5 **Transportation**	**Impact:** Operation of the project could conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, considering all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** ***MM 7.5(a):*** Traffic signals shall be modified to implement overlap phasing of the State Route 59/Olive Avenue northbound right-turn with the westbound left-turn phase. ***MM 7.5(b):*** The Merced High School Driveway access to Olive Avenue shall be modified to left-in, right-in and right-out only. To accomplish this, a raised median island shall be extended across the intersection along the center of Olive Avenue. With the extension of the raised median island, southbound left-turns would need to be redirected. Southbound left-turning traffic from Merced High School Driveway would need to make a right-turn onto Olive Avenue, proceed to make a legal eastbound to westbound U-turn on Olive Avenue, and then continue eastbound on Olive Avenue past Merced High School Driveway. ***MM 7.5(c):*** The "G" Street/Olive Avenue intersection shall be modified to convert the southbound through-right lane to a through lane and stripe a southbound right-turn lane. **Level of Significance with Mitigation:** Less than significant
7.6 **Transportation**	**Impact:** Stadium events will result in a concentration of cars, a demand for parking and a need for pedestrians to safely access the stadium. **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** ***MM 7.6:*** The District shall prepare a Traffic Management and Parking Plan for stadium operations to mitigate potential traffic conflicts, parking demand and potential safety hazards. The plan shall be developed in coordination with the City of Merced and should involve the use of traffic and parking attendants, designated safe walking areas for pedestrians, temporary traffic controls at intersections and driveways, and communication/coordination with nearby property owners, as necessary. **Level of Significance after Mitigation:** Less than significant
7.7 **Tribal Cultural Resources**	**Impact:** There is the potential for undiscovered tribal cultural resources to be present that could be disturbed or damaged by construction and/or site preparation activities. **Level of Significance without Mitigation:** Potentially significant **Mitigation Measures:** ***MM 7.7***: If tribal cultural resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified professional with expertise in tribal cultural resources shall be consulted to recommend an

Table 2-2
Potentially Significant Impacts and Mitigation Measures

	appropriate course of action with the input of potentially affected tribes. If it is determined that the project may cause a substantial adverse change to a tribal cultural resource, mitigation measures to be considered should include those identified in Public Resources Code Section 21084.3. **Level of Significance with Mitigation:** Less than significant

2.5 Alternatives to the Proposed Project

Pursuant to CEQA Guidelines Section 15126.6, an EIR must describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project; it must also evaluate the comparative merits of the alternatives.

The objectives of MUHSD in proposing the project are:

- To provide a new high school football stadium on the Merced High School campus to allow home football games to be played on campus. This is very important to the Merced High School community and will eliminate the need to host "home" football games at Golden Valley High School's Veteran's Stadium.
- To provide an improved venue for other MHS sporting events.
- To provide a facility capable of accommodating on-campus graduation ceremonies, instead of using Merced College's Stadium 76 - Don Odishoo Field.
- To utilize existing stadium infrastructure including lighting, restrooms, and concessions.

Two alternatives were considered, one of which was a "No Project" alternative as required by CEQA. The other alternative evaluated an alternate location on the MHS campus for the stadium. The alternative site is located on the southeast corner of the existing high school campus. Alternative designs were also considered and

The "No Project" alternative is environmentally superior to the proposed project because it would not result in an increase in noise levels at nearby residences or any other potential project impact. However, this alternative cannot attain any of the project objectives

The "Alternative On-Site Location" alternative is also environmentally superior to the project as it would not result in an increase in noise levels at nearby residences site, and would also avoid impacts related to biological resources because it would not be located near the eucalyptus trees and Black Rascal Creek to the north of the campus. However, this alternative does not meet the project objective to utilize existing infrastructure including lighting, restrooms, and concessions.

2.6 Areas of Controversy

CEQA Guidelines Section 15123 requires that this summary identify any "areas of controversy known to the Lead Agency including issues raised by agencies and the public." At this time, there are no areas of potential controversy known to the District.

2.7 Issues to be Resolved

CEQA Guidelines Section 15123 requires that this summary "identify issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects." This Draft

EIR has not identified any issues that remain to be resolved and all project impacts can be mitigated to a less than significant level except for the increase in ambient noise levels at nearby residences north of the stadium. The alternatives to the project would not meet important project objectives and are therefore not considered feasible.

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3. Project Objectives, Location, and Description

3.1 Project Title, Lead Agency, and Lead Agency Contact Information

Project Title: Merced High School Stadium Project
Lead Agency and Project Sponsor:

Merced Union High School District
P.O. Box 2147
Merced, California 95344

Lead Agency Contact Person:

Ted Walstrom, CSRM
Director of Facilities & Planning
Telephone: (209) 325-2243
Email: twalstrom@muhsd.org

3.2 Lead Agency and Project Proponent: Merced Union High School District (MUHSD)

The Merced Union High School District is a 9th through 12th grade public school system that serves approximately 10,500 students. The District's students come from the cities of Atwater, Livingston, and Merced, and outlying unincorporated areas Merced County, including the communities of Ballico, Bear Creek, Cressey, El Nido, Snelling, Tuttle, and Winton. MUHSD operates six comprehensive high schools (grades 9-12), one continuation high school, one community day high school, one independent study high school, and one adult school.

3.3 Project Objectives

The objectives of MUHSD in proposing the project are:

- To provide a new high school football stadium on the Merced High School campus to allow home football games to be played on campus. This is very important to the Merced High School community and will eliminate the need to host "home" football games at Golden Valley High School's Veteran's Stadium.
- To provide an improved venue for other MHS sporting events.
- To provide a facility capable of accommodating on-campus graduation ceremonies, instead of using Merced College's Stadium 76 - Don Odishoo Field.
- To utilize existing stadium infrastructure including lighting, restrooms, and concessions.

3.4 Project Location

General: Figure 3-1 shows the location of the project location in relation to the City of Merced. Figure 3-2 provides an aerial view of the project site.

Table 3-1 provides additional information on the project site.

As shown on Figure 3-2, the proposed three-acre stadium site is bounded to the north by Black Rascal Creek and to the west, south, and east by the existing Merced High School campus.

TABLE 3-1
Project Location

Jurisdiction	City of Merced
General Site Boundaries	Black Rascal Creek to the north, existing Merced High School campus to the west, south, and east.
Project Area Acreage and Merced County Assessor's Parcel Number (APN)	Total Project Area: 3 acres APN 236-180-011-000
Property Owner	Merced Union High School District
USGS Map	Merced, California Quadrangle 7.5 Minute Series
Latitude & Longitude	37°19'20.5"N; -120°28'19.2"W
Section, Township, and Range	Section 18, Township 7 South, Range 14 East, MDB&M
Elevation	Approximately 173 feet above mean sea level

3.5 Project Description

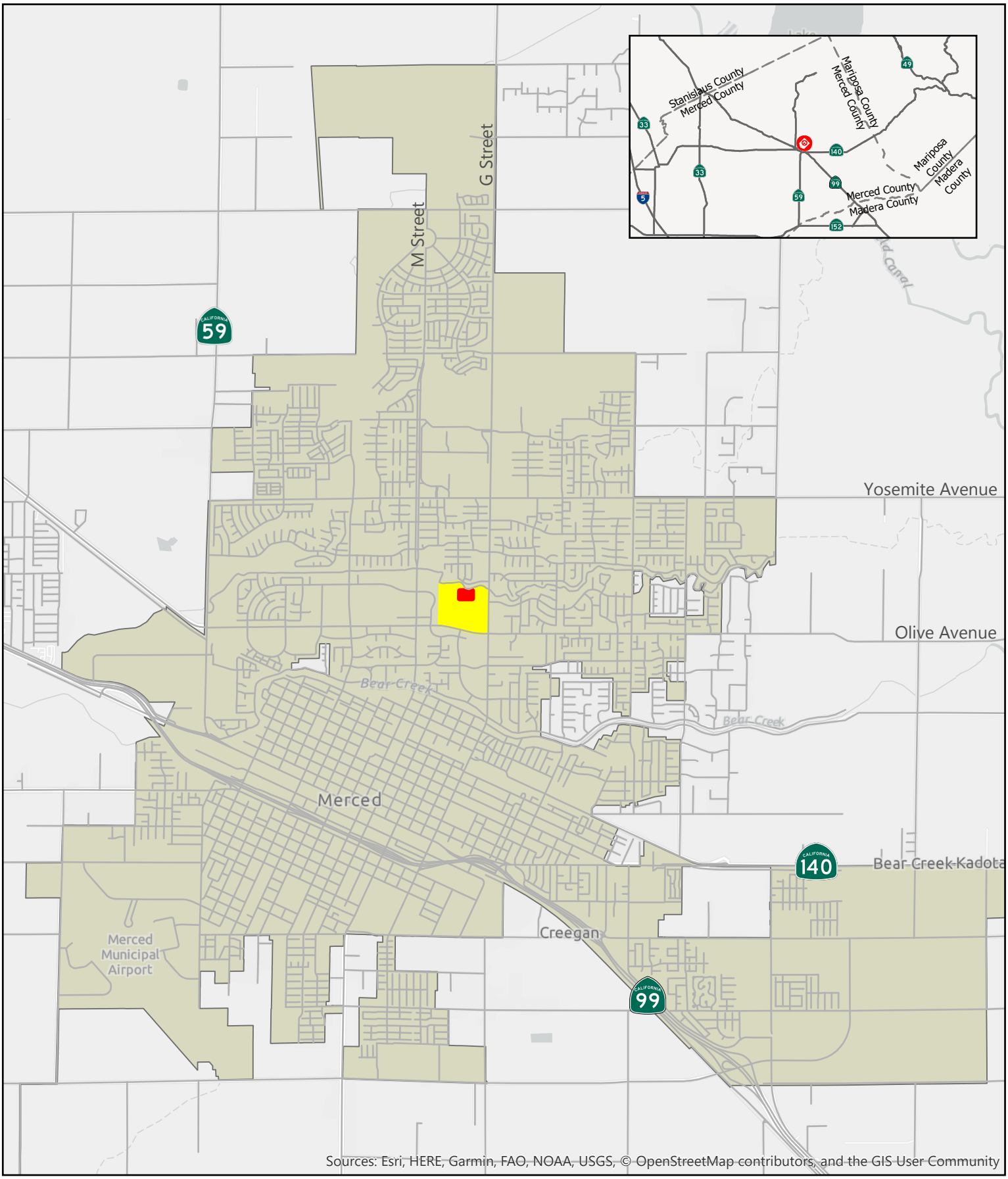
The Merced High School Stadium Project (project) involves the construction and operation of a 3,100-seat high school football stadium on the existing Merced High School campus.

Grandstands will be located on the north and south sides of the stadium, connected by concrete walkways around the perimeter of the football field to an entry gate structure located at the southeast corner of the stadium and to an existing concessions/restroom building on the east side of the stadium. The project includes the construction of walking paths connecting the stadium to existing parking on the southern portion of the high school campus. The grandstands will be completed in two phases with the first 2,000 seats on the south (home) side being completed in the initial phase, and an additional 1,100 seats on the north (visitor) side, as well as conversion from natural to artificial turf, being completed in the second phase.

The project will utilize the existing lighting which has been in place since 2009. Project lighting will be upgraded to LED lighting with the second phase. The project will include a new Public Address (PA) system but will be comparable in wattage to the existing PA system. The project site has been used as an athletic field since 1986. Existing uses at the project site include varsity, junior varsity, and freshman football practice, freshman football games, annual Homecoming varsity and junior varsity football games, and youth football league practice. Additional future uses include varsity and junior varsity football games, soccer practice, soccer games, and commencement ceremonies. Varsity and junior varsity football games are currently played at Golden Valley High School's Veteran's Stadium, soccer practice and games are currently held at the soccer fields located on the southeast corner of the Merced High School campus, and commencement ceremonies are currently held at Merced College's Stadium 76 - Don Odishoo Field. The project will not be used by other high schools.

3.6 Project Schedule

MUHSD anticipates the first phase of the stadium would begin construction in Spring 2020 and be completed by Fall 2020. The timing for the second phase is uncertain.



Project Location Figure 3-1

Merced High School Stadium Project
Merced Union High School District

Merced High School | Project Site | Merced City Limit

ODELL Planning & Research, Inc.
Environmental Planning • School Facility Planning • Demographics

0 0.5 1 2 Miles

N

Project Site Figure 3-2

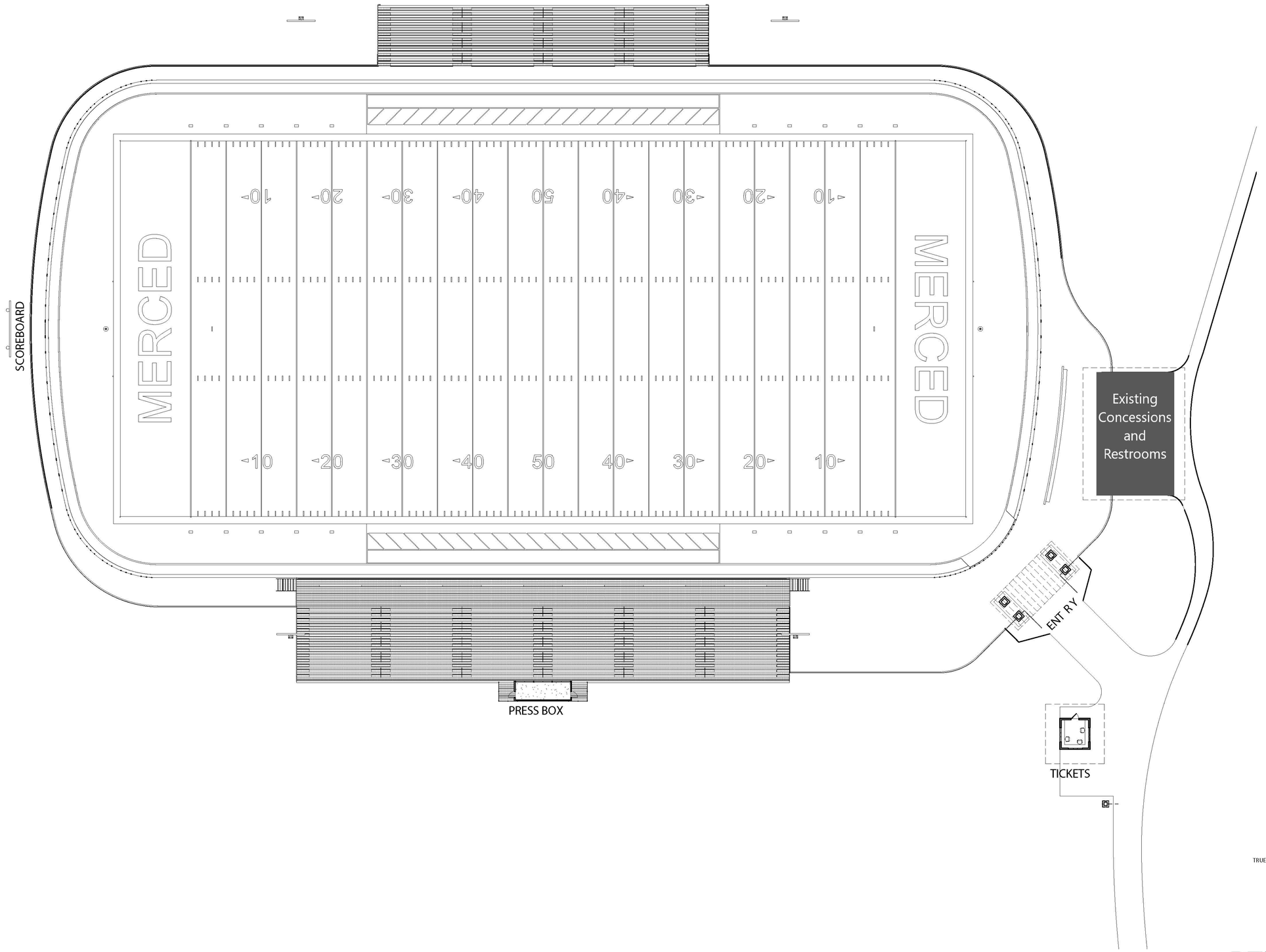
Merced High School Stadium Project
Merced Union High School District

ODELL Planning & Research, Inc.
Environmental Planning • School Facility Planning • Demographics

Merced High School Project Site

0 200 400 800 Feet

N



MERCED HIGH SCHOOL - FOOTBALL STADIUM

ENLARGED OVERALL SITE PLAN

Figure 3-3

CALIFORNIA DESIGN WEST ARCHITECTS INC.

3.7 Actions Required to Implement Project

The Merced Union High School District is the Lead Agency[2] for the project. MUHSD must undertake the following actions to implement the project:

- Comply with the California Environmental Quality Act by preparing and processing this EIR and certifying the EIR at a District Board meeting.
- Approve the project at a District Board meeting.
- Construct the stadium and any water, sewer, storm drainage, and street improvements required for the project.

3.8 Other Public Agencies Whose Approval is Required

Implementation of the project would require approvals from the following Responsible Agencies:

- The California Department of Education and the California Division of the State Architect must approve the stadium construction plans.
- Compliance with any California Department of Toxic Substances Control requirements.
- The City of Merced for any off-site street or other improvements.

3.9 Trustee Agencies

The California Department of Fish and Wildlife is the only Trustee Agency identified for the project. The agency has jurisdiction over biological resources the project may impact.

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[2] Under CEQA:

"Lead Agency" means the "public agency which has the principal responsibility for carrying out or approving a project."

"Responsible Agency" means a "public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term Responsible Agency includes all public agencies other than the Lead Agency which have discretionary approval power over the project."

"Trustee Agency" means a "state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California."

4. Environmental Setting[3]

4.1 Regional Setting

The regional setting for the proposed project is summarized below:

- The project site is located in the City of Merced. The City of Merced is situated in northeast Merced County. Merced is the most populous of Merced County's six incorporated cities and is the county seat.
- Per the California Department of Finance, the year 2019 population for the City of Merced is estimated at 87,110. The *Merced Vision 2030 General Plan* projects that the City's population will grow to approximately 155,000 persons by 2030.
- Merced County is in the northern San Joaquin Valley, which comprises the southern half of the Central Valley of California.
- Regional access to the City of Merced includes State Routes 99, 140, and 59, as well as Amtrak and Merced Regional Airport.
- Merced lies within the Northern Region of the San Joaquin Valley Air Basin. The climate and meteorology within the air basin are conducive to the entrapment and creation of air pollution. The air basin regularly exceeds state and/or federal standards for ozone and particulate matter, and therefore is in non-attainment for these pollutants.
- Merced County is the sixth most agriculturally productive county in California. The leading agricultural products based on value are milk, almonds, chicken, cattle, sweet potatoes and tomatoes. A high percentage of farmland in the area is designated Prime Farmland and many parcels are protected by Williamson Act agricultural conservation contracts. Parcels under contract are subject to stringent development restrictions for a minimum of ten years from the inception of the contract or its most recent renewal. Agricultural lands surrounding Merced serve as a primary economic base for the community.

4.2 Project Setting

Land Use: The project site is located in the northern central portion of the existing Merced High School campus, within the City of Merced. The project site has been used as a campus football field since 1986 and lights have been in place since 2009.

Public Land Use Policy: The *Merced Vision 2030 General Plan* is the primary land use planning document for land within the Merced city limits as well as the City's Sphere of Influence and Planning Area. The City of Merced General Plan Land Use Diagram designates the existing high school site for "School" use. The area immediately north is designated Open Space/Park Recreation along Black Rascal Creek, with Low Density Residential and Commercial Office uses beyond. Areas to the east and west are designated High to Medium Density Residential. Areas to the southwest, south, and southeast include areas designated and developed with Commercial Office, Neighborhood Commercial, and Regional Community Commercial uses.

[3]Unless otherwise noted, the sources for the information in Section 4 are the *Merced Vision 2030 General Plan and the Merced Vision 2030 General Plan Draft Program Environmental Impact Report,* and Odell Planning & Research.

Land Use Designations: The project site and adjacent parcels have the following designations:

- ***Public/Government or School (P/G or SCH):*** "To provide public facilities such as schools, fire stations, police stations, public buildings (libraries, courthouse, public offices, etc.) and similar types of public uses and facilities."
- ***Open Space-Park/Recreation (OS-PK):*** "To provide public and private open space for outdoor recreation both passive and active. OS-PK areas may be designated in areas containing public parks, golf courses, greens, commons, playgrounds, landscape areas, and similar types of public and private open spaces."

Road System: The existing and planned road system in the project vicinity is described in Section 7.5 and the Draft Traffic Impact Analysis (Volume II, Appendix E). The streets that would provide direct access to the proposed project are as follows:

- ***"G" Street*** is an existing north-south four-lane divided minor arterial adjacent to the proposed Project. In this area, "G" Street is a two-lane undivided arterial north of Farmland Road, a three-lane arterial divided by a two-way left-turn lane between Farmland Road and Bellevue Road, a four-lane divided arterial between Bellevue Road and Cardella Road, a two-lane undivided major arterial between Cardella Road and Mercy Avenue, a five-lane divided arterial between Mercy Avenue and Yosemite Avenue, a four-lane arterial divided by a two-way left-turn lane between Yosemite Avenue and El Portal Drive, a four-lane divided arterial between El Portal Drive and Bear Creek Drive, a four-lane arterial divided by a two-way left-turn lane between Bear Creek Drive and 13th Street, and a two-lane undivided collector south of 13th Street. The *Merced Vision 2030 General Plan* designates "G" Street as a four-lane divided arterial north of Old Lake Road, a six-lane major arterial between Old Lake Road and Bellevue Road, a four-lane major arterial between Bellevue Road and Yosemite Avenue, a four-lane minor arterial between Yosemite Avenue and Olive Avenue, a four-lane divided arterial between Olive Avenue and 13th Street, and a two-lane undivided collector south of 13th Street. Furthermore, the *Merced Vision 2030 General Plan* acknowledged that "G" Street would exceed LOS D as a four-lane divided arterial between Olive Avenue and Bear Creek Drive. However, City Council made appropriate findings to designate LOS E as the criteria of significance for "G" Street as four-lane facility between Olive Avenue and Bear Creek Drive.
- ***Olive Avenue*** is an existing east-west six-lane divided arterial adjacent to the proposed Project. In this area, Olive Avenue is a six-lane divided major arterial between State Route 59 and "R" Street, a six-lane divided arterial between "R" Street and "G" Street, a two-lane arterial divided by a two-way left-turn lane between "G" Street and McKee Road, and a two-lane undivided arterial east of McKee Road through the City of Merced SOI. Olive Avenue is a four-lane divided major arterial west of State Route 59 through the City of Merced SOI and is known as Santa Fe Drive. The *Merced Vision 2030 General Plan* designates Olive Avenue as a six-lane divided major arterial west of "G" Street, a four-lane divided arterial between "G" Street and Parsons Avenue, and a two-lane divided arterial east of Parsons Avenue. Furthermore, the *Merced Vision 2030 General Plan* acknowledged that Olive Avenue would exceed LOS D as a four-lane divided arterial between "G" Street and Parsons Avenue. However, City Council made appropriate findings to designate LOS E as the criteria of significance for Olive Avenue as four-lane facility between "G" Street and Parsons Avenue.

Pedestrian and Bicycle Facilities: Currently, walkways exist adjacent to the proposed Project site along Olive Avenue, Park Avenue and "G" Street. *The Merced Vision 2030 General Plan* recommends that walkways be implemented during all phases of a Project to guarantee adequate and safe pedestrian facilities at all times. Since the surrounding Project site is well-developed with sidewalks, pedestrians will have adequate and safe pedestrian facilities at all times.

Currently, bikeways exist in the vicinity of the proposed Project site along State Highway 59, Olive Avenue and "G" Street. State Route 59 contains a Class I bike path along the east side south of Olive Avenue. Olive Avenue contains a Class III bike route between "R" Street and "G" Street. "G" Street contains a Class II bike lane between Mercy Avenue and 13th Street and a Class III bike route between 13th Street and Childs Avenue. The *Merced Vision 2030 General Plan* recommends that a Class II bike lane be implemented on Olive Avenue east of "G" Street through the City of Merced SOI. Furthermore, the *Merced Vision 2030 General Plan* recommends that a Class II bike lane be implemented on "G" Street between Farmland Avenue and Mercy Avenue and between Childs Avenue and Mission Avenue.

Transit Services: The Bus, Merced's Regional Transit System, is the single public transportation service provider for all of Merced County. At present, there are two routes - M4 and M6 - that have stops adjacent to or in the vicinity of the proposed Project. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and available funding.

Route M4 runs on "G" Street adjacent to the proposed Project. Its nearest stop to the Project is located along the west side of "G" Street approximately 150 feet north of Olive Avenue. Route M4 operates at 30-minute intervals on weekdays and 90-minute intervals on weekends. This route provides a direct connection to East Campus, Save Mart, Raley's, Merced College, Mercy Medical, Health Department, Family Care Clinic, Fairgrounds, and Mental Health.

Route M6 runs on Olive Avenue east of "G" Street. Its nearest stop to the Project is located along the west side of "G" Street approximately 475 feet south of Olive Avenue. Route M6 operates at 45-minute intervals on weekdays and weekends. This route provides a direct connection to Burbank Park, Save Mart, Hansen Park, Santa Fe Apartments, El Tareb Market, and the Transportation Center.

Fire Protection and Emergency Medical Services: The Merced Fire Department provides fire protection services to a 23.3-square-mile service area. The department has five stations, with the closest to the project site being Station 53, located at 800 Loughborough Drive in Merced, less than one mile from the project site. The department has authorized staffing of 63 sworn personnel and three non-sworn personnel with a daily minimum staffing of 18. A number of highly trained special operation's teams are utilized within the department and they provide Hazardous Materials Response, Technical Rescue, Medical Services, Aircraft Rescue Firefighting (ARFF) and Swift Water Rescue responses.

Police Protection: Police protection services in the City of Merced are provided by the Merced Police Department. The police department operates from the main station located at 611 W. 22nd Street in Merced, approximately 1.5 miles from the project site. The department is staffed by 80 plus sworn with at least six deputies and a sergeant on duty at any one time.

Water Service and Supply: The City of Merced provides water for domestic and commercial uses and for fire suppression to properties within its service area through a system of groundwater wells, storage tanks, and interconnected water main pipelines. The City's municipal water system relies entirely upon groundwater resources to supply the current daily water demand. The Merced Groundwater Subbasin from which the City draws its groundwater has been identified as critically overdrafted. The City also participates in several regional water management alliances – including the Merced Area Groundwater Pool Interests (MAGPI), the Merced Integrated Water Management

Authority (MIRWMA), and the Regional Water Management Group (RWMG) – actively assisting in meeting the goals and objectives of local and regional efforts.

The Sustainable Groundwater Management Act (SGMA) was signed into law in 2014 to remedy unsustainable groundwater depletion in groundwater basins in California. SGMA requires the development and adoption of Groundwater Sustainability Plans (GSPs) by 2020 and that all high and medium priority groundwater basins must reach sustainability by 2040. SGMA gives local agencies the authorities to manage groundwater in a sustainable manner and allows for limited state intervention when necessary to protect groundwater resources.

The Merced Groundwater Subbasin is one of 21 basins in the State of California identified by the California Department of Water Resources as critically overdrafted and one of 48 basins considered high priority. Consistent with the requirements of the Sustainable Groundwater Management Act (SGMA), water management and land management agencies in Merced Subbasin have formed three Groundwater Sustainability Agencies (GSAs): the Merced Irrigation-Urban Groundwater Sustainability Agency, the Merced Subbasin Groundwater Sustainability Agency, and the Turner Island Water District Groundwater Sustainability Agency. The three GSAs are collaborating on developing one Groundwater Sustainability Plan for the entire Merced Groundwater Subbasin by January 2020. To develop the Plan, the GSAs will review groundwater conditions and identify means to ensure the long-term sustainability of the Merced Groundwater Subbasin.

Wastewater Service: The City of Merced collects wastewater through a system of underground pipelines that convey sewage flows to the City's Wastewater Treatment Facility (WWTF), which is located west of the urbanized area of the City. The *Merced Vision 2030 General Plan* and accompanying EIR, the City's *Sewer System Management Plan,* and the *Wastewater Collection System Master Plan* provide information on the City's wastewater treatment facilities and projected wastewater treatment demands.

Stormwater Drainage Facilities: The City of Merced maintains and services stormwater drainage infrastructure within the City. The City's storm drain system consists of underground storm drain systems, detention ponds, underground storage pipes, pump stations, and open channels. According to the City's *Storm Drain Master Plan*, the project site is located in Watershed C that drains into Black Rascal Creek at several locations.

Solid Waste Service: The City of Merced provides curb-side garbage, recycling, and green waste pick-up and hauling within the City. Solid waste collected in Merced is taken to the Highway 59 Landfill and the Highway 59 Compost Facility, located approximately one mile north of Merced, which is owned by the Merced County Association of Governments and operated by the County of Merced. According to *Merced Vision 2030 General Plan Draft Program Environmental Impact Report*, the Highway 59 Landfill has sufficient capacity to accommodate solid waste disposal demands through the buildout of the *Merced Vision 2030 General Plan*.

5. Approach to Impacts Evaluation

5.1 Approach

This EIR identifies and analyzes the potential impacts of the project on the environmental resources and conditions listed under CEQA Appendix G, describes feasible mitigation measures that could be incorporated in the project to avoid the impacts or reduce them to an insignificant level, and determines the significance of the impacts without or with mitigation. The environmental resources and conditions listed in Appendix G are categorized as follows: aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation/traffic, utilities/service systems, and mandatory findings of significance.

Under the State CEQA Guidelines, the impacts of a project on an environmental resource or condition may be considered "significant", "less than significant impact with project level mitigation", "less than significant", or "no impact".

CEQA defines a "significant impact" as a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

The "less than significant impacts with project level mitigation" determination applies when an impact that would otherwise be significant is avoided or reduced to an insignificant level through the incorporation of feasible mitigation measures into the project. Under the Guidelines, "feasible means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

The "less than significant" determination applies when the project would not result in a significant effect on an environmental resource or condition. This determination is used only in cases where no mitigation measures are required to reduce an impact to a less than significant level.

The "no impact" determination applies when a project would have no impact on an environmental resource or condition, or the resource or condition does not apply to the project or its location. The no impact determination is used only in cases where no mitigation measures are required to avoid or eliminate an impact.

5.2 Thresholds of Significance

When preparing an EIR, the Lead Agency must establish thresholds of significance to use in determining the significance of environmental effects. Per the Guidelines, "a threshold of significance is an identifiable quantitative, qualitative, or performance level of an environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be less than significant."

The thresholds of significance used for this EIR are described in Sections 6, 7, 8, and 9 and are the same as the environmental issues listed in the Guidelines, Appendix G, Environmental Checklist Form.

5.3 Existing Laws, Regulations, Policies, and Mitigation Measures

Introduction: In some cases, an impact that might appear to be significant is less than significant because it is subject to state, regional, or local laws, regulations, or policies, the application of which will reduce the impact to a less than significant level. Preparation of this EIR included a review of

applicable laws, regulations, and policies to determine if they would prevent or reduce the potentially significant impacts of the proposed project. This EIR does not cite the laws, regulations, and policies as mitigation measures because they would apply to the project regardless of the outcome of the EIR.

For the proposed project, applicable laws, regulations, and policies include but are not limited to the following:

State of California

- *Title 24, California Code of Regulations, Part 1 through Part 12:* Specifies the State of California building regulations for public schools. The Division of the State Architect is responsible for administering the regulations.

San Joaquin Valley Air Pollution Control District
(https://www.valleyair.org/rules/1ruleslist.htm)

- *Regulation VIII – Fugitive PM10 Prohibitions*
- *Regulation IX – Mobile and Indirect Sources*

City of Merced

- *Merced Vision 2030 General Plan*
- *Draft Program Environmental Impact Report Merced Vision 2030 General Plan*
- *Merced Municipal Code, including Zoning Ordinance*
- *City of Merced Standard Designs*

5.4 Technical Background Studies

The analyses in this EIR of several resources and conditions are based on technical background studies in the areas of air quality, greenhouse gas emissions, noise and vibration, and transportation. The studies are listed in the Table of Contents and Section 12 of this draft EIR and are presented in Volume II of the EIR.

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6. Significant and Unavoidable Environmental Impacts

6.1 Noise: Increase in Ambient Noise Levels During Stadium Operation

Issue and Threshold of Significance: Would the project result in the generation of a substantial 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?

Analysis: Noise generated by athletic events involving large spectator crowds and/or the use of amplified sound/PA systems would result in a substantial increase in ambient noise levels at nearby land uses. Noise-related impacts associated with long-term operations of the proposed project are discussed as follows:

The proposed project includes the construction of a high school football stadium with an amplified sound/ PA system. It is anticipated that the stadium would primarily be used during the hours of 7:00 p.m. and 10:00 p.m. Noise generated by events held at the proposed stadium would have the greatest potential for adverse noise impacts, given the potential to attract larger participant/spectator crowds.

Based on noise measurements conducted for similar projects, average-hourly noise levels associated with outdoor play areas and recreational facilities that draw smaller spectator crowds (i.e.., soccer fields, baseball fields, basketball courts, swimming pools) typically average less than 65 dBA L_{eq} at approximately 50 feet. Intermittent noise events typically associated with such uses include elevated voices, whistles, and the hitting of balls. Maximum instantaneous noise levels associated with activities conducted at smaller ballfields and playgrounds, excluding the use of amplified sound/PA systems, can reach levels up to approximately 70 dBA at 100 feet, for brief periods of time.

For larger high school stadiums, representative exterior noise levels measured at various events generally range from approximately 55 to 71 dBA L_{eq} at approximately 250 feet from the source. It is important to note that noise levels at large recreational facilities, such as stadiums, are dependent on various factors including facility design and orientation, the activities conducted, spectator crowd size, the type of amplified sound/PA system installed, as well as speaker placement. In general, noise from amplified sound/PA systems at stadiums tends to dominate the noise environment and occurs on a more frequent basis then noise generated by spectators. For audibility purposes, noise levels of amplified sound/PA systems tend to be approximately 3 to 10 dBA greater than spectator noise. In addition, due to decreased volume levels required to address spectators, the use of multiple speakers placed throughout the stadium tend to generate lower overall noise levels than centrally located amplified sound/PA systems. Other uses commonly associated with high school stadiums, such as band performances, can also result in substantial increases in ambient noise levels. Band performances at similar facilities have measured up to 69 dBA L_{eq} at 400 feet. Maximum instantaneous noise levels associated with activities conducted at stadiums, including the use of amplified sound/PA systems, can reach levels up to approximately 95 dBA at 50 feet, for brief periods of time.

Predicted average-hourly noise levels associated with proposed onsite land uses are summarized in Table 6-1. These levels were calculated using SoundPlan Essential software. It is important to note that these predicted noise levels are based on preliminary site designs and do not account for noise reductions associated with variations in site terrain or noise-reduction design features, such as (e.g., closed bleachers, berms, barriers). Substantial reductions in noise levels can be achieved through the incorporation of various design features (i.e., spectator shielding, elevation changes, amplified

sound/PA speaker placement, stadium orientation, and berms), as well as incorporation of operational limitations.

As noted in Table 6-1 (receivers 3-10 are residential), predicted average-hourly noise levels at nearby residential dwellings would range from approximately 52 to 67 dBA L_{eq}. The City of Merced General Plan hourly equivalent sound level noise standards (L_{eq}/L_{50}) for stationary noise sources is 55 dBA L_{eq} for daytime (7 am to 10 pm) and 45 dBA L_{eq} for nighttime (10 pm to 7 am). Therefore, assuming that activities at the stadium would cease at 10 pm, the City standard of 55 dBA L_{eq} would be exceeded at all residential receivers except 3. Receivers 4-10 are all located north of the stadium (see Figure 6-1). Predicted maximum instantaneous noise levels at these nearest residences would range from approximately 64 to 82 dBA L_{max}. For smaller recreational events not involving large spectator crowds or the use of amplified sound/PA systems, predicted recreational use noise levels at these nearest residential dwellings would be largely masked by traffic noise emanating from area roadways. However, noise generated by recreational events involving large spectator crowds and/or the use of amplified sound/PA systems would result in a substantial increase in ambient noise levels at nearby land uses.

Table 6-1
Predicted Noise Levels at Nearby Land Uses

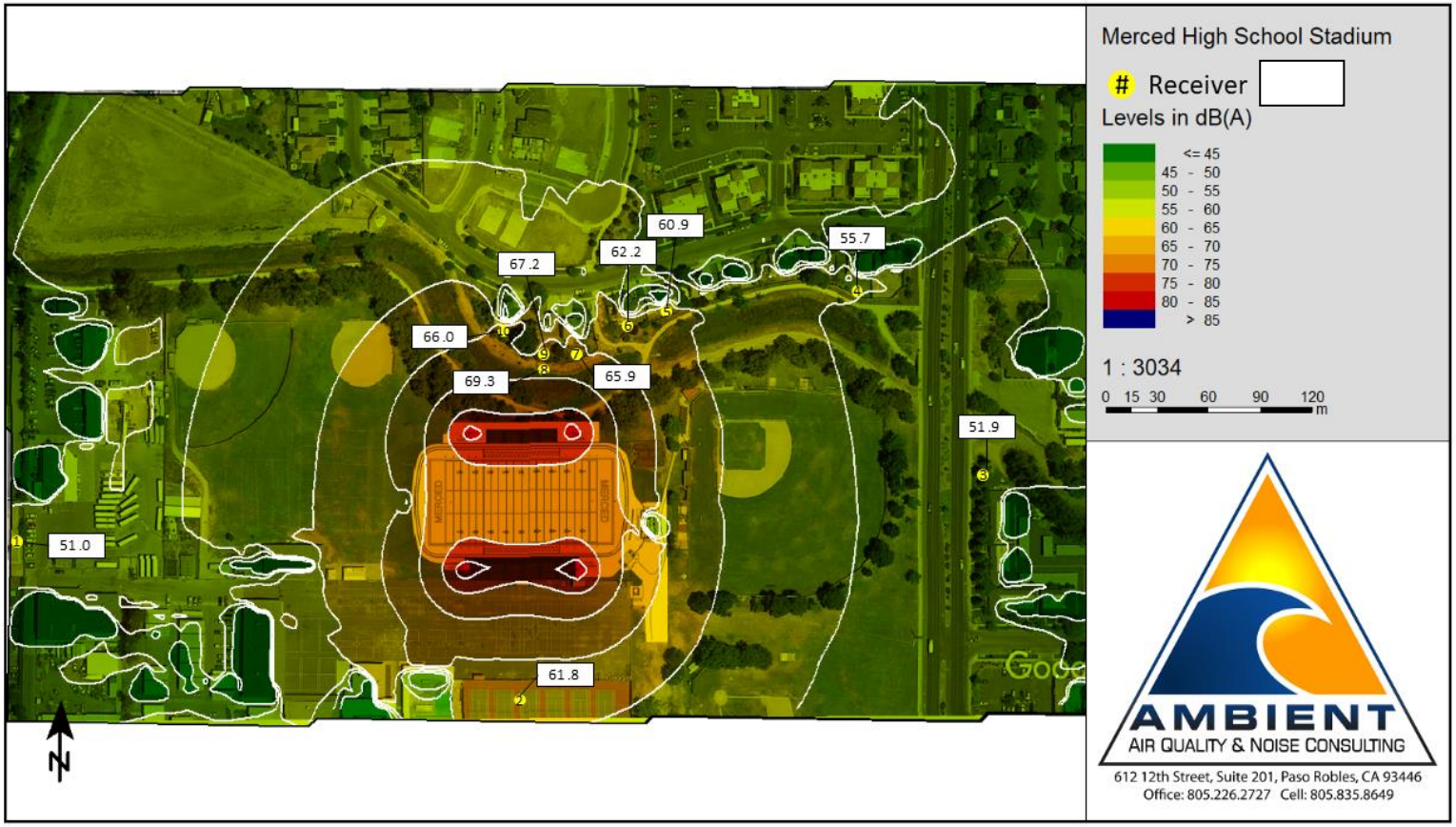
Receiver Number	Distance from Project Boundary (feet)	Predicted Noise Levels (dBA)	
		Average Hourly (L_{eq}/L_{50})	Maximum Instantaneous L_{max}/L_0)
1	700	51.0	62.8
2	215	61.8	75.2
3	605	51.9	63.9
4	525	55.7	67.1
5	235	60.9	76.0
6	200	62.2	78.0
7	145	65.9	81.7
8	135	69.3	84.7
9	135	67.2	82.2
10	170	66.0	80.4

Non-residential land uses include the Valley Baptist Church located to the east across G street, and Buhach Preschool located adjacently to the west of the project site. Exterior noise levels at Valley Baptist Church and Buhach Preschool would be approximately 52 dBA L_{eq}, or less. Based on this noise level and assuming an average exterior-to-interior noise reduction of 25 dBA, predicted interior noise levels at these land uses would be approximately 27 dBA L_{eq}, or less. Predicted interior noise levels at these land uses would not be predicted to exceed the commonly applied interior noise threshold of 45 dBA L_{eq}.

Policy HS-7.13 of the City General Plan provides exemptions from noise source standards. It states that activities at schools are exempt from noise standards provided said activities occur during daytime hours. However, onsite recreational-use activities, particularly activities involving the use of amplified sound/PA systems, would be projected to result in significant increases in ambient noise levels at nearby residential land uses. Activities occurring during the more noise-sensitive nighttime hours may result in increased levels of annoyance and potential sleep disruption to occupants of nearby dwellings.

Figure 6-1

Predicted Average-Hourly Noise Levels



Roadway Traffic

Predicted existing traffic noise levels, with and without the implementation of the proposed project, are summarized in Table 6-2. Predicted increases in future cumulative traffic noise levels along nearby roadways for the proposed project are summarized in Table 6-3. In comparison to existing traffic noise levels, the proposed project would result in a predicted increase in traffic noise levels of approximately 0.2 to 0.8 dBA along area roadways. In future years, the project's contribution to traffic noise levels are projected to decrease slightly. As depicted in Table 6-3, the proposed project would result in increases in traffic noise levels of approximately 0.7 dBA, or less, under future cumulative conditions. As noted earlier in this report, changes in ambient noise levels of approximately 3 dBA, or less, are typically not discernible to the human ear and would not be considered to result in a significant impact.

Table 6-2
Predicted Increases in Existing Traffic Noise Levels

Roadway Segment	Predicted Noise Level at 50 feet from Centerline of Near Travel Lane (dBA CNEL/L_{dn})[1]			
	Existing Without Project	Existing With Project	Difference[2]	Significant Impact?[3]
Olive Avenue west of Merced High School Driveway	67.4	68.2	0.8	No
Olive Avenue between Merced High School Driveway and Park Avenue	67.5	68.2	0.7	No
Olive Avenue between Park Avenue and G Street	67.3	67.9	0.6	No
Olive Avenue east of G Street	65.5	65.8	0.3	No
G Street north of Olive Avenue	67.1	67.3	0.2	No
G Street south of Olive Avenue	66.2	66.4	0.2	No
Park Avenue south of Olive Avenue	59.5	59.8	0.3	No

1. Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the traffic analysis prepared for this project.
2. Difference in noise levels reflects the incremental increase attributable to the proposed project.
3. Defined as a substantial increase in ambient noise levels in excess of the City's exterior noise standard of 65 dBA CNEL.

Table 6-3
Predicted Increases in Future Cumulative Traffic Noise Levels

Roadway Segment	Predicted Noise Level at 50 feet from Centerline of Near Travel Lane (dBA CNEL/L_{dn})[1]			
	Future Without Project	Future With Project	Difference[2]	Significant Impact?[3]
Olive Avenue west of Merced High School Driveway	68.0	68.7	0.7	No
Olive Avenue between Merced High School Driveway and Park Avenue	68.1	68.8	0.7	No
Olive Avenue between Park Avenue and G Street	68.0	68.5	0.5	No

Table 6-3
Predicted Increases in Future Cumulative Traffic Noise Levels

Roadway Segment	Predicted Noise Level at 50 feet from Centerline of Near Travel Lane (dBA CNEL/L_{dn})[1]			
	Future Without Project	Future With Project	Difference[2]	Significant Impact?[3]
Olive Avenue east of G Street	66.5	66.8	0.3	No
G Street north of Olive Avenue	68.7	68.8	0.1	No
G Street south of Olive Avenue	67.8	67.9	0.1	No
Park Avenue south of Olive Avenue	60.3	60.5	0.3	No

1. Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the traffic analysis prepared for this project.
2. Difference in noise levels reflects the incremental increase attributable to the proposed project.
3. Defined as a substantial increase in ambient noise levels in excess of the City's exterior noise standard of 65 dBA CNEL.

Land Use Compatibility

The Merced City General Plan Noise Element includes noise standards for determination of land use compatibility for new land uses. As previously discussed, the City's "normally acceptable" exterior noise standard for schools is 65 dBA CNEL/L_{dn}.

As noted earlier in this report, ambient noise levels in the project area are largely influenced by traffic noise on area roadways. Under future cumulative conditions, with project-generated vehicle traffic included, the predicted 65 dBA CNEL/L_{dn} noise contour for G Street north of Olive Avenue would extend to 145 feet from the roadway centerline. Based on preliminary site plans, the proposed stadium would be located approximately 550 feet from the centerline of G Street. Based on this setback distance, predicted traffic noise levels at the stadium would be 56 dBA CNEL/L_{dn}. As a result, the stadium would not be projected to exceed applicable City noise standards for land use compatibility.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures: The following measures shall be implemented to reduce long-term operational noise impacts:

MM 6.1(a): Bleachers shall be constructed with solid risers between the spectator seats and floor, or plywood backing shall be installed along the rear vertical face of the bleachers.

MM 6.1(b): Any exterior mounted amplified sound/PA system speakers shall be directed at a downward angle and away from the nearest offsite residential land uses.

MM 6.1(c): To the extent practical, exterior mounted amplified sound/PA system speakers shall be mounted in locations that would provide shielding from line-of-sight of nearby residential land uses.

Significance After Mitigation: Implementation of Mitigation Measure MM 6.1(a) would reduce event noise levels, particularly spectator noise, at nearby residential land uses by approximately 3 dBA. Additional mitigation measures have also been included to further reduce operational noise levels associated with the proposed amplified sound/PA system. However, the effects of these measures cannot be quantified at this time. Nonetheless, predicted noise levels at the nearest residential land uses would still be projected to exceed the City of Merced's noise standards.

Level of Significance with Mitigation: Significant and unavoidable

7. Potentially Significant Impacts and Mitigation Measures

7.1 Biological Resources: Effects on Special Status Species

Issue and Threshold of Significance: Would the proposed project 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 (CDFW) or U.S. Fish and Wildlife Service (USFWS)?

Analysis: The project was evaluated for potential impacts to special status species. The essential findings pertaining to special status species (two bat species and five avian species; see Appendix B) are described below:

Special Status Bats: The pallid bat (*Antrozous pallidus*) is a California Species of Special Concern which inhabits deserts, grasslands, scrublands, woodlands and open forests. They are most common in open, dry habitats with rocky areas for roosting. Bridges, buildings, and exfoliating tree bark or hollows are frequently used by this species for roost sites (H.T. Harvey 2004). Pallid bats will roost alone or in both large and small groups. Breeding occurs from October to February. Pups are born from late April to July and are volant at 4 to 6 weeks of age. Breeding colonies disperse between August and October.

Western red bat (*Eumops perotis californicus*) is a California Species of Special Concern. These bats are migratory, spending winter in central and southern coastal California, then occupies inland areas during summer months (Ingles 1965, Zeiner et al. 1990*b*). Foraging habitat associations for this species include grasslands, shrublands, open woodlands and forests, and croplands (Ingles 1965, Reid 2006). Roosting habitat for this bat is primarily within the foliage of trees and shrubs, often in riparian areas or woodland edge habitats close to a water source (Pierson and Rainey 2002, Pierson et al. 2006). Red bats are not colonial or territorial although family/nursery groups will occasionally roost together (Zeiner et al. 1990*b*). The primary threat to western red bat is the loss of riparian habitat, and possibly pesticide use in orchards (Pierson and Rainey 2002, Pierson et al. 2006).

Therefore, within the project area trees and riparian vegetation of the adjacent Black Rascal Creek, including any exfoliating bark and hollows of the mature trees, are potential suitable roosting habitat for these bats. Open water of the creek provides a water and food source for bats, as well as the open fields of the school site itself.

The pallid bat, western red bat and other common bats may roost and breed in or under the bark of trees, in tree or other crevices, and in man-made structures (buildings, creek crossings, etc.) within the project area and the adjacent land. If nursery or hibernation sites are present within the project area, disturbance caused by project construction may be significant. Direct mortality to bats could occur if an occupied roost site is demolished. Vibration, noise, and light caused by construction equipment and personnel could result in roost abandonment, mortality of juvenile bats, or both. Bats are susceptible to both day and night roost disturbances. These types of threats reduce metabolic economy and can impact species survival (Orr 1954, Zeiner et al. 1990b), and should be minimized if any bats roost in the project area.

No evidence of bat occupation was observed during reconnaissance surveys performed by Odell Planning & Research Senior Biologist. However, since focused surveys were not conducted, it is recommended that a mitigation measure be included requiring pre-construction surveys for special status bats (plus additional measures for avoidance and minimization in the event bats were detected) in order to minimize the impacts to a less than significant level.

Special Status Birds: Five special status avian species (Tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus hudsonius*), yellow-billed magpie (*Pica nuttalli*), Nuttall's woodpecker (*Picoides nuttallii*)) have the potential to nest and/or forage within the project area. Greater detail regarding life history requirements of these birds is provided in Appendix B. Swainson's hawk, yellow-billed magpie, and Nuttall's woodpecker could nest in the large trees within and adjacent to the study area. Although of low likelihood, tricolored blackbird could nest in shrubs or riparian vegetation such as cattails or blackberry adjacent to the project area (in Black Rascal Creek) and forage in the open fields and school yard. Also of low likelihood, Northern harrier, a ground nesting raptor, could nest within the riparian/wetland vegetation associated with Black Rascal Creek, adjacent to the project area, and forage nearby in open fields.

Noise and human disturbance during project activities could directly impact nesting bird species. Since CDFW usually requires a various sized "no disturbance" buffers around nesting sites for these species, construction-related disturbance could be considered take of these avian species under CESA and MBTA. In addition, other migratory birds will likely be nesting within the project area and vicinity, most of which are protected by the Migratory Bird Treaty Act (USCA 1918). Both construction-related disturbance and the removal of vegetation (i.e. trees) within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special status bird species, would be considered a take under the MBTA and CESA, and therefore, constitutes a potentially significant impact of the project. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. Therefore, mitigation measures are recommended to reduce potential impacts to a less than significant level.

Special Status Plants: Of the 26 potentially occurring special status plant species, none were found within the project area or likely to occur within the project area. Although the site survey was not conducted at the peak blooming period for some potentially occurring special status plants, all plants could be ruled out because their elevation range, required habitat, and/or soil type differed from the site conditions. In general, the project area is highly disturbed and consists of school yard turf. Therefore, the project will not impact any special status plant species.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures:

MM 7.1(a): Special Status Bats

1. Pre-construction Surveys: Prior to the onset of construction activity, a CDFW-approved biologist will conduct pre-construction surveys for active roosting, breeding, or hibernacula sites (roosts) in large trees within the project area. Construction will not take place as long as a roost site is occupied. Therefore, depending on when construction begins, bat surveys should be timed to be prior to the change in season (maternity vs. hibernation) so that special status bats can be correctly excluded without take (see seasons below). If no active bat roosts, breeding, or hibernacula sites are detected, no further action is required.
2. Avoidance & Minimization:
    a. If any active bat sites are discovered or if evidence of recent occupation is established, the following measures will be implemented in order to minimize impacts on special status bats:
        i. Construction will be scheduled to minimize impacts upon pallid bats. Type and status of active roosts shall be determined, and bat eviction shall be undertaken in a manner that does not exclude bats during times of inclement weather, or exclude females from young still in a roost.

ii. Hibernation sites with evidence of prior occupation will be sealed before the hibernation season (November–March), and nursery sites will be sealed before the nursery season (April–August).
iii. If the site is occupied by the bats, then construction will occur outside the hibernation season (for hibernacula), and after August 15 (for nursery colonies).

If exclusion devices are used, they will be employed based on current best practices and will be regularly monitored by a qualified biologist.

MM 7.1(b): Special Status Birds

1. Avoidance. If feasible, any vegetation removal or ground disturbance will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction is at risk of being delayed due to actively nesting birds and their required protective buffers.
2. Pre-construction Surveys.
   a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days of the initiation of disturbance activities. This survey will cover:
      i. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson's hawk – 0.5 mile, other raptor species such as northern harrier – 500 feet, non-raptor species (Nuttall's woodpecker, magpie, tricolored blackbird, etc. – 300 feet)).
      ii. Survey protocol developed by the Swainson's Hawk Technical Advisory Committee (TAC) should be followed, which includes survey timing and requirements for repeated visits.
   b. If no active nests are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then minimization measures (described below) shall be implemented.
3. Minimization/Establish Buffers.
   a. Special status bird species and MBTA-protected species: If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area to ensure that the buffer is adequate and that the nest is not stressed and/or abandoned. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest.
4. If avoidance is not possible a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include, but are not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate credits from an approved mitigation bank or land trust servicing the Merced County Area; 3) Payment of in-lieu fees.

Level of Significance with Mitigation: The impact would be less than significant if the District incorporates the mitigation measures in the project.

7.2 Cultural Resources: Potential Loss or Damage to Historical Resources, Archaeological Resources, or Human Remains

Issues and Thresholds of Significance: Would the proposed project:

(a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines?

(b) Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines?

(c) Disturb any human remains, including those interred outside of formal cemeteries?

Analysis: The Central California Information Center (CCaIC) conducted a records search of the California Historical Resources Information System (CHRIS). Based on existing data in their files, the project area has a low surface sensitivity for the possible discovery of historical resources, prehistoric or historic-era. However, there may be some sensitivity for the presence of prehistoric cultural features and/or artifacts under the surface, potentially being found during excavation and trenching, because of the presence of Black Rascal Creek and the former presence of another, smaller creek to the south of it. CCaIC offers no recommendations for further study at this time but recommend vigilance during ground disturbance for the project.

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the project and the results were negative.

The CHRIS and NAHC record search results are included in Appendix C.

Based on the record searches conducted for this project, potential effects on cultural resources would likely be less than significant with mitigation. In the event that subsurface historical or archaeological resources are discovered during construction or site preparation activities, the following mitigation measures will be incorporated into the project.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures:

MM 7.2(a): If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the District on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines.

If the resources are determined to be unique historical resources as defined under § 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any historical artifacts recovered as a result of mitigation shall be provided to an appropriate institution or person who is capable of providing long-term preservation to allow future scientific study.

MM 7.2(b): In the event that subsurface prehistoric archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. If the resources are determined to be unique prehistoric archaeological resources as defined under § 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any prehistoric archaeological artifacts recovered as a result of mitigation shall be provided to an appropriate institution or person who is capable of providing long-term preservation to allow future scientific study.

MM 7.2(c): In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) § 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC § 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC § 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

Level of Significance with Mitigation: The impact would be less than significant with incorporation of the mitigation measures in the project.

7.3 Geology and Soils: Paleontological Resources and Geologic Features

Issue and Threshold of Significance: Would the project directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?

Analysis: No known unique paleontological resources or sites, or unique geologic features exist on the property. In the event that subsurface paleontological or geologic resources are discovered during construction or site preparation activities, the following mitigation measures will be incorporated into the project.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures:

MM 7.3: In the event that unique paleontological or geologic resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified paleontologist shall be consulted to determine whether the resource

requires further study. The qualified paleontologist or geologist shall make recommendations to the District on the measures that shall be implemented to protect the discovered resources, including but not limited to, excavation of the finds and evaluation of the finds. If the resources are determined to be significant, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any paleontological or geologic resources recovered as a result of mitigation shall be provided to an appropriate institution or person who is capable of providing long-term preservation to allow future scientific study.

Level of Significance with Mitigation: The impact would be less than significant with incorporation of the mitigation measures in the project.

7.4 Noise: Increase in Ambient Noise Levels During Construction

Issue and Threshold of Significance: Would the project result in the generation of a substantial temporary 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?

Analysis: Noise generated by the proposed project would occur during short-term construction. Noise-related impacts associated with short-term construction of the proposed project are discussed as follows:

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading, excavation and erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Although noise ranges were found to be similar for all construction phases, the initial site preparation phases, including demolition and grading/excavation activities, tend to involve the most equipment and result in the highest average-hourly noise levels.

Noise levels commonly associated with construction equipment are summarized in Table 7-1. As noted in Table 7-1, instantaneous noise levels (in dBA L_{max}) generated by individual pieces of construction equipment typically range from approximately 80 dBA to 85 dBA L_{max} at 50 feet (FTA 2006). Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average-hourly noise levels for individual equipment generally range from approximately 73 to 82 dBA L_{eq}. Based on typical off-road equipment usage rates and assuming multiple pieces of equipment operating simultaneously within a localized area, such as soil excavation activities, average-hourly noise levels could reach levels of approximately 80 dBA L_{eq} at roughly 100 feet.

Table 7-1
Typical Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) at 50 feet from Source	
	L_{max}	L_{eq}
Compactor, Concrete Vibratory Mixer	80	73
Backhoe/Front-End Loader, Air Compressor	80	76
Generator	82	79
Crane, Mobile	85	77

Table 7-1
Typical Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) at 50 feet from Source	
	L_{max}	L_{eq}
Jack Hammer, Roller	85	78
Dozer, Excavator, Grader, Concrete Mixer	85	81
Paver, Pneumatic Tools	85	82
Sources: FTA 2006		

The City has not adopted noise standards that apply to short-term construction activities. However, based on screening noise criteria commonly recommended by federal agencies, construction activities would generally be considered to have a potentially significant impact if average-hourly daytime noise levels would exceed 80 dBA L_{eq} at noise-sensitive land uses, such as residential land uses (FTA 2006). Depending on the location and types of activities conducted (e.g., building demolition, soil excavation, grading), predicted noise levels at the nearest residences, which are located adjacent to and north of the project site, could potentially exceed 80 dBA L_{eq}. Furthermore, with regard to residential land uses, activities occurring during the more noise-sensitive evening and nighttime hours could result in increased levels of annoyance and potential sleep disruption.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures: The following measures shall be implemented to reduce construction-generated noise levels:

MM 7.4(a): Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m. Construction activities shall be prohibited on Sundays and legal holidays.

MM 7.4(b): Construction truck trips shall be scheduled, to the extent feasible, to occur during non-peak hours and truck haul routes shall be selected to minimize impacts to nearby residential dwellings.

MM 7.4(c): Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

MM 7.4(d): Stationary construction equipment (e.g., portable power generators) should be located at the furthest distance possible from nearby residences. If deemed necessary, portable noise barriers shall be erected to sufficiently shield nearby residences from direct line-of-sight of stationary construction equipment.

MM 7.4(e): When not in use, all equipment shall be turned off and shall not be allowed to idle. Provide clear signage that posts this requirement for workers at the entrances to the site.

Significance After Mitigation: The use of mufflers would reduce individual equipment noise levels by approximately 10 dBA. Implementation of the above mitigation measures would limit construction activities to the less noise-sensitive periods of the day.

Level of Significance with Mitigation: Less than significant

7.5 Transportation: Circulation System

Issue and Threshold of Significance: Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Analysis: A Traffic Impact Analysis (TIA, Appendix F) was prepared for this EIR to identify and evaluate potential impacts the project may have on traffic conditions in its vicinity, identify short-term roadway and circulation needs, determine potential mitigation measures for any significant traffic impacts, and identify any critical traffic issues that should be addressed in the ongoing planning process. The primary focus of the TIA was to evaluate traffic conditions at study intersections and road segments that may be impacted by the project. The scope of work for the TIA was prepared via consultation with the City of Merced and Caltrans staff.

Roadway Network: The Project site and surrounding study area are illustrated in TIA Figure 1. Important roadways serving the Project are discussed below.

- **State Route 59 (Snelling Highway)** is an existing north-south two-lane undivided major arterial in the vicinity of the proposed Project. In this area, State Route 59 extends north of State Route 99 via "V" Street and 16th Street. State Route 59 is predominantly a two-lane undivided arterial north of 16th Street through the City of Merced SOI. The *Merced Vision 2030 General Plan* designates State Route 59 as a six-lane arterial between 16th Street and Yosemite Avenue, a four-lane arterial between Yosemite Avenue and Bellevue Road, and a six-lane arterial between Bellevue Road and Oakdale Road. The Transportation Concept Report for State Route 59 designates the segment of State Route 59 between 16th Street and Buena Vista Road as a four-lane expressway with a Class III Bicycle Facility.
- **Olive Avenue** is an existing east-west six-lane divided arterial adjacent to the proposed Project. In this area, Olive Avenue is a six-lane divided major arterial between State Route 59 and "R" Street, a six-lane divided arterial between "R" Street and "G" Street, a two-lane arterial divided by a two-way left-turn lane between "G" Street and McKee Road, and a two-lane undivided arterial east of McKee Road through the City of Merced SOI. Olive Avenue is a four-lane divided major arterial west of State Route 59 through the City of Merced SOI and is known as Santa Fe Drive. The *Merced Vision 2030 General Plan* designates Olive Avenue as a six-lane divided major arterial west of "G" Street, a four-lane divided arterial between "G" Street and Parsons Avenue, and a two-lane divided arterial east of Parsons Avenue. Furthermore, the *Merced Vision 2030 General Plan* acknowledged that Olive Avenue would exceed LOS D as a four-lane divided arterial between "G" Street and Parsons Avenue. However, City Council made appropriate findings to designate LOS E as the criteria of significance for Olive Avenue as four-lane facility between "G" Street and Parsons Avenue.
- **Merced High School Driveway** is an existing north-south two-lane undivided access to the proposed Project. Merced High School Driveway serves as the fire lane road for the Merced High School campus and requires a special permit to enter the gated parking lot immediately to the northeast of the driveway and Olive Avenue. The gated parking lot has another gate onsite that connects to the open parking lot accessible via the northern extension of Park Avenue. During a Friday evening event, gates to this parking lot are opened to attendees.
- **Park Avenue** is an existing north-south two-lane undivided collector in the vicinity of the proposed Project. In this area, Park Avenue is a two-lane undivided collector between Olive Avenue and "G" Street. North of Olive Avenue, Park Avenue becomes the main access driveway to the Merced High School campus. The *Merced Vision 2030 General Plan* designated Park Avenue as a collector between Olive Avenue and "G" Street.

- **"G" Street** is an existing north-south four-lane divided minor arterial adjacent to the proposed Project. In this area, "G" Street is a two-lane undivided arterial north of Farmland Road, a three-lane arterial divided by a two-way left-turn lane between Farmland Road and Bellevue Road, a four-lane divided arterial between Bellevue Road and Cardella Road, a two-lane undivided major arterial between Cardella Road and Mercy Avenue, a five-lane divided arterial between Mercy Avenue and Yosemite Avenue, a four-lane arterial divided by a two-way left-turn lane between Yosemite Avenue and El Portal Drive, a four-lane divided arterial between El Portal Drive and Bear Creek Drive, a four-lane arterial divided by a two-way left-turn lane between Bear Creek Drive and 13th Street, and a two-lane undivided collector south of 13th Street. The *Merced Vision 2030 General Plan* designates "G" Street as a four-lane divided arterial north of Old Lake Road, a six-lane major arterial between Old Lake Road and Bellevue Road, a four-lane major arterial between Bellevue Road and Yosemite Avenue, a four-lane minor arterial between Yosemite Avenue and Olive Avenue, a four-lane divided arterial between Olive Avenue and 13th Street, and a two-lane undivided collector south of 13th Street. Furthermore, the *Merced Vision 2030 General Plan* acknowledged that "G" Street would exceed LOS D as a four-lane divided arterial between Olive Avenue and Bear Creek Drive. However, City Council made appropriate findings to designate LOS E as the criteria of significance for "G" Street as four-lane facility between Olive Avenue and Bear Creek Drive.

Study Facilities: The existing peak hour turning movement counts were conducted at the study intersections in September and October 2019. The intersection turning movement counts included pedestrian volumes. The traffic counts for the existing study intersections are contained in TIA Appendix B. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in TIA Figure 2.

Study Intersections

1. State Route 59 / Olive Avenue
2. Merced High School Driveway / Olive Avenue
3. Park Avenue / Olive Avenue
4. "G" Street / Olive Avenue

Level of Service Analysis Methodology: Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *2010 Highway Capacity Manual* (HCM) is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. U-turn movements were analyzed using HCM 2000 methodologies and would yield more accurate results for the reason that HCM 2010 methodologies do not allow the analysis of U-turns or some shared turn lane movements. Synchro software was used to define LOS in this study. Details regarding these calculations are included in TIA Appendix C.

Study Scenarios: The traffic scenarios evaluated for this EIR included the following:

Existing Traffic Conditions

This scenario evaluates the Existing Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted in September and October 2019.

Existing plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by adding the Project Only Trips to the Existing Traffic Conditions scenario. The Project Only Trips to the study intersections were developed based on existing travel patterns, the existing roadway network, engineering judgment, data provided by the District, knowledge of the study area, existing residential and commercial densities, and the *Merced Vision 2030 General Plan* Transportation and Circulation Element in the vicinity of the Project.

Near Term plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the Near Term (Year 2025) related trips to the Existing plus Project Traffic Conditions scenario.

Cumulative Year 2039 No Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2039 No Project Traffic Conditions. The Cumulative Year 2039 No Project traffic volumes were obtained by subtracting the Project Only Trips from the Cumulative Year 2039 plus Project Traffic Conditions scenario.

Cumulative Year 2039 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2039 plus Project Traffic Conditions. The Cumulative Year 2039 plus Project traffic volumes were obtained by expanding Existing traffic volumes by an average annual growth rate of 0.7 percent, assuming full buildout of all Near Term Projects, and utilizing the greater of the two volumes. The average annual growth rate of 0.7 percent was approved by City of Merced staff in their approval of the Draft Scope of Work. The average annual growth rate of 0.7 percent was based on a review of the Base Year 2015 and Cumulative Year 2042 Merced CAG models.

Trip Generation: Trip generation rates for the proposed Project were obtained from the Merced Golden Valley High School Stadium Seating Expansion TIA (April 13, 2010). Table 7-2 presents the trip generation for the proposed Project site with trip generation rates for a High School Stadium before a Friday evening event. At buildout, the Project is estimated to generate a maximum of 2,294 daily trips and 680 PM peak hour trips before a Friday evening event.

Table 7-2:
Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*PM (5:45-6:45) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%				
High School Stadium[1]	3,100	seats	0.74	2,294	0.22	70	30	476	204	680
Total Project Trip Generation				**2,294**				**476**	**204**	**680**

Note: 1 = Trip generation rates for daily and PM peak hour were obtained from Merced Golden Valley High School Stadium Seating Expansion Traffic Impact Analysis Report (April 13, 2010).

Trip Distribution: The Project Only Trips to the study intersections were developed based on existing travel patterns, the existing roadway network, engineering judgment, data provided by the

District, knowledge of the study area, existing residential and commercial densities, and the *Merced Vision 2030 General Plan* Transportation and Circulation Element in the vicinity of the Project. Figure 4 presents the Project Only Trips to the study intersections.

Conclusions and Recommendations: Conclusions and recommendations regarding the proposed Project are presented below.

Existing Traffic Conditions

- At present, all study intersections operate at an acceptable LOS during the PM peak period.

Existing plus Project Traffic Conditions

- JLB analyzed the location of the proposed driveways relative to the existing local roads and driveways in the Project's vicinity. Based on this review, it is recommended that the Project modify Merced High School Driveway access to Olive Avenue to left-in, right-in and right-out only by installing a raised median island across the intersection along the center of Olive Avenue. Based on the Queuing Analysis, the existing driveway throat depth of 100 feet is adequate for onsite and offsite traffic operations and circulation. Installation of a raised median island across the intersection along the center of Olive Avenue would improve onsite and offsite traffic operations and circulation.
- The surrounding Project site is well-developed with sidewalks providing adequate and safe pedestrian facilities at all times.
- At buildout, the Project is estimated to generate a maximum of 2,294 daily trips and 680 PM peak hour trips before a Friday evening event.
- As the Project is within a defined service area that is currently being served by another stadium, JLB determined the anticipated average trip length reductions that would be observed as a result of the proposed stadium. It estimated that the average trip length for Merced High School Friday evening events taking place at the Merced Golden Valley High School Stadium is 2.66 miles. With the Project, the estimated average trip length is 1.19 miles resulting in a reduction of 1.46 miles per project trip on average. Additionally, the proposed stadium is located near transit services and adequate pedestrian and bicycle facilities.
- Under this scenario, all study intersections are projected to operate at an acceptable LOS during the PM peak period.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects by year 2025 is 88,641 daily trips and 8,301 PM peak hour trips.
- Under this scenario, the intersections of State Route 59 and Olive Avenue and Merced High School Driveway and Olive Avenue are projected to exceed their LOS threshold during the PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.
    - State Route 59 / Olive Avenue
        - Due to the limited frequency of stadium events, mitigation measures that involve modifications to the lane geometrics of this intersection would not be appropriate. However, it is recommended that the traffic signals be modified to implement overlap phasing of the northbound right-turn with the westbound left-turn phase.

- Merced High School Driveway / Olive Avenue
  - Modify Merced High School Driveway access to Olive Avenue to left-in, right-in and right-out only. To accomplish this, it is recommended that a raised median island be extended across the intersection along the center of Olive Avenue. With the extension of the raised median island, southbound left-turns would need to be redirected. Southbound left-turning traffic from Merced High School Driveway would need to make a right-turn onto Olive Avenue, proceed to make a legal eastbound to westbound U-turn on Olive Avenue, and then continue eastbound on Olive Avenue past Merced High School Driveway.

Cumulative Year 2039 No Project Traffic Conditions

- Under this scenario, all study intersections are projected to operate at an acceptable LOS during the PM peak period.

Cumulative Year 2039 plus Project Traffic Conditions

- Under this scenario, the intersections of State Route 59 and Olive Avenue, Merced High School Driveway and Olive Avenue, and "G" Street and Olive Avenue are projected to exceed their LOS threshold during the PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.
  - State Route 59 / Olive Avenue
    - Due to the limited frequency of stadium events, mitigation measures that involve modifications to the lane geometrics of this intersection would not be appropriate. However, it is recommended that the traffic signals be modified to implement overlap phasing of the northbound right-turn with the westbound left-turn phase.
  - Merced High School Driveway / Olive Avenue
    - Modify Merced High School Driveway access to Olive Avenue to left-in, right-in and right-out only. To accomplish this, it is recommended that a raised median island be extended across the intersection along the center of Olive Avenue. With the extension of the raised median island, southbound left-turns would need to be redirected. Southbound left-turning traffic from Merced High School Driveway would need to make a right-turn onto Olive Avenue, proceed to make a legal eastbound to westbound U-turn on Olive Avenue, and then continue eastbound on Olive Avenue past Merced High School Driveway.
  - "G" Street / Olive Avenue
    - It is recommended that the intersection be modified to convert the southbound through-right lane to a through lane and stripe a southbound right-turn lane.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures:

MM 7.5(a): Traffic signals shall be modified to implement overlap phasing of the State Route 59/Olive Avenue northbound right-turn with the westbound left-turn phase.

MM 7.5(b): The Merced High School Driveway access to Olive Avenue shall be modified to left-in, right-in and right-out only. To accomplish this, a raised median island shall be extended across the intersection along the center of Olive Avenue. With the extension of the raised median island, southbound left-turns would need to be redirected. Southbound left-turning traffic from Merced High School Driveway would need to make a right-turn onto Olive Avenue, proceed to make a legal eastbound to westbound U-turn on Olive Avenue, and then continue eastbound on Olive Avenue past Merced High School Driveway.

MM 7.5(c): The "G" Street/Olive Avenue intersection shall be modified to convert the southbound through-right lane to a through lane and stripe a southbound right-turn lane.

Level of Significance with Mitigation: The impacts would be less than significant if MUHSD incorporates the mitigation measures in the project.

7.6 Transportation: Hazards from Design Features and/or Incompatible Uses

Issues and Threshold of Significance: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Analysis: Stadium events will result in a concentration of cars, a demand for parking and a need for pedestrians to safely access the stadium. As such, there will be a need for a Traffic Management and Parking Plan for stadium operations to mitigate potential traffic conflicts, parking demand and potential safety hazards.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures:

MM 7.6: The District shall prepare a Traffic Management and Parking Plan for stadium operations to mitigate potential traffic conflicts, parking demand and potential safety hazards. The plan shall be developed in coordination with the City of Merced and should involve the use of traffic and parking attendants, designated safe walking areas for pedestrians, temporary traffic controls at intersections and driveways, and communication/coordination with nearby property owners, as necessary.

Level of Significance after Mitigation: Less than significant

7.7 Tribal Cultural Resources: Potential Loss or Damage to Tribal Cultural Resources

Issues and Thresholds of Significance: Would the proposed 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

(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

Analysis: Prior to publication and distribution of the project's Notice of Preparation (NOP), the Native American Heritage Commission (NAHC) was contacted in order to obtain contact

information for any tribes with traditional lands or places located in the project area. The NAHC identified four tribal contacts which had requested notice for land use projects in the vicinity of the proposed high school campus. The Notice of Preparation (NOP) was sent to the Native American groups identified on the tribal consultation list in order to provide information about the project and invite comments. No comments were received as part of the tribal consultation process. No tribes have requests on file with the lead agency to be consulted under AB52.

The CHRIS and NAHC record searches conducted for the project did not identify any tribal cultural resources within the project study area and did not recommend further investigation of tribal cultural resources. (See Impact 7.2)

While no tribal cultural resources were identified as part of the research for this project, there is the potential for undiscovered resources to be present that could be disturbed or damaged by construction and/or site preparation activities. These resources might include buried archaeological deposits such as tools or weapons from a gathering or hunting site or a cache of artifacts, which could provide important time, territory, and cultural pattern markers in the reconstruction of prehistory and history. The impact from ground disturbing activities is thus potentially significant.

Level of Significance without Mitigation: Potentially significant

Mitigation Measures:

MM 7.7: If tribal cultural resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified professional with expertise in tribal cultural resources shall be consulted to recommend an appropriate course of action with the input of potentially affected tribes. If it is determined that the project may cause a substantial adverse change to a tribal cultural resource, mitigation measures to be considered should include those identified in Public Resources Code Section 21084.3.

Level of Significance with Mitigation: The impact would be less than significant with incorporation of the mitigation measures in the project.

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8. Less than Significant Impacts

8.1 Aesthetics: Scenic Vistas, Scenic Resources, and Visual Quality

Issue and Threshold of Significance: Would the project:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- Substantially degrade the existing visual character or quality of the site and its surroundings?

Analysis: The project would have less than significant on scenic vistas, scenic resources, or visual quality within the project area. The site is not located within a state scenic highway. The site is located within an urbanized area on an existing high school campus. The site has been used as a football field for many years and existing residences are separated from the site by a substantial concentration of trees along the norther edge of the campus and a creek and trail area. No unique or important scenic vistas exist on or near the project area, and no state scenic highways or locally designated scenic routes exist near the site.

Level of Significance: Less than significant

8.2 Aesthetics: Increase in Illumination and Glare

Issue and Threshold of Significance: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Analysis: The project would not create a new source of light and glare in the project area. There are existing lights at the field that have been in use since 2009 and these lights are currently used at project site approximately 20 evenings per year. There are an additional 10 evenings where lights are used at the adjacent baseball field. The use of the lights for six additional football game nights, an annual commencement ceremony and for soccer games would not constitute a substantial additional impact above the existing baseline condition. It is noted that the closest existing residences (north of the stadium site) are separated from the site by a substantial number of existing mature trees on the north edge of the high school campus (which act to screen the residences from the high school campus), and an approximately 100 foot wide creek and bike path area. Parking for the project is located on the south side of campus, along major streets and adjacent to commercial development. Therefore, lights from vehicles accessing the school will not impact the residential neighborhood north of the school.

Level of Significance: Less than significant

8.3 Air Quality: Cumulatively Considerable Increase in Criteria Pollutants

Issue and Threshold of Significance: Would the project 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?

Analysis: The proposed project is located in the City of Merced, which is within the SJVAB. The SJVAB is designated nonattainment for the national 8-hour ozone and $PM_{2.5}$ standards. On September 25, 2008, the U.S. EPA redesignated the San Joaquin Valley to attainment for the PM_{10} NAAQS and approved the PM_{10} Maintenance Plan (SJVAPCD 2019). Potential air quality impacts associated with the proposed project could potentially occur during project construction or

operational phases. Short-term construction and long-term air quality impacts associated with the proposed project are discussed, as follows:

Short-term Construction Emissions

Short-term increases in emissions would occur during the construction phase. Construction-generated emissions are temporary, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed project would result in the temporary generation of emissions associated with site preparation, grading, building construction, and paving. Short-term construction emissions would result in increased emissions of ozone-precursor pollutants (i.e., ROG and NO_X), CO, and emissions of PM. Emissions of ozone-precursors would result from the operation of on-road and off-road motorized vehicles and equipment. Emissions of airborne PM are largely dependent on the amount of ground disturbance associated with site grading activities and can result in increased concentrations of PM that can adversely affect nearby sensitive land uses. Estimated construction-generated annual emissions associated with the proposed project are summarized in Table 4.

AIR QUALITY TERMS & ACRONYMS

ARB: California Air Resources Board
CAAQS: California Ambient Air Quality Standards
CO: Carbon Monoxide
DPM: Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM
GHG: Greenhouse Gases
LOS: Level of Service
NOx: Oxides of Nitrogen
PM: Particulate Matter
PM_{10}: Particulate Matter (less than 10 µm)
$PM_{2.5}$: Particulate Matter (less than 2.5 µm)
ROG: Reactive Organic Gases
SJVAB: San Joaquin Valley Air Basin
SJVAPCD: San Joaquin Valley Air Pollution Control District
SO2: Sulfur Dioxide
TAC: Toxic Air Contaminant
TPY: Tons per Year
µg/m3: Micrograms per cubic meter

As noted in Table 8-1, construction of the proposed project would generate maximum annual emissions of approximately 0.28 tons/year of ROG, 2.51 tons/year of NO_x, 2.20 tons/year of CO, 0.20 tons/year of PM_{10}, and 0.14 tons/year of $PM_{2.5}$. Estimated annual construction-generated emissions would not exceed the SJVAPCD's significance thresholds of 10 tons/year of ROG, 10 tons/year of NO_x, 100 tons/year of CO, 27 tons/year of SOx, 15 tons/year PM_{10}, or 15 tons/year $PM_{2.5}$.

Table 8-1
Annual Construction Emissions

Construction Phase	Uncontrolled Maximum Annual Emissions (tons/year) [1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Year 1						
Site Preparation	0.01	0.11	0.06	0.00	0.05	0.03
Grading	0.01	0.11	0.07	0.00	0.03	0.02
Building Construction	0.28	2.51	2.20	0.00	0.20	0.14
Total:	0.30	2.72	2.32	0.00	0.28	0.19
Construction Year 2						
Building Construction	0.00	0.02	0.02	0.00	0.00	0.00
Paving	0.01	0.10	0.12	0.00	0.01	0.01
Total:	0.01	0.12	0.13	0.00	0.01	0.01
Maximum Annual Emissions[2]:	0.28	2.51	2.20	0.00	0.20	0.14

Significance Thresholds:	*10*	*10*	*100*	*27*	*15*	*15*
Exceeds Thresholds/Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

1. Based on CalEEMod computer modeling. Totals may not sum due to rounding. Does not include emission control measures. Construction would begin in 2020. Future year emissions would be less.

2. Maximum annual emissions assume building construction and paving could potentially occur simultaneously.

Refer to Appendix A for modeling results and assumptions.

Estimated daily construction emissions are summarized in Table 8-2. As noted in Table 8-2, construction of the proposed project would generate maximum daily emissions of approximately 3.41 lbs/day of ROG, 30.94 lbs/day of NO_x, 31.67 lbs/day of CO, 0.06 lbs/day of SO_2, 2.32 lbs/day of PM_{10}, and 1.66 lbs/day of $PM_{2.5}$. Daily construction emissions would not exceed the SJVAPCD's recommended localized ambient air quality significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated.

Short-term construction of the proposed project would not result in a significant impact to regional or local air quality conditions. Furthermore, it is important to note that project construction, including grading activities, would be required to comply with SJVPACD Regulation VIII (Fugitive PM_{10} Prohibitions). Mandatory compliance with SJVAPCD Regulation VIII would further reduce emissions of fugitive dust from the project site and minimize the project's potential to adversely affect nearby sensitive receptors. With compliance with SJVAPCD Regulation VIII, emissions of PM would be further reduced. For these reasons, construction-generated emissions would not be anticipated to result in a substantial increase in localized or regional pollutant concentrations that would have a significant adverse impact to public health. Given that project-generated emissions would not exceed applicable SJVAPCD significance thresholds, this impact would be considered *less than significant*.

Table 8-2
Daily Construction Emissions

Construction Phase	Uncontrolled Maximum Daily Emissions (lbs/day) [1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Year 1						
Site Preparation	4.16	42.48	22.11	0.04	20.41	11.99
Grading	2.50	26.44	16.55	0.03	7.95	4.57
Building Construction	2.49	22.06	19.34	0.04	1.74	1.23
Total:	9.15	90.98	57.99	0.11	30.11	17.80
Construction Year 2						
Building Construction	2.23	20.04	18.81	0.04	1.58	1.08
Paving	1.18	10.90	12.86	0.02	0.74	0.58
Total:	3.41	30.94	31.67	0.06	2.32	1.66
Maximum Daily Emissions[2]:	3.41	30.94	31.67	0.06	2.32	1.66
Significance Thresholds:	*100*	*100*	*100*	*100*	*100*	*100*
Exceeds Thresholds/Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

1. Based on CalEEMod computer modeling. Totals may not sum due to rounding. Does not include emission control measures. Construction would begin in 2020. Future year emissions would be less.

2. Maximum daily emissions assume building construction and paving could potentially occur simultaneously.

Refer to Appendix A for modeling results and assumptions.

Long-term Operational Emissions

Estimated annual operational emissions for the proposed project are summarized in Table 8-3. As depicted, the proposed project would result in annual emissions of approximately 0.60 tons/year of ROG, 0.42 tons/year of NO_X, 0.23 tons/year of CO, 0.02 tons/year of PM_{10}, and 0.01 tons/year of $PM_{2.5}$ during the initial year of operation. Operational emissions would be projected to decline in future years, with improvements in fuel-consumption emissions standards. Annual operational emissions would not exceed SJVAPCD's mass-emissions significance thresholds.

Estimated daily operational emissions are summarized in Table 8-4. As depicted, the proposed project would result in daily operational emissions of approximately 3.37 lbs/day of ROG, 2.95 lbs/day of NO_X, 1.47 lbs/day of CO, 0.01 lbs/day of SO_2, 0.14 lbs/day of PM_{10}, and 0.08 lbs/day of $PM_{2.5}$. Operational emissions would be largely associated with area sources (e.g., landscape maintenance activities). Daily operational emissions would not exceed the SJVAPCD's recommended localized ambient air quality significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated.

It is important to note that estimated operational emissions are based on the default vehicle fleet distribution assumptions contained in the model, which include contributions from medium and heavy-duty trucks. As a result, actual mobile source emissions would likely be less than estimated. Long-term operation of the proposed project would not result in a significant impact to regional or local air quality conditions. For these reasons, operational emissions would not be anticipated to result in a significant adverse impact to public health. This impact is considered *less than significant*.

Table 8-3
Annual Operational Emissions

Operational Category	Uncontrolled Annual Emissions (tons/year)[1]					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source	0.56	0.00	0.00	0.00	0.00	0.00
Energy Use	0.01	0.12	0.10	0.00	0.01	0.01
Mobile Source[2]	0.02	0.29	0.13	0.00	0.01	0.00
Total:	0.60	0.42	0.23	0.00	0.02	0.01
Significance Thresholds:	*10*	*10*	*100*	*27*	*15*	*15*
Exceeds Thresholds/Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

1. Emissions were calculated using the CalEEMod computer program. Does not include implementation of emissions control measures.

2. Fleet distribution data for the project is not available. Mobile-source emissions are based on default vehicle fleet distribution for Merced County, which includes all vehicle types/classifications, including medium and heavy-duty vehicles. Does not include reductions in VMT anticipated to occur with project implementation. Actual emissions would be lower.

Refer to Appendix A for modeling assumptions and results.

Table 8-4
Daily Operational Emissions

Operational Category	Uncontrolled Daily Emissions (lbs/day) [1]					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source	3.06	0.00	0.00	0.00	0.00	0.00
Energy Use	0.07	0.68	0.57	0.00	0.05	0.05

Mobile Source[2]	0.24	2.27	0.90	0.00	0.09	0.03
Total:	3.37	2.95	1.47	0.01	0.14	0.08
Significance Thresholds:	*100*	*100*	*100*	*100*	*100*	*100*
Exceeds Thresholds/Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

1. Emissions were calculated using the CalEEMod computer program. Does not include implementation of emissions control measures.

2. Fleet distribution data for the project is not available. Mobile-source emissions are based on default vehicle fleet distribution for Merced County, which includes all vehicle types/classifications, including medium and heavy-duty vehicles. Does not include reductions in VMT anticipated to occur with project implementation. Actual emissions would be lower.

Refer to Appendix A for modeling assumptions and results.

Level of Significance: Less than significant

8.4 Air Quality: Exposure of Sensitive Receptors to Pollutant Concentrations

Issue and Threshold of Significance: Would the project expose sensitive receptors to substantial pollutant concentrations?

Analysis: Sensitive land uses located in the vicinity of the proposed project site consist predominantly of residential land uses. The nearest residential land uses are generally located to the north of the project site along Campus Drive. In addition, a preschool is located west of the project site along Collins Drive. Long-term operational and short-term construction activities and emission sources that could adversely impact these nearest sensitive receptors are discussed, as follows:

Long-term Operation

Localized Mobile-Source CO Emissions

Carbon monoxide is the primary criteria air pollutant of local concern associated with the proposed project. Under specific meteorological and operational conditions, such as near areas of heavily congested vehicle traffic, CO concentrations may reach unhealthy levels. If inhaled, CO can be adsorbed easily by the bloodstream and can inhibit oxygen delivery to the body, which can cause significant health effects ranging from slight headaches to death. The most serious effects are felt by individuals susceptible to oxygen deficiencies, including people with anemia and those suffering from chronic lung or heart disease.

Mobile-source emissions of CO are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. For this reason, modeling of mobile-source CO concentrations is typically recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e., LOS E or F). Localized CO concentrations associated with the proposed project would be considered less-than-significant impact if: (1) traffic generated by the proposed project would not result in deterioration of a signalized intersection to a LOS of E or F; or (2) the project would not contribute additional traffic to a signalized intersection that already operates at LOS of E or F.

Based on the traffic analysis prepared for this project, the project would result in or contribute to unacceptable levels of service (i.e., LOS E or F) at one primarily affected signalized intersection (JBL 2019). The affected signalized intersection includes "G" Street/Olive Avenue. Localized 1-hour and 8-hour CO concentrations at this intersection were modeled using the Caline4 computer program in accordance with Caltrans-recommended methodologies (Caltrans 1996). Predicted CO

concentrations at the primarily affected signalized intersection are summarized in Table 8. As depicted in Table 8-5, the highest predicted 1-hour and 8-hour CO concentrations at this intersection would be 3.4 and 2.5 parts per million (ppm), respectively. Predicted CO concentrations at these intersections would not exceed the 1-hour and 8-hour CAAQS of 20 and 9 ppm, respectively. As a result, the project's contribution to localized CO concentrations and potential health-related impacts on nearby receptors would be considered less than significant.

Table 8-5
Localized Mobile-Source CO Concentrations

Signalized Roadway Intersection	Predicted CO Concentration (ppm)	
	1-Hour	8-Hour
"G" Street / Olive Avenue	3.4	2.5
California Ambient Air Quality Standards (CAAQS):	20	9
Exceeds CAAQS/Significant Impact	No	No

Localized mobile-source CO concentrations were calculated using the Caline4 computer program based on PM peak-hour traffic volumes derived from the traffic analysis prepared for this project. Predicted 1-hour CO concentrations were converted to 8-hour concentrations assuming a persistence factor of 0.8. Modeled 1-hour and 8-hour receiver locations were placed at 3 and 7 meters from the roadway edge, respectively. Ambient background 8-hour CO concentration (2.1) was based on the highest measured CO concentrations obtained from the nearest monitoring stations for the last three years of available data (2016-2018). Refer to Appendix A for emissions modeling assumptions and results.

Toxic Air Contaminants

Implementation of the proposed project would not result in the long-term operation of any major onsite stationary sources of TACs, nor would project implementation result in a significant increase in diesel-fueled vehicles traveling along area roadways. No major stationary sources of TACs were identified in the project vicinity that would result in increased exposure of residences, students, or staff to TACs. For these reasons, long-term increases in exposure to TACs would be considered *less than significant*.

Short-term Construction

Naturally Occurring Asbestos

Naturally-occurring asbestos, which was identified by ARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located near any areas that are likely to contain ultramafic rock (DOC 2000). As a result, risk of exposure to asbestos during the construction process would be considered *less than significant*.

Asbestos-Containing Materials

Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM). Asbestos containing materials could be encountered during the demolition of existing buildings, particularly older structures constructed prior to 1970. Asbestos can also be found in various building products, including (but not limited to) utility pipes/pipelines (transit pipes or insulation on pipes). If a project will involve the disturbance or potential disturbance of ACM, various regulatory requirements may apply, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M-Asbestos NESHAP). These requirements include but are not limited to: 1) notification, within at least 10 business days of activities commencing, to the APCD, 2) an

asbestos survey conducted by a Certified Asbestos Consultant, and, 3) applicable removal and disposal requirements of identified ACM.

The proposed project would not include the demolition of existing onsite structures. This impact is considered *less than significant*.

Lead-Coated Materials

Demolition of structures coated with lead based paint can have potential negative air quality impacts and may adversely affect the health of nearby individuals. Lead-based paints could be encountered during the demolition of existing buildings, particularly older structures constructed prior to 1978. Improper demolition can result in the release of lead containing particles from the site. Sandblasting or removal of paint by heating with a heat gun can result in significant emissions of lead. In such instances, proper abatement of lead before demolition of these structures must be performed in order to prevent the release of lead from the site. Federal and State lead regulations, including the Lead in Construction Standard (29CFR1926.62) and California Code of Regulations (CCR Title 8, Section 1532.1, Lead) regulate disturbance of lead containing materials during construction, demolition, and maintenance-related activities. Depending on removal method, a SJVAPCD permit may be required.

The proposed project would not include the demolition of existing onsite structures. This impact is considered *less than significant*.

Diesel-Exhaust Emissions

Implementation of the proposed project would result in the generation of DPM emissions during construction associated with the use of off-road diesel equipment for site grading, paving and other construction activities. Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. For work-sites and residential land uses, the calculation of cancer risk associated with exposure to TACs are typically calculated based on a 25-year and 30-year period of exposure, respectively. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Assuming that construction activities involving the use of diesel-fueled equipment would occur over an approximately 12-month period, project-related construction activities would constitute less than five percent of the typical exposure period. As a result, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e., incremental increase in cancer risk of 20 in one million). For these reasons, this impact would be considered *less than significant*.

Localized PM Concentrations

Fugitive dust emissions would be primarily associated with site preparation, grading, and vehicle travel on unpaved and paved surfaces. On-site off-road equipment and trucks would also result in short-term emissions of diesel-exhaust PM, which could contribute to elevated localized concentration at nearby receptors. However, project construction activities would be required to comply with SJVAPCD Regulation VIII, which includes measures to be implemented during project construction for the control of fugitive dust. In addition, as noted in Table 8-2, daily construction emissions of PM would not exceed the SJVAPCD's recommended localized ambient air quality significance thresholds of 100 lbs/day. For these reasons, localized uncontrolled concentrations of construction-generated PM would be considered to have a *less than significant* impact.

Level of Significance: Less than significant

8.5 Air Quality: Conflicts with Air Quality Plans

Issue and Threshold of Significance: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Analysis: In accordance with SJVAPCD-recommended methodology for the assessment of air quality impacts, projects that result in significant air quality impacts at the project level are also considered to have a significant cumulative air quality impact. As noted in Section 8.3, short-term construction and long-term operational emissions would not exceed applicable thresholds. In addition, the proposed project's contribution to localized concentrations of emissions, including emissions of CO, TACs, PM, and odors, are considered less than significant. For this reason, implementation of the proposed project would not conflict with air quality attainment or maintenance planning efforts.

Level of Significance: Less than significant

8.6 Air Quality: Increased Exposure to Other Emissions

Issue and Threshold of Significance: Would the project result in other emissions (such as those leading to odors) affecting a substantial number of people?

Analysis: Other emissions potentially associated with the proposed project would be predominantly associated to the generation of odors during project construction. The occurrence and severity of odor impacts depend on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies.

Construction of the proposed project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. In addition, pavement coatings used during project construction would also emit temporary odors. However, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly within increasing distance from the source. As a result, short-term construction activities would not expose a substantial number of people to frequent odorous emissions. In addition, no major sources of odors have been identified in the project area.

Level of Significance: Less than significant

8.7 Biological Resources: Riparian Habitat or Sensitive Natural Community

Issue and Threshold of Significance: Would the proposed project 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 US Fish and Wildlife Service?

Analysis: There are no riparian or sensitive natural communities within the project area as identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U. S. Fish and Wildlife Service. The project area consists of a developed high school turf area and approximately 15 planted non-native eucalyptus trees and has been used as a football field since 1986. At the time of this analysis, none of these trees were planned for removal due to the project. The project area is separated from Black Rascal Creek by a significant (8ft tall) chain link fence and a developed (raised and concrete) bike path, which parallels the creek. Therefore, the

existing eucalyptus trees are physically separated from the creek and not considered part of the associated riparian area, but rather ornamental school yard trees. Although some bird species (discussed previously) may use the trees in the project area, impacts will be less than significant due to the incorporation of previously listed mitigation measures (see Section 7.1).

Level of Significance: Less than significant

8.8 Biological Resources: Effects on State or Federally Protected Wetlands

Issue and Threshold of Significance: Would the proposed project 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?

Analysis: There are no state or federally protected wetlands within the project area. Although Black Rascal Creek is adjacent to the project, it is physically separated from the project area by an 8 ft tall chain link fence and by a raised bike path paralleling the creek. Implementation of typical ground disturbance and erosion control Best Management Practices (BMPs) and compliance with required grading permits will ensure that there is no impact to the creek. BMPs will include actions such as:

- installing silt fence downslope of all ground disturbance for the life of the construction period,
- no work shall occur during heavy rain events,
- protect spoils piles and slopes with straw waddles and erosion control devices during rain events,
- revegetation of slopes and installation of erosion control devices after earth work is complete.

Level of Significance: Less than significant

8.9 Biological Resources: Movement of Fish and Wildlife

Issue and Threshold of Significance: Would the proposed project 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?

Analysis: The project area, which has been a football field since 1986, does not appear to constitute a "movement corridor" for native wildlife (USFWS 1998) that would attract wildlife to move through the site any more than the other surrounding developed lands. The project site is bordered by development, busy streets, and is fully fenced with 8 ft tall chain link, which restricts access for wildlife. Black Rascal Creek, which may be used by wildlife for movement through the City of Merced, is adjacent (north) of the project area, however it is separated by the chain-link fence and a well-used, developed bike path. Smaller wildlife species and birds are not expected to be further inhibited by the project as compared with neighboring residential and commercial uses. Given the current high disturbance levels at the project area by students, bike path users, and residents, the project would not substantially interfere with the movement of wildlife species. Wildlife, both during and after the project completion, will still easily pass by the project area, as there are no plans to interfere with the creek.

Level of Significance: Less than significant

8.10 Energy Impacts

Purpose: In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code Section 21100(b)(3)).

According to CEQA Guidelines Section 15126.4 and Appendix F, Energy Conservation, a project may be determined to have a significant effect on the environment if it would:

- Result in wasteful, inefficient and unnecessary consumption of energy; or
- Substantially affect local or regional energy supplies; or
- Fail to comply with existing energy standards

Background: The primary energy sources for the project – electricity and petroleum fuels – are discussed below:

Electricity

Pacific Gas & Electric Company (PG&E) provides electricity to the project site and to about 16 million people throughout a 70,000 square-mile service area covering most of northern and central California. PG&E operates approximately 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines, serving 5.4 million electric customer accounts. In 2018 (the most recent year for which data is available), PG&E customers used 79,776 gigawatt-hours of electricity, 3,559 gigawatt-hours of which were used in Merced County. Sources of electrical generation in California's power mix in 2018 were renewable (31.4 percent; this category includes wind, geothermal, biomass, solar and small hydroelectric), nuclear (9.1 percent), natural gas (34.9 percent), large hydroelectric (10.7 percent), and unspecified (10.5 percent). California obtained approximately 68.2 percent of its electrical energy during 2018 from in-state sources, with 17.9 percent imported from sources the US Southwest and 13.8 percent imported from sources in the Pacific Northwest.

Petroleum Fuels

Petroleum usage in California includes products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. According to the US Energy Information Administration (EIA), California used approximately 683 million barrels of petroleum in 2017, with over 585 million barrels consumed for transportation uses. The EIA forecasts a decrease in the share of petroleum fuels for transportation energy between 2017 and 2030, although future demand for petroleum fuels is subject to a number of factors including crude energy price, energy costs and costs per mile, availability of alternative fuels (electricity, natural gas, hydrogen, E85), availability of transportation means such as high-speed rail, and changing land use and urban design to reduce the need for transportation. In 2018, 31.1 percent of crude oil refined within the state came from California, 11.4 percent came from Alaska, and 57.5 percent came from foreign sources such as Saudi Arabia (37 percent), Ecuador (14 percent), Colombia (13 percent), and Iraq (8 percent).

Analysis: The facilities included in the project will use electricity for a variety of purposes related to operation of the stadium, such as lighting, public address system, and turf maintenance. Additionally, the project will increase the use of the existing concessions and restrooms which uses electricity for lighting, foodservice equipment, and climate control. Estimates of the project's energy consumption (Table 8-6) were projected using the CalEEMod (Version 2016.3.1). Based on the modeling, the project is estimated to use 1,068 megawatt-hours of electricity annually. The project's

energy use would amount to 0.03 percent of the electricity used in Merced County in 2015, and 0.001 percent of the electricity used in the PG&E service area in 2018.

Energy will also be used for construction activities on the site. Project equipment will be subject to several air quality- and greenhouse gas-related requirements that would also minimize fuel consumption and reduce energy use. These requirements, coupled with the temporary nature of the construction activities, will ensure that these construction activities will not constitute a wasteful, inefficient and/or unnecessary consumption of energy.

Table 8-6
Project Energy Use

Construction Energy Use	**Gallons**	**Annual MMBTU**
Off-Road Equipment Fuel (Diesel)	30,122	4,138
On-Road Vehicle Fuel (Gasoline)	5,744	691
On-Road Vehicle Fuel (Diesel)	1,422	195
	Total:	5,025
Operational Fuel Use	**Gallons**	**Annual MMBTU**
Mobile Fuel (Diesel)	1,503	206
Mobile Fuel (Gasoline)	1,799	216
	Total:	423
Operational Electricity & Natural Gas Use	**Annual Energy**	**Annual MMBTU**
Electricity (kWh/yr, MMBTU)	1,068,070	3,644
Water Use, Treatment & Conveyance (kWh/Yr, MMBTU)	836	3
	Total:	3,647

MMBTU = one million British Thermal Units (BTU)

The project is also generally subject to the California Green Building Standards Code (Title 24, Part 11) and the California Energy Code (Title 24, Part 6). The standards collectively include additional requirements to improve the energy efficiency of buildings, including more efficient lighting, landscaping, and numerous other improvements.

Based on the above, the project will not have a significant impact regarding wasteful, inefficient, and/or unnecessary consumption of energy; local and regional energy supplies; and compliance with applicable energy standards.

8.11 Geology and Soils: Liquefaction, Landslides, Seismic Settlement, Lateral Spreading, Subsidence, and Expansive Soils

Issues and Thresholds of Significance:

- Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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?
  - Strong seismic-related ground shaking?
  - Seismic-related ground failure, including liquefaction?

- Landslides?
- Would the project result in substantial soil erosion or loss of topsoil?
- Would the project be located on a geologic unit or soil that is unstable, or that would become unstable because of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- Would the project be located on an expansive soil as defined in the Uniform Building Code, creating substantial direct or indirect risks to life or property?

Analysis: The Draft Program Environmental Impact Report for the *Merced Vision 2030 General Plan* concluded the following:

Faults: A fault, or a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side, are an indication of past seismic activity. It is assumed that those that have been active recently are the most likely to be active in the future, although even inactive faults may not be "dead." "Potentially Active" faults are those that have been active during the past two million years or during the Quaternary Period. "Active" faults are those that have been active within the past 11,000 years. Earthquakes originate as movement or slippage occurring along an active fault. These movements generate shock waves that result in ground shaking.

Based on review of geologic maps and reports for the area, there are no known active or potentially active faults, or Alquist-Priolo Earthquake Fault Zones within the City's planning area. Several faults exist within 60 miles of the City's planning area. The City's planning area could be subjected to ground shaking in the event of a major earthquake along the nearby faults; however, the seismic risk within the City's planning area is not considered to be significant.

Ground Shaking: Although the site is situated within an area of relatively low seismic activity, moderate ground shaking is considered possible at the site. However, it should be noted that this would be true for any potential school site within the MUHSD boundaries.

Liquefaction: Liquefaction is a phenomenon in which the strength and stiffness of the soil is reduced by earthquake shaking or other rapid loading. Liquefaction and related phenomena have been responsible for tremendous amounts of damage in earthquakes around the world.

Liquefaction of granular soils can be caused by strong vibratory motion due to earthquakes. Soils that are highly susceptible to liquefaction are loose, granular and saturated. The liquefaction of soils causes surface distress, loss of bearing capacity, and settlement of structures that are founded on the soils. Based on the predicted seismic accelerations, and soil and groundwater conditions typically encountered in the region, general liquefaction potential is low within the project area.

Landslides, Slope Stability, and Soil Erosion: The area within the City's planning area is generally level to gently sloping. Slopes potentially subject to failure are not generally present within the SOI where development is likely to have a significant impact. The currently stable conditions may be changed by slope alterations due to cuts or fills, and changes to drainage patterns. In general, the potential for land sliding or slope failure in the project in its current condition is very low. The USDA generally describes the soils in the project area as having slight erosion potential.

Seismic Settlement: Due to the moderate- to well-drained and generally consolidated nature of the geologic materials within the City's planning area, the risk of seismic settlement is considered to be low.

Lurch Cracking and Lateral Spreading: Lurch cracking and lateral spreading are processes that result in free face failures during a seismic event. No significant free face failures were observed within the City's planning area and the potential for lurch cracking and lateral spreading is, therefore, very low in the City's planning area in its current condition.

Subsidence: Differential settlement, resulting in the compaction of loose, less cohesive soils, may be caused by earthquakes and could occur in the City's planning area. The most likely areas are those in which the groundwater surface is deep (otherwise liquefaction would be more likely), the soils are loose to medium-dense, and the soil profile includes strata of loose and uniformly graded sand. The potential for ground subsidence due to earthquake motion is largely dependent on the magnitude, duration, and frequency of the earthquake waves. Unlike tectonic or seismically stimulated subsidence which occurs suddenly, most of the various cases of subsidence happen slowly over a long period of time. No known subsidence has occurred in the Merced planning area or has accompanied groundwater withdrawal.

Expansive Soils: Expansive soils are those soils that shrink and swell in response to changes in moisture content potentially causing serious damage to overlying structures. Soils in the area are generally moderate to deep, silty and clayey loams. Some gravely and cobbley loams are also present, primarily concentrated in the stream drainages. The soils listed within the area are not generally considered to be expansive and have a generally low to moderate erosion potential.

Level of Significance: Less than significant

8.12 Greenhouse Gas Emissions (GHGs): Greenhouse Gas Generation and Compatibility with Applicable Plans, Policies, and Regulations

Issues and Thresholds of Significance: Would the project:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

(b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Analysis: The discussion of greenhouse gas (GHG) impacts in this section primarily reflects information in the Air Quality & Greenhouse Gas Impact Analysis prepared for the project by Ambient Air Quality & Noise Consulting (Appendix A).

Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Short-term and long-term GHG emissions associated with the development of the proposed project are discussed in greater detail, as follows:

Short-term Greenhouse Gas Emissions:

Short-term annual GHG emissions are summarized in Table 8-7. Based on the modeling conducted, annual emissions of GHGs associated with construction of the proposed project would total approximately 419.6 $MTCO_2e$. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Actual emissions would vary, depending on various factors including construction schedules, equipment required, and activities conducted. Assuming an average project life of 30 years, amortized construction-generated GHG emissions would total approximately 14.0 $MTCO_2e$/yr. Annual construction-generated GHG emissions would not exceed the GHG significance threshold of 1,100 $MTCO_2e$/yr. As a result, short-term construction GHG emissions would not have a significant impact on the environment nor be anticipated to conflict with GHG-reduction efforts. As a result, this impact is considered *less than significant.*

Table 8-7
Annual Construction GHG Emissions

Construction Year	GHG Emissions ($MTCO_2e$)
Year 1	400.1
Year 2	19.4
Total:	419.6
Amortized Construction Emissions:	14.0
GHG Significance Threshold ($MTCO_2e$/SP/yr):	1,100
Exceeds Threshold/Significant Impact?	No

Based on CalEEMod computer modeling. Amortized construction-generated GHG emissions assume a 30-year project life. Refer to Appendix A for modeling results and assumptions.

Long-term Greenhouse Gas Emissions:

Estimated long-term increases in GHG emissions associated with the proposed project are summarized in Table 8-8. Based on the modeling conducted, operational GHG emissions would total approximately 421.8 $MTCO_2e$/year in 2021 and approximately 358.9 $MTCO_2e$/year in 2030. With the inclusion of amortized construction emissions, operational GHG emissions would total approximately 435.8 $MTCO_2e$/year in 2021 and approximately 372.9 $MTCO_2e$/year in 2030. Total project-generated GHG emissions would not exceed the GHG significance threshold of 1,100 $MTCO_2e$/yr. As a result, operational GHG emissions would not have a significant impact on the environment nor be anticipated to conflict with GHG-reduction efforts. As a result, this impact is considered *less than significant.*

Table 8-8
Annual Operational GHG Emissions

Emissions Source	GHG Emissions ($MTCO_2e$/year) [1]	
	Year 2021	Year 2030
Area Source	0.0	0.0
Energy Use	372.4	316.9
Mobile Source[2]	49.1	41.7
Waste Generation	0.1	0.1
Water Use	0.2	0.1
Total Project Operational Emissions:	421.8	358.9
Amortized Construction Emissions:	14.0	14.0
Total with Amortized Construction Emissions:	435.8	372.9
GHG Significance Threshold ($MTCO_2e$/SP/yr):	1,100	1,100
Exceeds Threshold/Significant Impact?	No	No

1. Project-generated emissions were quantified using the CalEEMod computer program.

2. Fleet distribution data for the project is not available. Mobile-source emissions are based on default vehicle fleet distribution for Merced County, which includes all vehicle types/classifications, including medium and heavy-duty vehicles. Does not reflect reductions in VMT anticipated to occur with project implementation. Actual emissions would be lower.

Refer to Appendix A for modeling results and assumptions.

Compatibility with Applicable Plans, Policies, and Regulations

The City of Merced has adopted a GHG-reduction plan for emissions generated by activities under the control or influence of the City. Although the City's GHG-reduction plan does not specifically address the development of schools or recreational land uses, the proposed project would be designed to meet current building energy-efficiency standards, which includes measures to reduce overall energy use, as well as, reductions in water use and waste generation. These improvements would help to further reduce the project's GHG emissions and would also help to reduce community-wide GHG emissions. Furthermore, as noted above, the proposed project would not result in increased GHG emissions that would exceed the GHG significance thresholds. For these reasons, this impact would be considered *less than significant*.

Level of Significance: Less than significant

8.13 Hazards and Hazardous Materials: Routine Use, Transport, and Disposal

Issues and Threshold of Significance:

- Would the project create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials?
- Would the project 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?

Analysis: The term *hazardous material* as used in this EIR is defined in California Health and Safety Code Section 25260 as follows:

> (d) *Hazardous material* means a substance or waste that, because of its physical, chemical, or other characteristics, may pose a risk of endangering human health or safety or of degrading the environment. *Hazardous material* includes, but is not limited to, all of the following:
>
> > (1) A hazardous substance, as defined in Section 25281 or 25316 [of the Health and Safety Code].
> >
> > (2) A hazardous waste, as defined in Section 25117 of the [Health and Safety Code].
> >
> > (3) A waste, as defined in Section 470 or as defined in Section 13050 of the Water Code.
>
> (e) *Hazardous materials release site* or *site* means any area, location, or facility where a hazardous material has been released or threatens to be released into the environment. "

Hazardous materials would be used in the construction and operation of the project. Hazardous materials used during the construction process would include fuels, lubricants, greases, solvents, adhesives, architectural coatings, including paints, and similar materials. The transport, use, or disposal of construction materials would not create a significant hazard to the public. Moreover, these activities would not result in a significant hazard to the public through reasonably foreseeable upset or accident conditions. This conclusion reflects the following considerations:

MUHSD would require in project construction contracts that the project contractor shall transport, use, and dispose of any hazardous materials following applicable laws and regulations, shall not transport hazardous materials to the site until they are needed, shall not use the site for storage of hazardous materials, and shall remove from the site any surplus or otherwise unneeded hazardous materials when they are no longer needed.

Ongoing project operations would involve the use of hazardous materials for cleaning and maintenance purposes; for example, cleansers, solvents, paints, pesticides, and fertilizers. The transport, use, or disposal of these materials would not create a significant hazard to public nor

would these activities create a significant hazard to the public through reasonably foreseeable upset or accident conditions. This conclusion reflects the following considerations:

MUHSD would specify that its staff and contractors shall transport, use, and dispose of any hazardous materials following applicable laws and regulations, shall not transport hazardous materials to the site until they are needed, shall not use the site for storage of hazardous materials, and shall remove from the site any surplus or otherwise unneeded hazardous materials when they are no longer needed.

MUHSD must comply with San Joaquin Valley Air Pollution Control District Regulations and Rules and its own policies for protecting students and staff from hazards resulting from the routine use, transport, and disposal of hazardous materials.

MUSHD must comply with the notification, posting, recordkeeping, and all other requirements of the Healthy Schools Act. (Education Code Sections 17608 - 17613, 48980.3; Food & Agricultural Code Sections 13180 - 13188). Per this law, the District must post signs for 24 hours prior to indoor school pesticide applications and the signs must remain for 72 hours. Likewise, the law requires signs to be posted 24 hours prior to outdoor pesticide applications and remain for 72 hours. Finally, the law requires schools to establish a parent and staff registry that provides 72-hour advance written notification of pesticide applications.

Level of Significance: Less than significant

8.14 Hydrology and Water Quality: Water Quality Standards and Waste Discharge Requirements

Issue and Threshold of Significance: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Analysis: The project could potentially degrade water quality by causing erosion and siltation during construction and site preparation activities and by generating pollutants during both construction and operation that would be carried away in storm runoff to drainage facilities. Construction and site preparation activities would potentially generate dust, litter, chemicals, paint fragments and stucco flakes, as well as pollutants from construction vehicles and processes. These materials have the potential to be carried away by stormwater runoff into the drainage system. Operation of the project would increase the potential for stormwater runoff to transport contaminants from impermeable surfaces into the drainage system. Runoff from turf areas may contain pesticides and nutrients.

Construction and site preparation activities of the project are subject to several regulations that address erosion and sediment control and minimize the resulting effects of erosion on water quality. These requirements include compliance with the City's National Pollution Discharge Elimination System (NPDES) permit and the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which are specifically aimed at reducing impacts on surface waters that may occur due to construction activities. The *Merced Vision 2030 General Plan* includes policies and actions to control general erosion and runoff pollution. Policies under Public Services and Facilities, and Open Space, Conservation, and Recreation have standards to protect or enhance the groundwater quality.

Given the extent of existing regulations and mandated compliance that the project would be required to comply with that address reducing or avoiding the erosion of disturbed soils during construction activities, the impact would be less than significant.

Level of Significance: Less than significant

8.15 Hydrology and Water Quality: Groundwater Supplies and Recharge

Issue and Threshold of Significance: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Analysis: The project site is served by the City of Merced's municipal water system As the City of Merced currently relies solely on groundwater from 22 wells for its municipal water supply, the project would entail consumption of groundwater on to meet its water demands.

As discussed under Section 8.23 (Utilities and Services), implementation of Phase 1 of the project will not increase consumption of water supplied by the City's water system for irrigational purposes as the project site is already developed as an athletic field, however, it will increase the consumption of domestic use (toilets, water fountains) during varsity and junior varsity football home games (six each per season), as well as commencement at the stadium. The project's domestic use is estimated to consume approximately 65,100 gallons (0.2 acre-feet) annually, although project's water demand would replace the demand for water during varsity and junior varsity football home games currently held at Golden Valley High School's Veteran's Stadium, resulting in zero net demand on the city's water supply. Additionally, Phase 2 of the project includes the conversion of natural turf to artificial turf which will substantially reduce the project's water usage resulting in a net water savings of 17,000,000 gallons (52 acre-feet) annually over the existing conditions.

As discussed under Section 8.16 (Hydrology and Water Quality), the project will add approximately 3,000 square feet of impermeable surface, resulting in 364,675 gallons per year (1.12 acre-feet per year) of runoff being diverted to Black Rascal Creek. The addition of artificial turf in Phase 2 will divert an additional 466,484 gallons per year (1.43 acre-foot per year) of runoff to Black Rascal Creek.

The loss of groundwater recharge from conversion of natural turf to artificial is more than offset by the water usage savings.

Level of Significance: Less than significant

8.16 Hydrology and Water Quality: Drainage Patterns and Runoff

Issue and Threshold of Significance: Would the project 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 substantial erosion or siltation on- or off-site?
- Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- 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?
- Impede or redirect flood flows?

Analysis: No rivers or streams exist on the project site. Black Rascal Creek runs along the north side of the project site. The project site is generally flat and presently made up of natural turf, which typically does not result in notable stormwater runoff except when soils are saturated during periods of extended above-normal rainfall, in which case excess runoff drains into Black Rascal Creek.

The generation of stormwater runoff from the project site will increase minimally when developed with the new bleachers, a ticket booth, and paved pathways, which will increase impermeable surfaces on the site by approximately 3,000 square feet, resulting in approximately 364,675 gallons

per year (1.12 acre-feet) of runoff annually, based on an annual average of 13 inches of rain per year. The existing natural turf will be replaced with artificial turf in Phase 2 of the project. Typically, artificial turf is not built over permeable base and would add additional 57,600 square feet of impermeable surface, resulting in an additional 466,484 gallons per year (1.43 acre-foot per year) annually. Runoff from new impermeable surfaces will enter a new storm drain which will direct stormwater runoff to Black Rascal Creek.

As discussed in the *Draft Environmental Impact Report for the Merced Vision 2030 General Plan*, the City of Merced has prepared an MS4 and the *City of Merced Storm Water Management Plan (SWMP)* contains specific requirements related to Best Management Practices (BMPs) and other approaches designed to minimize erosion and runoff during construction and operation of new development. The *Merced Vision 2030 General Plan* Public Services and Facilities Element includes several policies directed at mitigating detrimental effects from drainage and runoff.

Compliance with existing plans and regulations will assure than any impacts associated with the project related to drainage and runoff will be less than significant.

Level of Significance: Less than significant

8.17 Hydrology and Water Quality: Flood, Tsunami, and Seiche Hazard

Issue and Threshold of Significance: Would the project, in flood hazard, tsunami, or seiche zone, risk release of pollutants due to project inundation?

Analysis: The majority of the site is located outside the 500-year floodplain (Zone X), with the exception of a small sliver along the north edge adjacent to Black Rascal Creek, as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). The floodplain boundaries are delineated by FEMA on the basis of hydrology, topography, and modeling of flow during predicted rainstorms. The analysis of predicted flooding does not account for the effects of continued land subsidence or increases in sea level. The part of the project area within the floodplain will house the visiting team bleachers. No pollutants will be stored within that area, therefore there is no risk of release of pollutants, even if that section were to become inundated.

According to the *Draft Environmental Impact Report for the Merced Vision 2030 General Plan*, there are two dams located in the vicinity of the City of Merced. Of these, one dam, Bear Reservoir, could cause substantial flooding at the proposed project site in the event of a failure. Because Bear Reservoir Dam is an earthen-fill dam which is flexible and, therefore, earthquake resistant, risk of failure of this dam is considered low.

A tsunami is a large, transient long-period sea wave caused by submarine landslides, earthquakes, or volcanic eruptions. Based on the site's distance from the ocean, tsunami hazards at the site are not considered possible.

Seiches are standing waves produced in a body of water such as a reservoir, lake, or harbor by wind, atmospheric changes, or earthquakes. The closest large body of water, Yosemite Lake, is approximately 3.5 miles from the site. Therefore, seiche hazards at the site are not considered possible.

Level of Significance: Less than significant

8.18 Hydrology and Water Quality: Plan Conformance

Issue and Threshold of Significance: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Analysis: The Sustainable Groundwater Management Act (SGMA) was signed into law in 2014 to remedy unsustainable groundwater depletion in groundwater basins in California. SGMA requires the development and adoption of Groundwater Sustainability Plans (GSPs) by 2020 and that all high and medium priority groundwater basins must reach sustainability by 2040. SGMA gives local agencies the authorities to manage groundwater in a sustainable manner and allows for limited state intervention when necessary to protect groundwater resources.

The Merced Groundwater Subbasin is one of 21 basins in the State of California identified by the California Department of Water Resources as critically overdrafted and one of 48 basins considered high priority. Consistent with the requirements of the SGMA, water management and land management agencies in Merced Subbasin have formed three Groundwater Sustainability Agencies (GSAs): the Merced Irrigation-Urban Groundwater Sustainability Agency, the Merced Subbasin Groundwater Sustainability Agency, and the Turner Island Water District Groundwater Sustainability Agency. The three GSAs are collaborating on developing one Groundwater Sustainability Plan for the entire Merced Groundwater Subbasin by January 2020. To develop the Plan, the GSAs will review groundwater conditions and identify means to ensure the long-term sustainability of the Merced Groundwater Subbasin.

As discussed above in Section 8.15, the proposed stadium project is not expected to adversely affect groundwater supplies or recharge. As such, the project is not expected to conflict with or obstruct the GSP ultimately adopted by the Merced Irrigation-Urban GSA. No other potential conflicts pertaining to water quality planning and/or groundwater management have been identified.

Level of Significance: Less than significant

8.19 Noise: Groundborne Vibration and Noise

Issue and Threshold of Significance: Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?

Analysis: Long-term operational activities associated with the proposed project would not involve the use of any equipment or processes that would result in potentially significant levels of ground vibration. Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. Construction activities associated with the proposed improvements would likely require the use of various off-road equipment, such as tractors, concrete mixers, and haul trucks. The use of major groundborne vibration-generating construction equipment, such as pile drivers, would not be required for this project.

Groundborne vibration levels associated with representative construction equipment are summarized in Table 8-9. As depicted, ground vibration generated by construction equipment would be approximately 0.089 in/sec ppv, or less, at 25 feet. Predicted vibration levels at the nearest existing structures would not be anticipated to exceed commonly applied criteria for structural damage or human annoyance (i.e., 0.5 and 0.2 in/sec ppv, respectively). In addition, no fragile or historic structures have been identified in the project area.

Table 8-9
Representative Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity at 25 Feet (In/Sec)
Large Bulldozer	0.089
Loaded Truck	0.076
Jackhammer	0.035
Small Bulldozer	0.003
Source: FTA 2006, Caltrans 2004	

Level of Significance: Less than significant

8.20 Public Services: Fire and Police Protection Facilities

Issues and Thresholds of Significance: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police or fire protection facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times or other performance objectives for fire or police protection services?

Analysis: Development of the proposed high school stadium would not increase demand on services from the proposed campus during school hours, but it would increase demand on services after school when games are played. However, this increase would be offset by a decrease in service demand at the Golden Valley High School's Veteran's Stadium where Merced High School games are currently played. The project would direct demand for police and fire services to a different location, potentially impacting response times, but not to the extent that it would require new or altered police or fire protection facilities. The project site is approximately 0.8 miles from the Merced Fire Department's Station 53 and 1.5 miles from Merced Police Department headquarters.

MUHSD has not received any indications from the City that development of the proposed project would result in the need for the City to develop new police or fire protection facilities or to alter existing facilities.

Level of Significance: Less than significant

8.21 Transportation: Vehicle Miles Traveled

Issues and Thresholds of Significance: Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Analysis: The discussion of vehicle miles travelled (VMT) impacts in this section primarily reflects information in the Traffic Impact Analysis (TIA) prepared for the project by JLB Traffic Engineering, Inc (Appendix E).

Senate Bill (SB) 743 (Steinberg 2013) was approved by then Governor Brown on September 27, 2013. SB 743 created a path to revise the definition of transportation impacts according to CEQA. The revised CEQA Guidelines requiring VMT analysis became effective December 28, 2018; however, agencies have until July 1, 2020 to finalize their local guidelines on VMT analysis. Therefore, as agencies finalize their VMT analysis protocol, CEQA transportation impacts are to be determined using LOS of intersections and roadways, which is a measure of congestion. The intent of SB 743 is to align CEQA transportation study methodology with and promote the statewide goals and policies of reducing vehicle miles traveled (VMT) and greenhouse gases (GHG). Three objectives of

SB 743 related to development are to reduce GHG, diversify land uses, and focus on creating a multimodal environment. It is hoped that this will spur infill development.

The Technical Advisory on Evaluating Transportation Impacts in CEQA published by the Governor's Office of Planning and Research (OPR) dated December 2018 acknowledges that lead agencies should set criteria and thresholds for VMT and transportation impacts. However, the Technical Advisory provides guidance to residential, office and retail uses, citing these as the most common land uses. Beyond these three land uses, there is no guidance provided for any other land use type. The Technical Advisory also notes that land uses may have a less than significant impact if located within low VMT areas of a region. Screening maps are suggested for this determination.

VMT is simply the product of a number of trips and the length of those trips. The first step in a VMT analysis is to establish the baseline average VMT, which requires the definition of a region. The Technical Advisory states that existing VMT may be measured at the regional or city level. On the contrary, the Technical Advisory also notes that VMT analyses should not be truncated due to "jurisdictional or other boundaries."

As the Project is within a defined service area that is currently being served by another stadium, JLB determined the anticipated average trip length reductions that would be observed as a result of the proposed stadium. It estimated that the average trip length for Merced High School Friday evening events taking place at the Merced Golden Valley High School Stadium is 2.66 miles. With the Project, the estimated average trip length is 1.19 miles resulting in a reduction of 1.46 miles per project trip on average. Therefore, upon completion of this Project, VMT will be significantly reduced. Additionally, the proposed stadium is located near transit services and adequate pedestrian and bicycle facilities.

Under CEQA Guidelines Section 15064.3(b), land use 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 project was determined to significantly reduce VMT, therefore it is consistent this this section and considered less than significant.

Level of Significance: Less than significant

8.22 Utilities and Service Systems: Facilities

Issues and Thresholds of Significance: Would the project 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.

Analysis: The existing high school is already adequately served by all the above listed facilities. The project will either not require new or relocated facilities to serve the project, or any such new or relocated Facilities will be minor.

Level of Significance: Less than significant

8.23 Utilities and Service Systems: Water Supply

Issues and Thresholds of Significance: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Analysis: The City of Merced provides water for domestic and commercial uses and for fire suppression to properties within its service area through a system of groundwater wells, storage tanks, and interconnected water main pipelines. The City's municipal water system relies entirely

upon groundwater resources to supply the current daily water demand. The Merced Groundwater Subbasin from which the City draws its groundwater has been identified as critically overdrafted.

Implementation of the project will not increase consumption of water supplied by the City's water system for irrigational purposes as the project site is already developed as an athletic field, however, the project will increase the consumption of domestic use (toilets, water fountains) during varsity and junior varsity football home games (six each per season), as well as commencement at the stadium. The project's domestic use is estimated to consume approximately 65,100 gallons (0.2 acre-feet) annually[4], although project's water demand would replace the demand for water during varsity and junior varsity football home games currently held at Golden Valley High School's Veteran's Stadium, resulting in zero net demand on the city's water supply. Additionally, the conversion of the natural turf to artificial turf in Phase 2 will significantly reduce the project's water usage, resulting in a net savings of approximately 17,000,000 gallons (52 acre-feet) per year[5].

Level of Significance: Less than significant

8.24 Utilities and Service Systems: Wastewater Capacity

Issues and Thresholds of Significance: Would the proposed project 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?

Analysis: The City of Merced owns and operates the wastewater collection system which consists of about 253 miles of pipelines and 20 pumping stations. The City of Merced's Wastewater Treatment and Reclamation Facility has an existing capacity of 12 Mgal/d and has been planned to expand to 20 Mgal/d in stages, as needed, to handle buildout of the *Merced Vision 2030 General Plan*. Treated effluent is disposed of in several ways depending on the time of year. Most of the treated effluent is discharged to Hartley Slough throughout the year. The remaining treated effluent is delivered to a land application area and the on-site City-owned wetland area south of the treatment plant.

Implementation of the project would result in an increase of wastewater generated during home varsity and junior varsity football games, and commencement. However, as with domestic water usage, the slight increase at Merced High School is offset by the decrease from relocating the events from other venues. Therefore, there is no net increase in demand for wastewater treatment.

No indication has been received from the City of Merced in response to the Notice of Preparation that the project would not have adequate capacity to serve the project.

Level of Significance: Less than significant

8.25 Utilities and Service Systems: Solid Waste Capacity

Issues and Thresholds of Significance: Would the project:

- 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?
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

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[4] Based on the Monster Park data of 3.0 GPCD contained in Table 4 of Appendix D in the *49ers Stadium Water Supply Assessment* multiplied by the seating capacity of project and number of new events per year.

[5] Based on Playing Field Area GPY contained in Table 7 of Appendix D in the *49ers Stadium Water Supply Assessment,* adjusted for project's field area.

Analysis: As discussed in the Project Setting (Section 4.2), the landfill which would serve the project has been determined to have sufficient capacity to accommodate solid waste disposal demands on a City-wide level, including the existing games played at Golden Valley High School's Veteran's Stadium and commencement held at Merced College's Stadium 76 - Don Odishoo Field, through the buildout of the *Merced Vision 2030 General Plan*. Solid waste will be generated during construction, but operation of the project will generate no net increase in solid waste, just change the location where the waste is generated. Additionally, no indication has been received from the City of Merced or any other agency in response to the Notice of Preparation that the project would not comply with federal, state, and local statues and regulation related to solid waste.

Level of Significance: Less than significant

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9. No Impacts

9.1 Agricultural and Forestry Resources: Farmland, Forest Land, and Timberland

No impacts to farmland, forest land, or timberland would result from the project as there is no farmland, forest land, or timberlands located within or adjacent to the project site. The project site is already developed as an athletic field on an existing school site and is not zoned for agriculture use or Timberland Production.

9.2 Biological Resources: Policies and Plans

The project would not: conflict with any local policies or ordinances protecting biological resources; conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan because none exist that apply to the project area. All existing HCPs in Merced County are project-specific HCPs and not overarching for the County

9.3 Geology and Soils: Septic Tanks or Alternative Wastewater Disposal System

The project does not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

9.4 Hazards and Hazardous Materials: Hazardous Materials Sites

A review of the California Department of Toxic Substances Control's EnviroStor website did not result in the identification of any hazardous sites within the project area pursuant to Government Code Section 65962.5.

9.5 Hazards and Hazardous Materials: Emergency Response Plan

The project does not have any operational characteristics that would impair or physically interfere with an emergency response plan or evacuation route.

9.6 Hazards and Hazardous Materials: Wildland Fires

The project area is not in a wildland area. All the land surrounding the site is in urban use. Therefore, the project would not expose people or structures to a significant risk of loss, injury, or death from fires, including where wildlands are adjacent to urbanized areas.

9.7 Land Use and Planning: Physically Divide Community

Development of the proposed high school stadium and related facilities on the existing campus would not physically divide the Merced community or local neighborhood.

9.8 Land Use and Planning: Land Use

The project site is an existing high school. The use of the site is consistent with the land use designation of the *Merced Vision 2030 General Plan* land use designation, which is "School". To the extent the project conflicts with any general plan policy, standard or regulation (such as noise), any such conflicts are addressed in the individual subject matter sections of this EIR.

9.9 Mineral Resources: Availability and Recovery

The 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 or of a locally important mineral resource recovery site. As discussed in the *Draft EIR for the Merced Vision 2030 General Plan*, the City of Merced does not contain any mineral resources that require managed production and economic deposits of precious or base metals are not known to occur in the City's planning area. Thus, the proposed project would not result in a loss of a known mineral resource or recovery site.

9.10 Noise: Airports

The project area is not within an airport land use plan or within two nautical miles of a public or private airport. Therefore, the project would not expose people residing or working in the project area to excessive noise levels resulting from operations at an airport.

The nearest airports in the project vicinity include the Merced Regional Airport and the Merced County Castle Airport, which are located approximately 3.3 and 5.6 miles to the southwest and northwest, respectively. No private airstrips were identified within two miles of the project site. Implementation of the proposed project would not result in the exposure of sensitive receptors to aircraft noise levels nor would the proposed project affect airport operations.

9.11 Population and Housing: Growth Inducement

The project would not induce growth as it is upgrading existing facilities and not increasing the capacity of the school.

9.12 Population and Housing: Displacement of Housing or People

The project would not result in the displacement of housing units or people. Development of the project would not eliminate any existing housing units.

9.13 Public Services: Schools, Parks, and Other Public Facilities

The project is intended as an improvement to the District's existing school and athletic facilities, and the impacts of the project are analyzed throughout this EIR in each resource category. The project would not result in an increase in student capacity or population growth in the area generating the need or demand for additional parks, schools, or public facilities elsewhere which would have an adverse physical effect on the environment.

9.14 Recreation: Deterioration of Existing Facilities or Substantial Adverse Impact from New Facilities

The proposed project is intended as an improvement to the District's existing facilities, the impacts of which are analyzed throughout this EIR in each resource category. Because the project would not result in an increase in student capacity or population growth in the area, it will not cause the deterioration of existing parks or recreational facilities or require the construction or expansion of facilities which would have an adverse physical effect on the environment.

9.15 Transportation: Emergency Access

No impacts regarding emergency access were identified as part of the analysis. The exiting high school site has adequate emergency access and this project would have no impact on the current emergency access. The project would be required to meet design guidelines for emergency access

features (e.g. fire lanes). No comments or other information were provided suggesting the project would lack the ability to provide adequate emergency access.

9.16 Wildfire

The project is not located in or near state responsibility areas or land classified as very high fire severity zones.

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10. Additional CEQA Considerations

10.1 Cumulative Impacts

Purpose: State CEQA Guidelines Section 15130 specifies, in part:

An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

A cumulative impact consists of an impact which is created because of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact. The following elements are necessary to an adequate discussion of significant cumulative impacts:

Either:

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or
- A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

Approach: This EIR uses a summary of projections contained in the EIR prepared for the adopted *Merced Vision 2030 General Plan.* This approach is used for the following reasons:

- The general plan encompasses the project area and designates the land within the project area for school use. The potentially-resulting cumulative impacts are consistent with those which were considered in the EIR the City certified for the general plan.
- The analysis of cumulative impacts in the *Merced Vision 2030 General Plan EIR* assumes as the cumulative development scenario the existing and probable future development within the City of Merced as would be enabled by the general plan, combined with existing and probable future development in communities within the vicinity of the City.

Analysis: The *Merced Vision 2030 General Plan EIR* evaluated whether existing development, probable future development in Merced per the general plan, and probable future development elsewhere in the vicinity of the City would result in the following significant cumulative impacts:

- **Air Quality:** "Cumulative air quality impacts, including greenhouse gas emissions, were considered in terms of the various land uses proposed under the proposed General Plan and the traffic projections generated by the traffic model. Due to the existing and projected air quality issues in the San Joaquin Valley Air Basin, the proposed General Plan would contribute considerably to a *significant and unavoidable* cumulative air quality impact."

(General Plan DEIR, Page 5-5). This Draft EIR found that potential impacts of the project both in terms of construction and operational emissions would not result in a cumulatively considerable increase in air pollutant emissions and would not conflict with air quality attainment or maintenance planning efforts (see Sections 8.3 and 8.5).

- **Greenhouse Gas Emissions:** "Policies of the proposed General Plan will reduce global climate change impacts; however, buildout under the proposed General Plan will nonetheless result in a substantial amount of GHG emissions contributing to global climate change. Because it cannot be determined to a reasonable degree of certainty that buildout under the proposed General Plan will not result in a cumulatively considerable incremental contribution to the significant cumulative impact of global climate change, the impacts of the proposed project on global climate change are a *significant, unavoidable and cumulatively considerable* impact." (DEIR, Page 5-10) The GHG analysis in the Draft EIR found that short-term construction and long-term operational GHG emissions would be substantially below the significance threshold (see Section 8.12). Additionally the project would result in a reduction in vehicle miles traveled and, therefore, a reduction in the GHG emissions associated with that reduction. For these reasons, the project would not have a cumulatively considerable impact.
- **Hydrology and Water Quality:** "Regarding groundwater depletion and recharge, Merced is within the Merced Sub-basin which is, according to the California Department of Water Resources, being subject to critical conditions of overdraft. Also, a Groundwater Impacts Analysis prepared by Brown and Caldwell for the City of Merced indicates that there is groundwater overdraft in the City's service area, and that the rate of overdraft will continue to increase with future urban development. Implementation of mitigation measures in Section 3.8 (#3.8-5a through 3.8-5h), will help to reduce this impact within Merced's Planning Area; however, it will remain a *significant cumulative impact*." (DEIR, Page 5-7) As noted in Section 8.15 of this Draft EIR, the project will not result in a net increase in water demand, and would result in substantial decrease in water demand once the natural turf is replaced by artificial turf during the second phase of the project. As such, the project will not adversely affect groundwater depletion and recharge.
- **Transportation: "**Cumulative traffic impacts of the proposed General Plan are more fully described in Section 3.15 Transportation/Traffic in Chapter Three of this Draft EIR. The traffic model used considered growth under the Draft General Plan in conjunction with the projected regional growth for Merced County. Therefore, the transportation analysis of the General Plan is inherently cumulative in nature, because the implementation of the proposed project would take place over many years and would occur in conjunction with other growth and development throughout the region. As identified in Chapter Three the proposed project would result in substantial increase in vehicular traffic on roadways in the SUDP/SOI resulting in a significant and unavoidable impact. Because this analysis was based on a cumulative model, the project's incremental contribution to traffic impacts would be *cumulatively considerable*." (DEIR, Page 5-9). Section 7.5 of this Draft EIR indicates the traffic impacts in the Cumulative Year 2039 plus Project scenario can be mitigated by modifications to: the Merced High School driveway access to Olive Avenue; the State Route 59/Olive Avenue intersection; and the lane configuration at the "G" Street/Olive Avenue intersection. The traffic measures necessary are minor and the project would constitute an insignificant contribution to the cumulative General Plan traffic.

Based on the information in this Draft EIR and the *Merced Vision 2030 General Plan EIR*, the project would not result a cumulatively considerable contribution in relation to the significant cumulative impacts identified in the *Merced Vision 2030 General Plan EIR*.

10.2 Alternatives to the Proposed Project

Purpose: CEQA Guidelines Section 15126.6 requires that EIRs contain a discussion of alternatives to the proposed project, as follows:

An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives.

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which can avoid or substantially lessen any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be costlier.

This EIR has identified one impact of the project as significant and unavoidable: noise resulting from an increase of number of events held at that location. Additionally, the EIR has identified several potentially significant impacts which are capable of being avoided or mitigated to a less than significant level (summarized in Section 2.4). The analysis of alternatives focuses on the one significant and unavoidable impact, as the collection of impacts capable of being avoided or mitigated has been determined to be substantially the same as analyzed in this EIR (save for the "No Project" alternative).

The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination.

The objectives of MUHSD in proposing the project are:

- To provide a new high school football stadium on the Merced High School campus to allow home football games to be played on campus. This is very important to the Merced High School community and will eliminate the need to host "home" football games at Golden Valley High School's Veteran's Stadium.
- To provide an improved venue for other MHS sporting events.
- To provide a facility capable of accommodating on-campus graduation ceremonies, instead of using Merced College's Stadium 76 - Don Odishoo Field.
- To utilize existing stadium infrastructure including lighting, restrooms, and concessions.

List of Alternatives: The alternatives which were considered as part of this EIR are described below, with discussion of how each alternative avoids the significant and unavoidable impacts of the subject project, whether any additional significant and unavoidable impacts would occur, and to what extent the project objectives would be met.

"No Project" Alternative

The State CEQA Guidelines require that an EIR evaluate the specific alternative of "No Project" along with its impact. The purpose of describing and analyzing a No Project alternative to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the project. With the No Project alternative, none of the potentially significant impacts of the project would occur, including the significant and unavoidable increase in noise levels at nearby residences; potential impacts to biological, cultural, and paleontological resources (all of which can be mitigated below a level of significance); and traffic impacts (which can be mitigated below a level of significance). The No Project alternative, however, would not meet any of the project objectives and not result in the environmental benefit of a decrease in vehicle miles traveled due to game spectators and participants not having to travel for home games.

"Alternative Design" Alternatives

Potential alternative designs for the project could include reorientation of the field, the use of solid risers between the spectator seat and floor (or plywood backing on the rear vertical face of the bleachers), and orienting the PA system speakers to be directed downward and/or mounting the speakers to be shielded from line of sight to nearby residences. Reorienting the field to north south rather than an east-west direction would not be feasible because it would result in the removal of significant existing hardcourt space and the relocation of the existing lights. Based on the noise modeling, field reorientation would not result in a significant improvement in noise levels at nearby residences. The design items related to the solid seating and PA orientation have been included as mitigation measures listed in Section 6.1. Even with these design mitigation measures, noise levels at nearby residences still would exceed City standards.

"*Alternative On-Site Location" Alternative*

Besides the proposed location, there is no available land on or near the existing high school that could accommodate a new stadium except the existing track and soccer field on the southeast corner of the campus. Building the stadium at the southeast campus location would avoid the increase in ambient noise levels at nearby residences north of the project site, and would avoid impacts related to biological resources because it would not be located near the eucalyptus trees and Black Rascal Creek to the north of the campus. However, this alternative does not meet the project objective to utilize existing infrastructure including lighting, restrooms, and concessions.

Environmentally Superior Alternative: The environmental superior alternative is the No Project alternative. This alternative would avoid of the potentially significant impacts of the project would occur, including the significant and unavoidable increase in noise levels at nearby residences; potential impacts to biological, cultural, and paleontological resources (all of which can be mitigated below a level of significance); and traffic impacts (which can be mitigated below a level of significance). The No Project alternative, however, would not meet any of the project objectives and not result in the environmental benefit of a decrease in vehicle miles traveled due to game spectators and participants not having to travel for home games.

The "Alternative On-Site Location" alternative is also environmentally superior to the proposed project because it would not result in an increase in noise to nearby residents and would avoid impacts related to biological resources. The other potentially significant impact of the project, which can all be mitigated below a level of significance, would still remain. This alternative cannot feasibly attain the objective of to utilize existing infrastructure including lighting, restrooms, and concessions.

11. Names of Persons Who Prepared or Assisted in Preparing the Environmental Impact Report

11.1 Lead Agency and Project Proponent

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www.ambient.consulting

JLB Traffic Engineering, Inc. (Traffic Impact Analysis)
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www.jlbtraffic.com

12. Sources Consulted

Following are the documents and other sources consulted in preparing this EIR:

City of Merced

City of Merced website: cityofmerced.org

City of Merced. *Merced Vision 2030 General Plan*. January 2012.

City of Merced. *Merced Vision 2030 General Plan Draft Program Environmental Impact Report*. August 2010.

City of Merced. *Municipal Code of Merced, California*. June 17, 2019.

City of Merced. *Sewer System Management Plan (SSMP).* December 16, 2014.

City of Merced. *Storm Drain Master Plan*. April 19, 2002.

City of Merced. *Wastewater Collection System Master Plan.* December 15, 2017.

City of Merced. *Water Master Plan.* January 2014.

Merced Union High School District

Merced Union High School District Website: http://www.muhsd.org

Merced Irrigation-Urban Groundwater Sustainability Agency

Merced Groundwater Subbasin website: mercedsgma.org

Merced Irrigation District website: http://www.mercedid.com

San Joaquin Valley Air Pollution Control District
(https://www.valleyair.org/rules/1ruleslist.htm)

Regulation VIII – Fugitive PM10 Prohibitions

Regulation IX – Mobile and Indirect Sources

State of California

California Department of Water Resources. Sustainable Groundwater Management (website). URL: http://www.water.ca.gov/groundwater/sgm/

California Energy Commission. *Energy Consumption Database*. ecdms.energy.ca.gov

California Energy Commission. *Oil Supply Sources to California Refineries.* https://ww2.energy.ca.gov/almanac/petroleum_data/statistics/crude_oil_receipts.html

California Environmental Quality Act, California Public Resources Code, Division 13, Environmental Quality

California Code of Regulations, Title 14, Chapter 3: Guidelines for Implementation of the California Environmental Quality Act

California Code of Regulations, Title 24, Part 1 through Part 12

United States of America

Department of Homeland Security. Federal Emergency Management Agency. *FIRM # 06047C0428G, effective 12/02/2008.*

Department of Energy. U.S. Energy Information Administration. *Total Petroleum Consumption Estimates, 2017*.

Technical Studies

The following are the technical studies prepared for or referenced in this EIR. The studies are included in Volume II:

Ambient Air Quality & Noise Consulting. *Air Quality & Greenhouse Gas Impact Analysis for Merced High School Stadium Project, Merced Union High School District, Merced, CA*. November 2019.

Ambient Air Quality & Noise Consulting. *Noise & Groundborne Vibration Impact Analysis for Merced High School Stadium Project, Merced Union High School District, Merced, CA*. November 2019.

JLB Traffic Engineering, Inc. *Traffic Impact Analysis, Merced Union High School District, Merced High School Stadium, Located on the Northwest corner of "G" Street and Olive Avenue, In the City of Merced, California.* November 7, 2019.

Air Quality and Greenhouse Gas Sources Consulted

California Department of Transportation (Caltrans). 1996. *Transportation Project-Level Carbon Monoxide Protocol. University of California Davis, Institute of Transportation Studies, UCD-ITS-RR-96-1*.

California Department of Conservation (DOC). Division of Mines and Geology. August 2000. *A General Location Guide for Ultramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos. Open File Report 2000-19.*

Biological Resources Sources Consulted

H.T. Harvey & Associates. 2004. California bat mitigation, techniques, solutions, and effectiveness. Prepared for California Department of Transportation (Caltrans), Office of Biological Studies and Technical Assistance, Sacramento, CA. Project Number 2394-01. 163 pgs.

Ingles, L. G. 1965. Mammals of the Pacific States. Stanford University Press, Stanford, California, USA.

Orr, R. T. 1954. Natural history of the pallid bat, *Antrozous pallidus* (Le Conte). Proceedings of the California Academy of Sciences 18:165-246.

Pierson, E. D., and W. E. Rainey. 2002. Bats. Pages 385-400 in J. E. Vollmar, editor. Wildlife and rare plant ecology of eastern Merced County's vernal pool grasslands. Vollmar Consulting, Berkeley, California, USA.

Pierson, E. D., W. E. Rainey, and C. Corben. 2006. Distribution and status of western red bats (*Lasiurus blossevillii*) in California. Species Conservation and Recovery Program Report 2006-04. California Department of Fish and Game, Habitat Conservation Planning Branch, Sacramento, USA.

Reid, F. A. 2006. Peterson field guide to mammals of North America. Fourth edition. Houghton Mifflin, Boston, Massachusetts, USA.

U. S. Code Annotated (USCA). 1918. Migratory bird treaty act of 1918. U.S. Code, Section Title 16, Parts 703-712.

U.S. Fish and Wildlife Service (USFWS). 1998. Recovery plan for upland species of the San Joaquin Valley, California. Region 1, Portland, OR. 319 pp.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White, editors. 1990b. California's wildlife. Volume III: mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, USA.

Noise and Vibration Sources Consulted

United States Department of Transportation, Federal Transit Administration (FTA). April 2006. *Transit Noise and Vibration Impact Assessment.*

Other Sources Consulted

City of Santa Clara Water and Sewer Utilities. *49ers Stadium Water Supply Assessment for Compliance with section 10910 California Water Code.* February 4, 2009.

Google Earth. Aerial photography accessed throughout preparation of the EIR.

Merced County Department of Agriculture. *2018 Report on Agriculture.*

Pacific Gas & Electric. *Company Profile*. https://www.pge.com/en_US/about-pge/company-information/profile/profile.page